

Universidad de Valparaíso

Análisis del estudio de las Ciencias Cognitivas en el
pregrado de Norteamérica, España y Chile:
Una propuesta de actualización y desarrollo

TESIS PRESENTADA A LA FACULTAD DE MEDICINA
PARA OPTAR AL TÍTULO
DE PSICÓLOGO
Y AL GRADO DE
LICENCIADO EN PSICOLOGÍA
ESCUELA DE PSICOLOGÍA

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I. Introducción

Cualquier proceso autocrítico de nuestra disciplina (la Psicología) debe partir de la base de la inserción de ésta en los procesos socio-tecnológicos en los que, como profesionales, nos vemos envueltos.

En un contexto reflexivo de esta especie no se puede obviar la inserción de nuestra disciplina en uno de los campos básicos de desarrollo de la ciencia en los últimos cincuenta años: el de las ciencias cognitivas.

En este conjunto de disciplinas se encuentran ,además de la Psicología, la Epistemología, las Ciencias de la Computación e Inteligencia Artificial, la Neurociencia Cognitiva y la Psicolingüística. Cada una de ellas encargada de guiar la discusión -desde sus diferentes características teóricas y metodológicas- sobre el hombre, el mundo y la mente.

Esta inserción de parte de la Psicología moderna en uno de los campos de estudios más importantes de la sociedad actual, nos lleva a las siguientes preguntas: ¿Están los estudiantes de Psicología en Chile siendo preparados adecuadamente (tópica y metodologicamente) para participar en este proyecto tan amplio?; y este aprendizaje ¿Se da en un contexto de generación del conocimiento actualizado y aportativo?.

Es así que en este estudio, lo que intentamos es desarrollar una visión panorámica de la enseñanza de las Ciencias Cognitivas en los países de referencia de la enseñanza de la disciplina (Norteamérica, España y –obviamente – Chile) y de los tópicos de investigación asociados a ésta.

La idea es que esta panorámica no lleve sólo a un estéril listado de temas y metodologías, sino más bien sirva de base para abrir la discusión sobre cambios curriculares de actualización en nuestra Escuela.

De esta forma el escrito siguiente estará estructurado en torno a los descubrimientos de -si se nos permite la metáfora- nuestra caminata por los paisajes cognitivos, y cómo estos pueden resultar útiles en una reflexión más global sobre la institución donde nos formamos.

Esta reflexión claramente no puede darse en el vacío de un ejercicio puramente académico, sino más bien debe producirse en el marco de la explosión de la oferta de la matrícula de las Carreras de Psicología en nuestro país , y en la posible avalancha de psicólogos profesionales indiferenciados que (en el corto mediano plazo) tal explosión conllevaría.

Así este texto tiene la intención general de servir de ariete para la apertura de nuestra Carrera a los nuevos ámbitos de enseñanza y estudio (los de las ciencias cognitivas) que permitan la diferenciación de los profesionales que genere como institución.

Para esto, ya al final de este trabajo, propondremos una serie de cambios posibles al programa académico de nuestra Escuela, cambios tendientes a incorporar, obviamente, estos nuevos ámbitos de las ciencias cognitivas y generar un profesional que se destaque por sobre el conjunto de psicólogos genéricos tanto por sus conocimientos teóricos-técnicos, como por una natural inserción en la tan mentada sociedad de la información.

II. Planteamiento del problema

Si se analizan los cambios de oferta de matrícula de pregrado de Psicología en Chile en general y en la Quinta Región en particular, podemos ver ciertas tendencias que son preocupantes: en primer lugar observamos una clara tendencia al alza, es decir que la matrícula en las Escuelas de Psicología en los últimos años casi se ha duplicado, esto debido en su mayor parte a la proliferación de instituciones no tradicionales que dictan la carrera; en segundo lugar, vemos como el campo laboral no aumenta al ritmo necesario para cubrir las necesidades de los egresados.

De una rápida revisión de los programas de estudio en de las Universidades Chilenas podemos derivar que no existe una diferenciación tan grande entre una y otra. También podemos apreciar que no existen líneas teóricas distintivas que permitan diferenciar claramente la oferta educacional de un institución a otra.

En este punto se hace difícil definir la actualidad en el quehacer de la disciplina en el ámbito nacional, más aún definir qué temas trata cada institución o incluso si existen investigaciones claramente ligadas al desarrollo institucional de cada una de ellas.

Contemplamos que es este uno de los mayores problemas del quehacer de la disciplina en la actualidad. La poca diferenciación institucional ligada a la poca producción de conocimientos versus la creciente oferta académica, perfilan un panorama más bien complejo en el que sólo las instituciones con mayores recursos, que tengan capacidad para implementar líneas de investigación y la capacidad para entablar alianzas estratégicas con instituciones extranjeras podrán salir airoso y mantenerse en el tiempo como una alternativa de estudios viable y atractiva.

Ante esto creemos que es una necesidad para la Escuela de Psicología de la Universidad de Valparaíso involucrarse en un proceso de actualización de Contenidos y, sobre todo, de evaluación de las políticas que rigen la producción de investigaciones, como

forma de situarse positivamente en el ámbito de la oferta académica nacional a través de una definición teórica, metodológica e investigativa, clara y de conocimiento público.

Pensamos que una alternativa viable para esta definición la representan las ciencias cognitivas.

La elección de este ámbito académico investigativo a primera vista parece antojadiza, sin embargo, responde -más allá de nuestro interés personal en el tema- a que este conjunto de disciplinas (Psicología Cognitiva, Inteligencia Artificial, Epistemología, Psicolingüística, Ciencias de la Computación y Neuropsicología Cognitiva, entre otras menos relevantes) es un campo que, si bien no es nuevo, ha adquirido en las últimas décadas una clara relevancia como foco de generación de conocimiento básico y aplicado en el contexto más general de la sociedad de la información.

Es así que este trabajo intenta describir panorámicamente (en el sentido cinematográfico del término) la enseñanza de las Ciencias Cognitivas en los centros relevantes de preparación del pregrado de Psicología en Chile, Norteamérica y España.

Por tanto y a modo de síntesis las interrogantes que animan este escrito son: qué tópicos y metodologías de enseñanza de las Ciencias Cognitivas aplican los centros de avanzada de la disciplina que imparten pregrado de Psicología, y cómo estos pueden servir de base para una reestructuración curricular en nuestra institución.

III. Objetivos

Objetivo general

Presentar una propuesta teórica e investigativa de actualización de los contenidos referidos a Ciencia Cognitiva en el ámbito del Programa de Estudio de pregrado para la Escuela de Psicología de la Universidad de Valparaíso.

Objetivos específicos

- 1.- Generar y desarrollar un conjunto de temáticas teóricas a través de un proceso de recopilación, análisis y comparación de los programas de estudio de algunas de las cátedras universitarias de pregrado sobre temas de Ciencia Cognitiva en Estados Unidos, España y Chile.
- 2.- Generar y desarrollar una propuesta de líneas de investigación específicas por medio de un proceso de recopilación, análisis y comparación de programas de algunas de las cátedras Universitarias de pregrado sobre Ciencia Cognitiva en Estados Unidos, España y Chile.
- 3.- Generar una secuencia general de contenidos actualizados de Ciencias Cognitivas, como parte de un programa de estudio e investigación unificado para la Escuela de Psicología de la Universidad de Valparaíso, en la que confluyan los temas abordados en la revisión.

IV. Metodología

Metodología para la construcción de los antecedentes teóricos

La construcción del marco teórico para este proyecto en particular ha representado un desafío, puesto que en una investigación que busca la actualización de contenidos, el marco teórico sería una consecuencia del mismo estudio.

Para sortear este problema nuestros antecedentes teóricos siguen la siguiente pauta:

1. Desarrollo historiográfico de la disciplina de la Ciencia Cognitiva, en la que se hace una breve revisión histórica de los eventos más influyentes que ayudaron a dar forma a lo que hoy consideramos las ciencias cognitivas.
2. Revisión de la descripción temática en línea de manuales actualizados en Ciencia Cognitiva, a través de lo cual se definieron las líneas de desarrollo más importantes. Estas líneas conforman la segunda parte de nuestros referentes teóricos.

Metodología para el Análisis de datos

Revisión de antecedentes para el desarrollo de pregrado en Psicología en Chile

En primer lugar registramos antecedentes que perfilan el desarrollo del pregrado de Psicología en Chile, para estos efectos revisaremos dos fuentes que nos permitirán delinear de forma general cuáles son las limitaciones que se deben tomar en cuenta al formular un programa de estudio en esta área.

Los antecedentes son:

1. Colegios de Psicólogos de Chile: En su documento en línea “Exigencias mínimas de formación”, el Colegio expone los requerimientos mínimos en cuanto a las asignaturas que debería tener la Carrera de Psicología, subdivididos por área.
2. Comité para la acreditación del Pregrado en Psicología (CNAP): En su página Web la CNAP enumera una serie de requerimientos temáticos, más bien generales, que deberían estar presentes en la formación de pregrado en Psicología.

Estos antecedentes se utilizarán como base para el estudio de las instituciones nacionales que detallamos en el siguiente punto y para la formulación de nuestra propuesta final de actualización, porque es nuestro interés que todo cambio propuesto concuerde con estas dos fuentes, sobre todo con los criterios de acreditación.

Revisión del Pregrado nacional

En esta sección hemos decidido hacer un análisis de algunas instituciones nacionales que imparten pregrado de Psicología como medio para delinear de forma general la distribución horaria y temática de estas.

El análisis en esta área se llevará a cabo en tres pasos:

1. Definición de Áreas de Estudio: La definición de las áreas de estudio del pregrado se realizará de acuerdo a la información recabada en el Colegio de Psicólogos de Chile y las áreas definidas por la CNAP.
2. Instituciones estudiadas: La información recabada esta actualizada al año 2004 y es, básicamente, información de libre acceso ubicada en las paginas Web institucionales de cada Universidad. La inclusión de las instituciones se ha realizado de acuerdo a los siguientes criterios:
 - a. Disponibilidad de información en la pagina Web institucional.
 - b. La muestra se restringe a instituciones en la Región Metropolitana y la Quinta Región.
 - c. Se incluyen muestras de Instituciones tradicionales y no tradicionales.
3. Análisis: Análisis estadístico descriptivo por área de estudio de la Psicología, mostrando la distribución e importancia relativa que se da a cada una.

Estudio de actualización en Ciencia Cognitiva

El estudio de actualización consta de una revisión de programas de estudios extranjeros de instituciones tanto norteamericanas como españolas, La inclusión de estos países responde básicamente a dos razones:

- La relevancia histórica del desarrollo de la disciplina, como queda claro en el marco teórico, se da principalmente en Estados Unidos, siendo desde este país desde donde proviene la mayor cantidad de material bibliográfico e investigaciones relacionadas con el tema.
- En cuanto a la Bibliografía utilizada actualmente para impartir ramos relacionados con Psicología cognitiva, Psicolingüística, Inteligencia Artificial y Neuropsicología, se

puede decir que la mayoría proviene de España, siendo el suyo el catálogo de publicaciones relacionadas más abundante en habla hispana.

Nuestro análisis, entonces, consta básicamente de dos partes que se desarrollarán de forma separada:

1. Estudio de temas en Ciencia Cognitiva que se tratan académicamente en pregrado en Instituciones extranjeras.
2. Estudio de líneas de investigación que actualmente están en desarrollo en Instituciones extranjeras.

Ambos análisis se harán de forma separada y con algunos cambios dependiendo del área específica. Para los detalles estos se indican en la sección específica, ya sea de asignaturas en Ciencia Cognitiva o investigación en Ciencia Cognitiva.

De forma general el análisis va seguir los siguientes pasos:

1. Selección de las instituciones Norteamericanas y Españolas a analizar a través de los siguientes criterios generales:
 - Para el estudio temático:
 - a. Disponibilidad de información acerca del programa de estudio en la página Web institucional.
 - b. Que exista una descripción de las asignaturas mencionadas.
 - c. Que existan al menos cuatro asignaturas ligadas a las Ciencias Cognitivas
 - Para el estudio en líneas de Investigación:
 - a. Disponibilidad de información acerca de las líneas de investigación en la página Web institucional.

- b. Que exista una descripción de las líneas de investigación mencionadas.
 - c. Que existan al menos cuatro líneas de investigación ligadas a las Ciencias Cognitivas
2. En segundo lugar se ha realizado una organización de los currículos atingentes, a través de un protocolo de normalización (Anexo V). El objetivo de este primer paso es reducir la información obtenida para facilitar los análisis posteriores. Los ítemes que componen el protocolo se han seleccionado utilizando dos criterios generales:
 - a) La información básica que contiene un programa de estudio (nombre de la asignatura, descripción, créditos, etc.)
 - b) La información básica de las líneas de investigación que tiene la institución (nombre y descripción)
3. El siguiente paso es la organización jerárquica de la información. Una vez realizado el análisis estadístico obtendremos una serie de datos no analizados, pero jerarquizados. El orden de importancia en este punto es meramente estadístico y los contenidos se reducirán en función de la frecuencia de aparición.
4. La información recopilada en los pasos anteriores sirve para la proyección de un mapa conceptual o diagrama de flujo que es una dimensión analizada de los datos obtenidos. A través de la organización de la información en diagramas esperamos:
 - Relacionar los distintos temas que han resultado de nuestro análisis.
 - Aplicar un análisis más detallado de los temas obtenidos, incluyendo los contenidos y su relevancia relativa, además de su coherencia temporal.

Estructura de la propuesta de actualización en Ciencia Cognitiva

Finalmente proponemos una actualización del Programa de Estudio de la Carrera de Psicología de la universidad de Valparaíso en temas de Ciencia Cognitiva, tomando en cuenta los datos precedentes tanto del Colegio de Psicólogos de Chile, como los Criterios de Acreditación para el pregrado de Psicología.

La propuesta de actualización consta de tres secciones.

1. Propuesta temática en Ciencia Cognitiva: Consiste de una propuesta de actualización de asignaturas contextualizada en el programa de estudios de la Universidad de Valparaíso.
2. Propuesta de investigación en Ciencia Cognitiva: Propuesta de líneas de investigación contextualizadas para la Universidad de Valparaíso y enfocadas a la producción de aplicaciones. Incluye:
 - a. Factibilidad económica de la investigación.
 - b. Posibilidad de entablar alianzas estratégicas y trabajo multidisciplinario.
 - c. Viabilidad de producir no sólo conocimiento sino productos y servicios.
3. Breve desarrollo de un Laboratorio básico para la implementación de las líneas académicas y de investigación mencionadas.

V. Marco teórico

Introducción

La problemática principal de la construcción de un marco teórico válido para este tipo de tesis es justamente el hecho de que la investigación en si misma trata de definir los temas -y por consiguiente la literatura- que se están enseñando en la disciplina de referencia ,en este caso las Ciencias Cognitivas. Por tanto la investigación bibliográfica que generalmente sirve de base para la construcción de las nociones teóricas de una investigación es de hecho un resultado –valga la redundancia- de la misma investigación.

Para evitar este bucle hemos decidido trabajar las nociones teóricas desde dos perspectivas complementarias: la descripción historiográfica del desarrollo de la disciplina y un recuento del conjunto de temáticas que con más frecuencia aparecen desarrolladas en manuales publicados sobre la misma (Anexo I).

En este último apartado se describirán ciertas nociones básicas sobre Epistemología, Psicología Cognitiva, Procesos Cognitivos Básicos, Procesos Cognitivos Superiores, Inteligencia Artificial (I.A.), Psicolingüística, y algunos campos de investigación enseñanza emergentes como la Neuropsicología Cognitiva.

Desarrollo histórico de la disciplina

Preámbulos

Si intentamos establecer un marco historiográfico para esta investigación nos topamos con el problema de la naturaleza multidisciplinaria de la ciencia cognitiva y de la diversidad de los objetivos y metodologías de las subdisciplinas que la integran (I.A. Matemática, Lógica, Ciencias de la Computación, Psicología Cognitiva, Lingüística, Ingeniería, Neurociencias, etc.).

En este contexto es poco probable la aparición de definiciones excluyentes sobre el tema, sino más bien de nociones amplias sobre su campo de estudio y modelos básicos de explicación. Sesgados por el prisma de los programas de investigación y las controversias que los subsumen, cada autor que se explaya respecto de los orígenes, desarrollo y perspectivas de la ciencia cognitiva, lo hace reflexionando desde su disciplina y programa de investigación en que trabaja. En consecuencia le da una importancia ponderada a los distintos desarrollos históricos, disciplinas involucradas y modelos teóricos.

Para evitar caer en estas controversias, hemos preferido tratar de generar un análisis más global, ligado al concepto de paradigma, que podemos aplicar a los desarrollos disciplinarios descritos por diferentes autores, en particular Varela, 1990 y De Vega , 1984.

Grosso modo, paradigma se define como “una «matriz disciplinar» [...], que incluye desde creencias y preconcepciones, hasta prescripciones aceptadas por la comunidad científica (tipos de problemas que se deben plantear, instrumentación, modelos teóricos, aplicaciones). Ejemplos de paradigmas son la física de Newton, o la teoría evolucionista de Darwin” (De Vega, 1984).

La ventaja principal de este tipo de análisis está en su capacidad de definir cómo se mantienen, entran en crisis y son reemplazados los fundamentos teóricos y la actividad investigativa ligada a estos, de una disciplina.

En particular nosotros, fundamentalmente por razones prácticas de organización , hemos definido tentativamente (basándonos en los trabajos de De Vega, Varela y Gardner) las siguientes fases o paradigmas en las ciencias cognitivas: a) antecedentes previos, b) paradigma del procesamiento de la información, c) Paradigma de las Redes Neuronales (emergencia).

Antecedentes previos

Aquí intentaremos esbozar una primera fase del desarrollo de las ciencias cognitivas, específicamente los años de la aparición de los elementos constitutivos del paradigma central del procesamiento de la información.

Estos elementos seminales podemos dividirlos en dos grandes referentes:

- 1) la creación de las bases de las tecnologías de la información, en especial el modelo de la máquina universal de Turing (que plantea, entre otras cosas, por primera vez la equivalencia entre el pensamiento humano y el cálculo mecánico), el desarrollo de calculadores electrónicos programables (al alero de las necesidades de descifrado y cálculo de trayectorias de la segunda guerra mundial) basados en el modelo de Von Neumann, y la cibernética de primer orden de Wiener (Varela, 1990).
- 2) La crisis del paradigma psicológico del conductismo y su rechazo a las explicaciones mentalistas (fundado en Watson y Skinner la psicología postulaba básicamente análisis asociacionistas más o menos sofisticados de la conducta, y se negaba o minimizaba el valor funcional de los procesos mentales –la famosa caja negra-), Inicialmente son unos pocos psicólogos jóvenes los que muestran una actitud crítica o aperturista (Miller, 1956; Bruner et al., 1956; Broadbent, 1958, todos los citados por De Vega, 1984), pero al final de la década, ya se puede afirmar que un nuevo paradigma ha cristalizado. Especial influencia tuvo la obra de Miller, Galanter y Pribram (1960), *Plans and the Structure of Behavior*, que constituyó un auténtico manifiesto fundacional de la nueva psicología, equivalente a lo que había representado *Behaviorism* de Watson (1925) para el paradigma conductista. Miller y sus colaboradores elaboran ampliamente la analogía mente-ordenador, y ofrecen un programa para la nueva psicología, en el que se manejan

conceptos mentalistas como «imagen mental», «planes», «estrategias», etc. (De Vega, 1984)

Paradigma del procesamiento de la información o la metáfora de la mente -ordenador

Una vez puesta en evidencia la crisis del conductismo, dada su incapacidad de explicar ciertos fenómenos (la controversia Chomsky- Skinner sobre la adquisición del lenguaje es clave en este sentido) surge una necesidad de juntar los esfuerzos repartidos de las nuevas investigaciones y de establecer una serie de objetivos y conceptualizaciones consensuados entre la comunidad psicológica.

Son cruciales de esta manera, los encuentros celebrados en Cambridge y Dartmouth, donde nuevas voces como las de Herbert Simon, Noam Chomsky y Marvin Minsky manifestaron ideas que definirían los ejes principales de la moderna Ciencia Cognitiva (Gardner, 1995).

En estas reuniones (que sirvieron además para que se conocieran los investigadores de este nuevo enfoque y sus correspondientes estudios) la intuición central que prevalecería en esas conferencias era la de que la inteligencia (incluida la inteligencia humana) se parece tanto a un ordenador o computador, en sus características esenciales, que la cognición se puede definir como la computación de representaciones simbólicas –procesamiento de la información-. (Varela, 1990). Esta intuición es el concepto orientador de lo que se llamo más adelante Cognitívismo o Ciencias Cognitivas, que tiene como principales representantes a la Psicología Cognitiva, la Lingüística, buena parte de las Neurociencias y, desde luego, la Inteligencia Artificial.

Siguiendo con lo anterior, Varela plantea “¿Qué significa decir que la cognición se puede definir como computación? Un cómputo es una operación realizada mediante símbolos, es decir, mediante elementos que representan algo”. El argumento cognitivista es

que la conducta inteligente supone la capacidad para representar el mundo de ciertas maneras. Así es que no podemos explicar la conducta cognitiva a menos que demos por sentado que un agente actúa representando rasgos relevantes de las situaciones en que se halla, procesando la información del entorno de diferentes formas. En la medida en que su representación de una situación sea exacta, la conducta del agente tendrá éxito. En un modelo de un proceso mental en la perspectiva del procesamiento de la información, los contenidos mentales adoptan la forma de conjuntos estructurados de símbolos (estructuras representacionales) que son manipuladas y transformadas de acuerdo con ciertas reglas y estrategias (algoritmos y reglas heurísticas), (Garnham, A. y Oakhill, J., 1996).

Gracias a la metáfora del ordenador, la Psicología Cognitiva ha conocido una rápida expansión. El mentalismo, desterrado de la psicología académica desde finales del siglo xix a causa de sus debilidades metodológicas y conceptuales, es reasumido con decisión por la nueva Psicología Cognitiva. La analogía del ordenador en que se basa presta a los psicólogos un vocabulario («codificación», «almacenamiento», «recuperación», «búsqueda de información», «memoria operativa», «memoria a largo plazo», «buffers», etc)., unas directrices -legitimando ciertos objetivos de investigación del paradigma- y una instrumentación (dos tipos de modelos computacionales: la Inteligencia Artificial -IA- y la Simulación -S-), adecuadas para el estudio de la mente (De Vega, 1984).

Paradigmas emergentes: redes neuronales artificiales

Si seguimos con la estructura secuencial de etapas o paradigmas usada hasta ahora, veremos que si bien el núcleo duro de la cognición sigue siendo el procesamiento de la información -estructurada en torno a la metáfora del ordenador- , existe un surgimiento, o más bien resurgimiento, de modelos alternativos a la representación (la emergencia –

enacción plantea Varela –1990-, los modelos formales neuronales en el caso de De Vega, 1984 y Gardner, 1995) que giran en torno a las Redes Neuronales Artificiales.

Orígenes de este paradigma

Las Redes Neuronales Artificiales (RNA) constituyen una línea de investigación en Inteligencia Artificial, la cual tiene como objetivo primario la construcción de máquinas inteligentes. Los orígenes de la IA (que veremos con atención más adelante) hay que buscarlos en el movimiento científico de la Cibernética de los años cuarenta y cincuenta. Este movimiento científico se articuló en torno a la idea de que el funcionamiento de muchos sistemas, vivos o artificiales, puede ser captado mejor por modelos basados en la transferencia de información que por modelos basados en la transferencia de energía. La cibernética se propuso estudiar los elementos comunes entre el funcionamiento de máquinas automáticas y el del sistema nervioso humano (los procesos de control y comunicación en el animal y en la máquina). Este problema fue abordado en un esfuerzo interdisciplinar, en el que intervinieron investigadores procedentes de áreas como Matemáticas, Ingeniería Electrónica, Fisiología y Neurociencia, Lógica Formal, Ciencias de la Computación y Psicología.

Una importante característica de la Cibernética fue la proliferación de distintas perspectivas en torno al problema de las relaciones entre cerebro y máquina. En la segunda mitad de la década de los cincuenta comenzaron a destacar dos de entre estas perspectivas: la IA basada en el procesamiento simbólico, y la investigación en redes neuronales.

La IA simbólica se basó en la expansión del uso de los ordenadores desde el área de aplicación del cálculo numérico a tareas simbólicas, esto es, al procesamiento de elementos que representan palabras, proposiciones u otras entidades conceptuales. Estos sistemas de IA se basan en las expresiones simbólicas que contienen y en la posibilidad de manipular y transformar dichas expresiones, de una manera sensible, a la estructura lógico-sintáctica de

las mismas. Las estructuras representacionales que contiene un sistema de este tipo son manipuladas y transformadas de acuerdo con ciertas reglas y estrategias (algoritmos y reglas heurísticas), y la expresión resultante es la solución de un determinado problema. En un sistema de este tipo, el procesamiento de la información tiene lugar en el nivel simbólico o representacional y no en el nivel neurobiológico. Los sistemas de IA simbólica simulan procesos mentales y cognitivos humanos por medio de programas ejecutados por un ordenador del tipo Von Neumann. Entre los investigadores más importantes de la primera época de investigación en este paradigma se pueden destacar a John McCarthy, Allen Newell, Herbert Simon y Marvin Minsky. Paralelamente, en la segunda mitad de los años 50, algunos investigadores comenzaron a desarrollar una perspectiva diferente en la construcción de máquinas inteligentes: la perspectiva de las RNA o sistemas conexionistas. Esta perspectiva no perseguía la modelación de redes neuronales fisiológicas, sino la construcción de máquinas inteligentes, empleando arquitecturas computacionales de cierta semejanza con las redes neuronales del cerebro. Como antecedentes más directos a este grupo de investigadores, cabe destacar las aportaciones, por un lado, de Warren McCulloch y Walter Pitts y, por otro lado, de Donald Hebb.

McCulloch y Pitts (1943) presentaron la estructura y funcionamiento de la unidad elemental de procesamiento de una red conexionista. La neurona de McCulloch-Pitts, como actualmente se conoce, tiene un funcionamiento muy sencillo: si la suma de entradas excitatorias supera el umbral de activación de la unidad y, además, no hay una entrada inhibitoria, la neurona se activa y emite respuesta (representada por el valor 1); en caso contrario, la neurona no se activa (valor 0 que indica la ausencia de respuesta).

Combinando varias neuronas de este tipo con los adecuados umbrales de respuesta, se puede construir una red que compute cualquier función lógica finita. La evolución de la investigación en redes neuronales desde los años cincuenta a nuestros días ha estado condicionada por dos grandes acontecimientos: el abandono de esta línea de investigación

en la segunda mitad de los sesenta debido a las limitaciones observadas en la red Perceptrón simple y la emergencia del conexionismo en la segunda mitad de los ochenta como paradigma aceptado en IA, gracias, entre otros avances, a la aparición de un algoritmo, denominado *backpropagation error* (propagación del error hacia atrás) o simplemente *backpropagation*, que permite modificar las conexiones de arquitecturas multiestrato.

En el primer período de la investigación en redes neuronales, entre mediados de los cincuenta y mediados de los sesenta, una cantidad importante de científicos, ingenieros y grupos de investigación dedicaron importantes esfuerzos a la construcción y experimentación de estos sistemas. Una de las más importantes fue el trabajo de los grupos de Rosenblatt y Widrow con sistemas conexionistas de único estrato o capa (RNA que solo tienen un estrato de conexiones modificables). La red diseñada por Rosenblatt en 1958, denominada Perceptrón, es un sistema de este tipo. A pesar de tener dos estratos de conexiones, sólo uno de ellos está compuesto de conexiones modificables. La capa de entrada o retina consiste en un conjunto de unidades de entrada binarias conectadas por conexiones con valor fijo con las unidades de la capa de asociación o de predicados. La última capa es la de respuesta o decisión, cuya única unidad, con salida binaria, es la que tiene conexiones modificables con los predicados de la capa anterior.

Declive de la primera fase de investigación de las RNA

El declive del primer conexionismo sobrevino cuando Marvin Minsky y Seymour Papert, dos investigadores líderes de la IA simbólica del prestigioso Instituto de Tecnología de Massachusetts (MIT), publican en 1969 el libro *Perceptrons* (Minsky y Papert, 1969) donde se realizaba una contundente crítica a los modelos de Perceptrón propuestos por Rosenblatt. Las aportaciones principales del estudio de Minsky y Papert pueden agruparse en dos bloques. Por un lado, Minsky y Papert realizaron un estudio, muy elaborado desde un

punto de vista matemático, de algunos de los problemas que presentaban las redes de único estrato. En concreto demostraron que el Perceptrón de una capa, actualmente denominado Perceptrón simple, era incapaz de diferenciar entre entradas en distintas partes de la pantalla, ni entre figuras en distintas posiciones de rotación. Tampoco era capaz de computar con efectividad funciones matemáticas como la paridad (dada una cantidad de puntos activos en la retina, reconocer si es un número par o impar), la función topológica de la conectividad (reconocer una figura como una totalidad separada del fondo) y en general funciones no lineales como la mencionada función OR-Exclusiva. Por otro lado, el segundo conjunto de resultados del estudio de Minsky y Papert es el referido a las RNA de múltiples estratos. En este caso dedicaron mucho menos espacio a este problema en su libro, concluyendo que *“el estudio de las versiones de múltiples estratos es estéril”* (Minsky y Papert, 1969, p. 232) alegando que sería muy improbable obtener una regla de aprendizaje aplicada a este tipo de arquitecturas.

La polémica suscitada en torno a los primeros modelos de red neuronal entre simbolismo y conexionismo hay que situarla en un contexto social, en el que ambos grupos competían por erigirse como paradigma dominante en el campo de la IA, y también por conseguir el apoyo económico de agencias militares como ONR y, sobre todo, DARPA (*Defense Advanced Research Projects Agency*, la Agencia de Proyectos de Investigación Avanzados del Ministerio de Defensa de los Estados Unidos). Los investigadores de IA simbólica vieron al conexionismo como una amenaza directa para sus intereses, y se opusieron a que las agencias militares apoyaran económicamente proyectos de envergadura en RNA (Boden, 1984, Russell, S. & Norvig, P.,1996.)

La polémica de los años setenta entre el simbolismo y el conexionismo terminó con la aceptación por la gran mayoría de los científicos de la IA, del paradigma simbólico como línea de investigación más viable. La credibilidad que la élite de IA simbólica (Herbert Simon, Allen Newell, Marvin Minsky y John McCarthy) consiguió tanto dentro de la comunidad

científica (estos investigadores dominaron la disciplina) como fuera de ella (apoyo económico de DARPA) es un indicativo de la posición favorable en la que estos investigadores quedaron cuando la polémica sobre el Perceptrón se dio por terminada.

En la década de los ochenta coincidieron una serie de acontecimientos que jugaron un papel relevante en la reemergencia del conexionismo. En esos momentos, la IA simbólica se encontraba en una fase de comercialización tras el anuncio del Programa de la Quinta Generación de Ordenadores por parte del gobierno japonés y el desarrollo de los sistemas expertos. Los ordenadores de esta generación debían de ser capaces de resolver problemas muy complicados, algunos de los cuales requieren toda la experiencia, capacidad de razonamiento e inteligencia de las personas para ser resueltos. Debían trabajar con grandes subconjuntos de los lenguajes naturales y estar asentados en grandes bases de conocimientos. A pesar de su complejidad los ordenadores de esta generación se están diseñando para ser manejados por personas no expertas en informática. No obstante, a pesar del éxito de estos sistemas en ciertas áreas de aplicación, un número creciente de investigadores comenzaba a ser consciente de las limitaciones de los sistemas simbólicos ante ciertas tareas --denominadas del mundo real--, como el reconocimiento de objetos, el reconocimiento de lenguaje hablado y el razonamiento de sentido común. Conforme avanzaba la década de los ochenta, estas limitaciones condujeron a investigadores procedentes de diversas áreas a realizar aportaciones alternativas a las propuestas por la IA simbólica.

Reemergencia de las RNA

En este sentido, uno de los casos más paradigmáticos es el del físico John Hopfield, considerado como uno de los impulsores más importantes del nuevo conexionismo. Hopfield publicó en 1982 un importante artículo en la Academia Nacional de las Ciencias. Este escrito claro y conciso tuvo un importante impacto en el campo por varias razones. En primer lugar,

Hopfield era un conocido físico con conexiones institucionales importantes. Su interés y trabajo en redes neuronales legitimó el campo para la comunidad científica. En segundo lugar, impulsó la implementación de los modelos de red mediante dispositivos electrónicos utilizando tecnología VLSI (Muy Alta Escala de Integración). En tercer lugar, Hopfield sugirió una estrecha relación entre los sistemas físicos y las redes neuronales. El concepto clave de las redes propuestas por Hopfield es que consideraba la fase de ajuste de las conexiones como una búsqueda de valores mínimos en unos paisajes de energía. Según esta idea, cada combinación de pesos de las conexiones de la red tiene asociada una energía, que resulta de evaluar las restricciones determinadas por los datos de entrada y el resultado producido por la red. El intercambio de información entre unidades se mantiene hasta que la entrada y la salida de cada unidad sean iguales, es decir, en términos de Hopfield se ha llegado a un estado de equilibrio energético. A diferencia de las redes Perceptrón y ADALINE, las redes utilizadas por Hopfield poseen una arquitectura monocapa cuyas conexiones son modificadas a partir de un algoritmo de aprendizaje basado en la regla de Hebb. Las redes de Hopfield han sido empleadas como memorias autoasociativas, principalmente para el reconocimiento de patrones.

El modelo de Hopfield fue posteriormente desarrollado por Hinton y Sejnowski, dos de los más importantes miembros del grupo de investigación PDP (*Parallel Distributed Processing*), (Universidad de San Diego, California), en su sistema denominado "máquina de Boltzmann". El algoritmo para la modificación de conexiones del sistema de múltiples estratos de Hinton y Sejnowski fue una de las aportaciones más importantes de la primera fase de la reemergencia del conexionismo de los ochenta. Era la primera vez que un algoritmo de este tipo encontraba una aceptación considerable en la comunidad científica.

Sin embargo, la contribución más importante en la reemergencia del conexionismo en los años ochenta fue la técnica *backpropagation* desarrollada por Rumelhart, Hinton y Williams. Realmente, esta técnica fue desarrollada inicialmente por Paul Werbos a mediados

de los setenta, y después independientemente redescubierta por varios grupos de investigadores (Le Cun, 1985; Parker, 1985; Rumelhart, Hinton y Williams, 1986). Es, por tanto, un caso de “descubrimiento múltiple”. Sin embargo, en general se reconoce que fue la versión del grupo Rumelhart, Hinton y Williams la que desató el interés en RNA a mediados de los ochenta y consiguió, finalmente, forzar la revisión del consenso contrario al conexionismo.

El algoritmo *backpropagation* también recibe el nombre de regla delta generalizada o método de gradiente decreciente, debido a que supone una extensión de la regla propuesta por Widrow y Hoff en 1960 (regla delta) a redes con capas intermedias. Este tipo de arquitectura recibe el nombre genérico de Perceptrón Multicapa o MLP (*Multilayer Perceptron*).

Como se comentó anteriormente, la falta de un algoritmo para la modificación de conexiones en sistemas de múltiples estratos limitaba considerablemente la capacidad de clasificación de objetos en los sistemas conexionistas de los años sesenta. En este sentido, el problema principal de la modificación de los valores de las conexiones en una red MLP es hallar el error cometido por las unidades de las capas intermedias. El error cometido por las unidades de salida es inmediatamente visible: es la diferencia entre la salida producida por dichas unidades y la salida que se desea que produzcan. El objetivo del algoritmo *backpropagation* es propagar los errores cometidos por las unidades de salida hacia atrás, ya que, en un sistema de este tipo, el error cometido por una unidad intermedia depende del error cometido por las unidades de salida a las que dicha unidad intermedia está conectada. Tras conocerse el error cometido por las unidades intermedias, pueden entonces modificarse las conexiones entre unidades de entrada y unidades intermedias.

El proceso de acumulación de resultados e investigaciones y de esfuerzo organizacional por parte del grupo de Rumelhart, Hinton y Williams, comenzó a hacer peligrar el consenso anticonexionista con el que terminó la polémica del Perceptrón. Los dos

volúmenes PDP (procesamiento distribuido en paralelo), considerados como la “biblia” del conexionismo, son el mayor exponente de este esfuerzo. El debate sobre el conexionismo se estaba reabriendo, y ésto hizo reaccionar de nuevo a los investigadores críticos con el conexionismo. La reacción fue encabezada, una vez más, por Minsky y Papert que, en el epílogo a la nueva edición de su libro *Perceptrons* editada en 1988, criticaron contundentemente las afirmaciones de Rumelhart y sus colegas acerca de los sistemas de múltiples estratos con el algoritmo *backpropagation*. Sin embargo, esta vez la polémica no acabó con el abandono del conexionismo como ocurriera en la década de los sesenta.

Situación Actual de las RNA

Gracias al esfuerzo de movilización y acumulación científica y organizacional que el grupo de investigación PDP realizó a lo largo de la década de los ochenta, el conexionismo ha logrado en la actualidad diferenciarse como una especialidad científica aceptada, dentro del marco general de la IA. Este proceso ha culminado con el surgimiento, desarrollo e institucionalización de una comunidad científica diferenciada con su correspondiente sistema de comunicación y control especializado (publicaciones científicas, congresos, cursos de postgrado, institutos de investigación, programas y becas en las agencias que financian la investigación científica, etc.)

Definiciones temáticas

Siguiendo con nuestro análisis, una vez esbozada una historiografía de las ciencias cognitivas, nos parece adecuado hacer una pequeña reseña de los tópicos centrales de éstas.

Esto nos genera un nuevo problema práctico ¿qué subdisciplinas reseñar?. En este contexto nos parece conveniente basarnos en las temáticas más mencionadas por los manuales del área (clásicos y modernos), con lo cual definimos los siguientes conceptos a reseñar: Epistemología, Inteligencia Artificial, Psicolingüística, Atención-Percepción, Pensamiento-Memoria, y Neuropsicología Cognitiva (Figura 1).

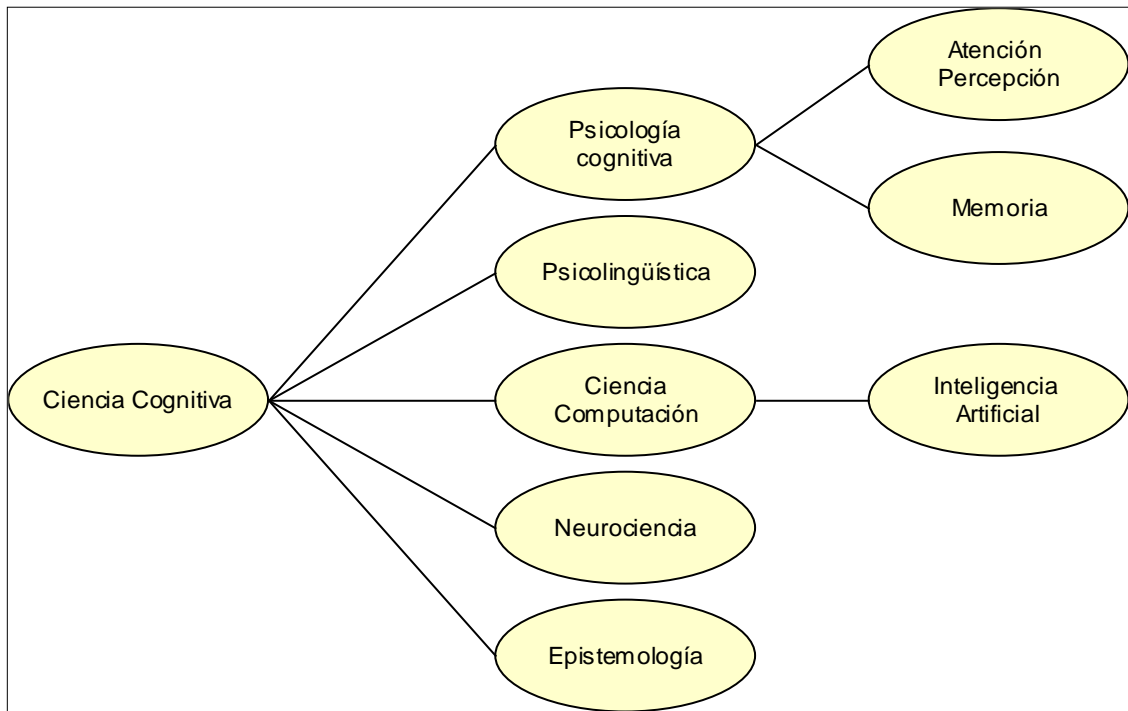


Figura 1: Disciplinas que componen las Ciencias Cognitivas

Elaboración propia

Epistemología

El problema central de intentar hacer un esbozo de la Epistemología es que ésta es una parte fundamental de la filosofía especulativa desde el inicio de la disciplina, así entre los pensadores que la han tratado se cuenta a Platón, Descartes, Locke, Hume, Berkeley, Kant y, ya en este siglo, Russel, Whitehead, Wittgenstein, Putnam, Fodor, Rorty y otros (Gardner, 1995), entonces o bien resumimos dos mil quinientos años de historia del pensamiento humano (tarea que, además de escapar de los propósitos de este estudio, es a todas luces imposible de hacer en el limitado espacio del que disponemos) o bien centramos nuestra mirada en la forma como se trata el tema específicamente en la enseñanza de las ciencias cognitivas.

En este contexto, en una definición rápida y general del término encontraremos que las raíces etimológicas de epistemología provienen del griego (episteme), conocimiento, y - (logos) estudio. Así epistemología estudia la naturaleza y validez del conocimiento. También ha sido llamada Teoría del Conocimiento (términos más comúnmente usados y difundidos por los alemanes e italianos), o Gnoseología (utilizado frecuentemente por franceses). En las últimas décadas también es conocida como Filosofía de la Ciencia.

El propósito de la Epistemología es distinguir la ciencia auténtica de la pseudociencia, la investigación profunda de la superficial, la búsqueda de la verdad de sólo un modus vivendi. También debe ser capaz de criticar programas y aun resultados erróneos, así como de sugerir nuevos enfoques promisorios.

El problema fundamental que ocupa a la Epistemología es el de la relación sujeto-objeto. En esta teoría se le llama "sujeto" al ser cognoscente y "objeto" a todo proceso o fenómeno sobre el cual el sujeto desarrolla su actividad cognitiva. De este modo, el problema se presenta en la relación de quien conoce y lo que es cognoscible. En esencia, se

trata de la naturaleza, carácter y las propiedades específicas de la relación cognoscitiva, así como de las particularidades de los elementos que intervienen en esta relación.

En la cultura y filosofía griegas el hombre era definido como un ser racional. El ser racional y el actuar racionalmente eran signos inequívocos del hombre. La racionalidad era el ideal más sublime al que podía y debía aspirar todo hombre. Toda acción debía estar supeditada al control y al imperativo de la razón.

Por otro lado, la racionalidad del hombre pertenecía a una dimensión suprafísica o metafísica de lo humano, de un valor incalculablemente superior a la realidad material. Constituía la naturaleza esencial específica del hombre o lo que Aristóteles llama la forma substancial o entelequia. A pesar de que los griegos tenían pruebas sobradas de la irracionalidad del comportamiento humano seguían aferrados a la idea de que el hombre era lógico y racional. Aristóteles llegó a construir, en su Organon, una ciencia (la Lógica), en la que se definían las leyes del pensar. La Lógica no era una parte de la Filosofía, sino el pórtico para cualquier forma de saber.

Centrándonos en la época moderna, resulta inevitable referirse a la figura con la que no solo se inaugura el pensamiento moderno (Descartes), sino también con el que se inician, en profundidad, los debates acerca de las relaciones mente/cuerpo, espiritualismo/mecanicismo, lenguaje/pensamiento, representación mental/contenido extramental, el origen innato de las ideas, el funcionamiento de los procesos cerebrales, la imposibilidad de simular la mente en un artefacto, sea orgánico o inorgánico; temas todos ellos de plena actualidad en la Ciencia Cognitiva.

El pensar, para Descartes, sigue constituyendo la esencia del hombre. Proclama el poder de la subjetividad: un yo que piensa, cuya existencia es independiente de cualquier cosa material (dualismo) y que puede ser estudiado con independencia de la realidad. La mente, el pensamiento, la conciencia es el órgano de las ideas, que son innatas, de las representaciones, cuya conexión con las cosas representadas no es necesaria. Podemos

estudiar la mente con independencia de la realidad (solipsismo metodológico) a través de un proceso introspectivo. Su teoría representacional de la mente le lleva a separar dos ámbitos de realidad claramente incompatibles: uno tratable matemáticamente (el ámbito de la materia, en el caso del hombre, el cuerpo=mecanicismo), y el otro (el pensamiento) no susceptible de ser tratado ni experimental ni matemáticamente, que, la contrario, es el ámbito que define al hombre substancialmente.

Frente al optimismo mentalista cartesiano de tipo dogmático, Kant, interesado y obsesionado por ofrecer un fundamento epistemológico sólido al conocimiento, inicia la explicación del modelo de conocimiento desde un supuesto previo: someter a juicio la propia facultad de conocimiento, hacer de la "Crítica de la Razón Pura" un canon de la facultad de conocer, como condición para saber cuál es su alcance y cuales sus limitaciones. Quiere determinar lo que podemos y lo que no podemos conocer y cómo y por qué. Su objetivo es únicamente éste: cuáles son nuestros poderes cognitivos, si los tenemos, para ser capaces de producir conocimiento.

Este autor trató de demostrar que poseemos la materia prima necesaria para la adquisición del conocimiento, pero el yo tiene que poner en marcha una actividad capaz, no de crear, pero sí de construir el objeto de conocimiento. La revolución copernicana de Kant ha consistido en cambiar la cuestión fundamental de la epistemología, "cómo nuestras ideas se conforman a los objetos", por "cómo los objetos se rigen por nuestro conocimiento".

El pensamiento depende de la mente, no de los objetos. El yo pienso, como unidad trascendental de la conciencia, es la condición de todo conocimiento, pues debe ser capaz de "acompañar a todas mis representaciones" y, sin embargo, no puede ser objeto de experiencia, a pesar de que la psicología racional se empeña en aplicarle la categoría de substancia a través de un silogismo falaz, que utiliza los términos de sujeto y substancia en dos sentidos diferentes

El idealismo trascendental kantiano es, no obstante, un idealismo atenuado, compatible con un realismo empírico que lo limita, claramente diferenciado de aquel otro idealismo, cuyo objetivo es la reducción, por elevación, de todo a lo mental; tal como ocurre, aunque por razones distintas, en el caso del idealismo subjetivo de Berkeley, y del idealismo objetivo de Hegel.

Era necesario conocer la manera cómo formamos los conceptos, cómo y que tipos de juicios o enunciados proposicionales formulamos, los tipos de razonamiento válidos y la relación de esas diferentes formas de representación con los contenidos. A esas leyes se las consideraba universales y comunes a todos los hombres que piensan. Eran reglas del pensar que tenían un carácter puramente formal. Leibniz dirá también, más tarde, que el pensamiento es una forma de razonamiento formal, y Hobbes, que el pensamiento es un tipo de cálculo con símbolos no numéricos.

Ahora bien si volvemos a revisar los textos introductorios de Varela y Gardner veremos que estos entienden la Epistemología como una parte de las ciencias cognitivas en sí, más que como un referente o un antecedente de estas, Esto es especialmente importante en Varela, ya que éste incluso la articula como uno de los ramas fundamentales de su concepción de las Ciencias Cognitivas, adjudicándole las investigaciones particulares de ciertos científicos cognitivos (Fodor, Dennet, Hofstaedler, Dreyfus, Maturana, Johnson y Rorty)

Si revisamos, en este sentido los aportes específicos de los pensadores posteriores la segunda guerra mundial, es importante detenernos un poco en el funcionalismo y en su exponente más clásico: Hilary Putnam. Lo que plantea el funcionalismo es la necesidad de centrar la descripción de los procesos inteligentes más allá del sustrato material específico que los sustentan. Esto implica renunciar o más bien obviar el estudio puramente neurológico de tales procesos y estudiarlos como entes abstractos (la organización funcional, según Putnam –Gardner, 1995-).

Otro pensador importante es Daniel Dennet que tratando de escapar al funcionalismo puro de Putnam plantea la idea de la intencionalidad (tanto humana como artificial) como base de la definición de lo que podemos entender como procesos mentales (Gardner, 1995).

Jerry Fodor, en cambio, enfoca su postura en la forma como el lenguaje de estos (las representaciones) es la base de los procesos mentales que podemos estudiar. En este sentido, si un proceso es computable (abstraible) debe por definición actuar sobre representaciones, además en el caso del ser humano estas representaciones son claramente innatas (Gardner, 1995).

Inteligencia Artificial (I.A.)

El término inteligencia artificial hace referencia a máquinas que piensan y (en algunos casos) actúan como humanos. Nuestro conocimiento general de tales máquinas viene mayormente de las visiones de la cultura pop y la ciencia ficción: HAL de “2001. Una odisea del espacio”, los malvados Terminators, los robots de Isaac Asimov, Astro Boy de Osamu Tezuka etc. Sin embargo la I.A. más allá de su variante ficcional, como ya vimos, es una rama de investigación que es desarrollada desde antes de la Segunda Guerra Mundial (existiendo de hecho antecedentes desde el siglo XVIII) por una serie de disciplinas científico-técnicas tan disímiles como las ciencias de la computación y -la que nos importa- la Psicología.

Desde los tiempos de Platón ha sido el sueño de algunos filósofos explicar la inteligencia mediante conceptos significativamente similares a los de la I.A. (Boden, 1994) pero la tarea de explicar procesos mentales como procesos rigurosamente explicitables requirió el desarrollo de ciertas herramientas analíticas fundamentales, como el desarrollo del álgebra de Boole en 1847, que permitió desarrollar operaciones formales algebraicamente consistentes a partir de los primitivos lógicos (Boden, 1994). Más tarde, en 1849, Gotlob Frege sentó otro precedente sustancial para los entusiastas de la especificación de procesos mentales en términos lógicos con la publicación de su obra “Lógica y Semántica”, que dio varios pasos adelante en el cálculo lógico de predicados y planteó explicaciones formales rigurosas al problema del abordaje de significados. Estos precedentes conceptuales dieron sustancia más tarde a los sueños de los filósofos sólo a través de otro desarrollo histórico paralelo: los autómatas. Su desarrollo, más allá de simples piezas de relojería, tiene un hito de inicio marcado por Pascal en 1641, con su primera sumadora mecánica. Más tarde, en 1832 Babbage (Boden, 1994) diseñaría su “Ingenio Analítico” como primera máquina diferencial programable, sentando con ello un precedente

de factibilidad técnica para el cálculo físico de símbolos y la programación de multiplicidad de funciones de cálculo en un mismo dispositivo. El cruce de estas líneas de evolución lo marca en 1936 Alan Turing (Boden 1994) con el desarrollo del concepto de máquina universal para definir la inteligencia humana y artificial en términos de funciones lógicas reproducibles o definibles. Especificó por primera vez un procedimiento general para implementar algoritmos en un sistema binario de almacenamiento potencialmente infinito, que daría soporte a la creación de relaciones funcionales mediante un algoritmo: un procedimiento general de cálculo sustentado en un conjunto discreto de estados posibles, capaz de procesar cualquier magnitud de entrada de datos. El algoritmo codificado como un número binario (enorme), procesa las entradas para entregar las respuestas en una cinta de papel infinita (Penrose, 1996). Estas respuestas serían equipotenciales con respuestas inteligentes en humanos. A esta idealización matemática agregó un sistema de comprobación llamado “Prueba de Turing” para definir si las relaciones funcionales implementadas en cualquier hardware son satisfactorias.

El nacimiento de la I.A. como una disciplina científica y con pretensiones de poseer un programa de investigación unívoco tuvo su nacimiento en la conferencia de Darmouth en 1956 (ya reseñada como nacimiento histórico de las ciencias cognitivas y de la metáfora del ordenador), convocada por John McCarthy con la consigna de intercambiar ideas sobre computadores inteligentes en una jornada de 2 meses. La conferencia distó mucho de cumplir con las expectativas de McCarthy. Pero sirvió para dar sentido de identidad a los investigadores y fue el catalizador para la formación de los primeros laboratorios de I.A.: en Carnegie Mellon: Newell y Simon, en el MIT: Minsky, en Edinburgo: Michie y en Stanford: McCarthy

Contribuciones como SGP (Solucionador General de Problemas) de Newell, Shaw y Simon, creado en 1957, marcaron el norte del programa de investigación funcionalista en la búsqueda de grandes sistemas de aplicación universal (Papert,2000). Al

año siguiente McCarthy diseñó la primera versión del lenguaje Lisp, llamado de manera entusiasta “La lengua materna de la I.A.” La novedad de este lenguaje fue la incorporación de un motor de inferencias programable capaz de procesar listas de conceptos ingresados en modo declarativo, de manera que se convirtió en una poderosa herramienta para la producción de sistemas de conocimiento experto. Aún faltaba entonces estructura a la investigación del lenguaje en el programa funcionalista, ésta fue otorgada por Ross y Quillian en 1963 con el concepto de “Redes Semánticas” del que surgieron varios modelos que pretendieron explicar el sistema de almacenamiento de conceptos utilizado por el cerebro. Será desde el año 1965 en adelante, cuando se producirían los avances más inspirados y ambiciosos del desarrollo de la I.A.: conseguir la representación general del conocimiento y consolidar el paradigma funcionalista como programa de investigación más financiado.

El atractivo del funcionalismo radicaba en la separación teórica entre hardware o estructura física y software o programa, algoritmo, estructura funcional definible en términos de una serie de estados discretos implementable en cualquier hardware. El desfinanciado programa conexionista por otro lado, proponía que las propiedades funcionales de una máquina dependen de las conexiones entre sus partes y, por lo tanto, para replicar un sistema de cómputo como la inteligencia humana es necesario imitar las propiedades relevantes de los elementos constitutivos del cerebro: las neuronas como procesadores elementales y masivamente paralelos. Mientras Quillian realizaba modelos a partir de su concepto de las Redes semánticas, concebidas para dar una solución al problema computacional de almacenamiento y recuperación de conceptos y Terry Winograd exploraba los sistemas de reglas con su “Mundo de bloques”, Minsky y Pappert trabajaban en su obra Perceptrons, demostrando la limitaciones de computabilidad de los perceptrones unicapa, ejemplos emblemáticos del programa de computación conexionista. El éxito de la obra fue literalmente aplastante y aseguró la continuidad de los fondos de investigación para el programa funcionalista. Más tarde Minsky se dedicaría por completo a Frames,

contribuyendo a la generación de productivos modelos de conocimiento contextual. Papert se embarcaría en el proyecto de Laboratorio de Medios del MIT. Este derrotero que se prolongó hasta el año 1975 generó grandes avances en el desarrollo de capacidad mecánica de comprensión del lenguaje natural, visión artificial y representación del conocimiento.

En los años siguientes y después de toparse el propio programa funcionalista con demasiados problemas de computabilidad, comenzó a gestarse un cambio de foco en el programa de investigación. Las investigaciones se volcaron a resolver tareas más específicas de sistemas de procesamiento de diversa índole, poniendo más énfasis en las diferencias de los diversos tipos de conocimiento que en sus similitudes. Surge el concepto de modularidad y de inteligencias múltiples, lo que aporta un nuevo enfoque para producir modelos basados más en las diferencias entre los diferentes tipos de conocimiento humano que en sus similitudes (Araya, 2000), (Papert, 2000). Se explora más el problema del conocimiento experto, de dominio tanto desde el programa funcionalista como del renaciente programa conexionista (como ya vimos), avivado por Rumelhart y McClelland con su obra "Procesamiento Distribuido en Paralelo", en la que demostraron la eficacia de nuevas arquitecturas de redes neuronales artificiales que no adolecen de las limitaciones de computabilidad del perceptrón unicapa. Actualmente este programa de investigación tiene líneas de investigación fuertes en reconocimiento de patrones perceptuales y clasificación en tiempo real (COTEC, 1998). Se explora el problema del aprendizaje, del reconocimiento de voz e imagen y nuevos conocimientos como la lógica difusa y los algoritmos genéticos pasan a formar parte del sustrato teórico de las investigaciones. El escollo actual para la I.A. parece ser el problema evadido por siempre: el conocimiento de sentido común.

Psicolingüística

Jean Berko Gleason, y Nana Bernstein Ratner (1999) plantean que el campo de la psicolingüística, o la psicología del lenguaje, trata de descubrir los procesos psicológicos mediante los que los humanos adquieren y usan el lenguaje. Tradicionalmente, los psicolingüistas han abordado tres cuestiones fundamentales:

1. **Comprensión:** cómo comprenden las personas el lenguaje hablado y escrito. Esta es una amplia área de investigación que implica el análisis del proceso de comprensión a muchos niveles, incluyendo la investigación de cómo interpretan los oyentes la señal del habla (percepción del habla), cómo se determinan los significados de las palabras (acceso léxico), cómo se analiza la estructura gramatical de las oraciones para obtener unidades semánticas mayores (procesamiento de oraciones), y cómo se formulan y evalúan de forma adecuada conversaciones o textos más largos (discursos). El interés específico en cómo se procesa el lenguaje escrito forma parte también de este dominio.
2. **Producción del habla:** cómo producen el lenguaje las personas. Los autores en general indican que es algo más fácil estudiar la comprensión que la producción, se aprende más sobre la posible naturaleza del proceso de producción lingüística mediante los errores de los hablantes (errores de habla o comienzos incorrectos) y por las pausas en el ritmo continuo del habla (fenómenos de vacilación y pausa, o disfluencias del habla).
3. **Adquisición:** cómo se aprende una lengua. El principal centro de atención en este ámbito ha sido cómo adquieren los niños su lengua materna (Psicolingüística Evolutiva) y la adquisición de una lengua extranjera. . En sí misma, la Psicolingüística Evolutiva se ha convertido en una disciplina enormemente amplia

con una gran colección de revistas científicas, textos y monografías dedicadas específicamente a esta cuestión.

Además de estas áreas de investigación, continúa la búsqueda de las bases neurológicas del funcionamiento del lenguaje humano. La neurolingüística investiga los correlatos anatómicos y fisiológicos de las conductas lingüísticas, progresando a pasos agigantados en la identificación de áreas particulares del cerebro humano asociadas con capacidades lingüísticas específicas.

Por supuesto, el objetivo final de la investigación psicolingüística es desarrollar una explicación integral de cómo se producen el uso y la comprensión adecuados del lenguaje y cómo adquieren los niños estas habilidades con tanta rapidez. Por muchas razones, la comprensión de este proceso constituye una meta aún por alcanzar: el lenguaje es uno de nuestros sistemas de conducta más complejos. Además, los mejores instrumentos y técnicas de investigación no son muy aptos para toda la gama de habilidades que encontramos en las interacciones comunicativas. Por ejemplo, los métodos que sirven para investigar la comprensión de ciertas estructuras sintácticas por parte de oyentes adultos con frecuencia no se adecuan bien, o nada en absoluto, al estudio de la comprensión del lenguaje en niños o el proceso de producción del habla por adultos o niños. Los mejores modelos del lenguaje humano aprovechan las evidencias convergentes de la comprensión y producción en adultos y de la adquisición del lenguaje en niños. (Berko y Bernstein, 1999)

Atención y Percepción

Como todas las temáticas de la cognición aquí reseñadas, podemos ver que el surgimiento y desarrollo inicial del estudio de la atención-percepción surge históricamente muy al principio del desarrollo de la psicología (en los laboratorios de Wundt ya se investigaba), se bloquea con la preeminencia del paradigma conductista, y resurge en la crisis de este y su reemplazo por el procesamiento de la información. Además de lo anterior se potencian estas investigaciones por el interés de la industria aero-espacial en sus resultados (manejo de instrumentos múltiples de navegación por ejemplo). En este contexto, el primer modelo que utilizó este enfoque fue elaborado por Donald E. Broadbent en 1958, a quien no sólo ha de considerarse pionero, sino también un influyente inspirador de la investigación cognitiva posterior. Broadbent propuso que el sistema humano de procesamiento de información incluye una fase de filtrado que reduce de alguna forma la cantidad de información que será procesada ulteriormente. Con ello incorporaba en su modelo la función selectiva de la atención.

Los modelos que se han defendido después del de Broadbent son muchos y muy variados, pero su revisión puede simplificarse si se agrupan según las ideas básicas que comparten. Así, es posible distinguir un primer tipo de modelos, a los que se suele aplicar etiquetas como de filtro, estructurales o de canal único, entre los que se incluyen el de Broadbent y otros posteriores que coinciden en analizar la atención fundamentalmente como selección de información. En la década de los setenta proliferan las investigaciones sobre la distribución de la atención entre distintas tareas y con ello, modelos que inciden principalmente sobre la intensidad de la atención que se presta en una tarea concreta. De entre estos modelos, los de más impacto son los que comparan la atención con una especie de recurso o recursos que pueden ser necesarios para que se complete el procesamiento de la información. Hacia finales de los años setenta, algunos teóricos discuten la idea de

capacidad limitada de procesamiento que subyace tanto en las teorías del filtro como en las de recursos, discusión que derivará en una conceptualización de la atención como una serie de mecanismos de selección que operan para garantizar la coordinación y el control de nuestras acciones.

Razonamiento y Memoria

La memoria puede ser estudiada desde el punto de vista neurobiológico (estructuras corticales asociadas a la memoria), o desde el psicológico (memoria como estructura o proceso mental). Dentro de este último, están los modelos mentalistas (paradigma cognitivo) y los no mentalistas (tradición asociacionista de E-R o estímulo-respuesta).

Ambos modelos no son necesariamente reducibles entre sí, y aquí trazaremos rápidamente el enfoque cognitivo (obviamente), y más concretamente los problemas de cómo se adquiere la información, de la naturaleza unitaria o múltiple de la memoria, de cómo se organiza la información, de cómo se recupera dicha información, de cómo se olvida, y los problemas de la memoria implícita (relación memoria-conciencia) y de la memoria autobiográfica.

En la década del cincuenta, la propuesta de la 'metáfora del ordenador' (como ya vimos) cambió en 180 grados las investigaciones hacia un enfoque más mentalista, y la memoria fue entendida como una estructura que almacena información y la recupera cuando es necesario (concepción *estructural*). Por ejemplo, los modelos de filtro de Broadbent y el modelo modal -o modelo Multi-almacén-, de 1968.

Luego de los estructurales, surgieron los modelos *funcionales*, como por ejemplo la memoria operativa de Baddeley y Hitch (década del setenta). Y por último, surgieron los modelos *neuropsicológicos* a partir del estudio en amnésicos, que buscaban las estructuras corticales que posibilitaban la memoria, como el enfoque dual y el enfoque múltiple. Luego también surgieron otros enfoques que en vez de postular estructuras cerebrales diferenciadas, hablaron de procesos mentales diferenciados (enfoques *procesales*), de 1989 en adelante.

De esta forma el modelo multi-almacén de Atkinson y Shiffrin, básicamente propone que el procesamiento de la información ocurre de una manera secuencial a lo largo de tres

estructuras: a) el almacén sensorial, b) el almacén a corto plazo (ACP o MCP), y c) el almacén a largo plazo (ALP).

a) *Almacén sensorial*.- La información ingresa primeramente a los registros o almacenes sensoriales, de los cuales hay varios tipos según el estímulo recibido: almacén visual o memoria icónica, almacén auditivo o memoria ecoica, etc. (son distintos 'modos' de registro, y por ello se lo llama modelo modal).

Desde Sperling, este almacén sensorial tiene:

1. Capacidad ilimitada.
2. Escasa persistencia temporal.
3. Formato: registro precategorial.
4. Función: tiene la función que almacenar rápidamente toda la información posible en bruto para que esté disponible para su procesamiento posterior. Lo que no queda en el almacén sensorial, se pierde irremediabilmente.

b) *Almacén a corto plazo (ACP o MCP)*.- Una fracción de la información pasa del almacén sensorial a esta nueva estructura llamada Almacén a corto plazo, donde se evalúa si la información es pertinente y si vale la pena enviarla al almacén más permanente (largo plazo).

La memoria a corto plazo tiene, según el modelo modal, las siguientes características:

1. Capacidad limitada: solo puede guardar hasta 7 unidades de información o chunks (7 letras, 7 palabras, etc.).
2. Duración limitada: Peterson ha establecido unos 18 segundos el tiempo que dura la información en la memoria a corto plazo, y otros hablaron de 2-4 sg., pero siempre es un tiempo mayor al del almacén sensorial.

3. Formato codificado: en este almacén a corto plazo, la información se estructura o formatea mediante procesos diversos de codificación que pueden ser verbales, visuales, semánticos, etc., es decir, implica categorialidad.
4. Funciones: el ACP tiene como funciones la retención y el procesamiento de la información.

Con respecto al punto 2, se propusieron diversas teorías para explicar por qué el ACP tiene una duración limitada: la teoría del deterioro temporal (con el tiempo las huellas se evaporan), la teoría de la interferencia proactiva (los recuerdos anteriores o viejos interfieren o entorpecen la recuperación de los recuerdos nuevos), y la teoría de la discriminación temporal (que asume a la vez que las huellas mnémicas sufren un decaimiento espontáneo y que la recuperación de un ítem -recuerdo- comporta algún tipo de discriminación).

c) *Almacén a largo plazo (ALP)*.- Es una gran base de datos permanente donde estaría almacenada toda la información sobre el mundo y nosotros mismos. Toda esta información ingresó al ALP a través de la memoria a corto plazo.

Presentaría las siguientes características, siempre según el modelo multi-almacén:

1. Capacidad (cuasi) ilimitada: a los efectos prácticos, la capacidad es ilimitada o, al menos, enorme.
2. Persistencia temporal indefinida: la información se guarda indefinidamente.
3. Formato: aunque el ALP almacena las propiedades semánticas de los estímulos, preserva también otro tipo de información ya sea visual, musical, motora, etc.
4. Función: básicamente retentiva y práctica, puesto que guarda información que nos es útil siempre.

Para explicar el punto 2, se propusieron diversas teorías que explican por qué la información tiende a persistir y por qué se la olvida: la teoría del desuso de Ebbinghaus (la información se olvida porque no se usa, y persiste porque se usa), la teoría de la interferencia (el olvido se produce porque otros recuerdos interfieren en la recuperación de los recuerdos más nuevos (interferencia proactiva) o de los más viejos (interferencia retroactiva), y la teoría de las claves de recuperación (el olvido se produce porque la huella se debilitó o destruyó por la irrupción en el ALP de nuevos recuerdos).

En 1972, Craik y Lockhart propusieron una alternativa al modelo multialmacén de Atkinson y Shiffrin ya que consideraron que si bien tal modelo se había preocupado por estudiar la capacidad de la memoria y los formatos de codificación de la información, no había prestado suficiente atención a cómo se procesa tal información y cuáles pudieran ser las posibles etapas del procesamiento.

En su modelo alternativo, estos autores enfatizan las operaciones de codificación (registro) como determinantes de la permanencia relativa de lo almacenado, partiendo del supuesto de que la memoria es un sistema unitario con diversos niveles de procesamiento: estructural, fonológico y semántico que ocurren de manera continua desde los niveles de senso-percepción y reconocimiento de patrones hasta los niveles de atribución de significado. En este modelo se concibe la memoria más como un proceso activo y menos como un almacén de información. Esta propuesta, denominada teoría de los niveles de procesamiento, enfatiza el grado en el cual analizamos la información nueva y señala que la cantidad de procesamiento de la información que se produce cuando nos encontramos con ese material, es de vital importancia para determinar qué cantidad de información vamos a recordar.

El nivel superficial se orienta hacia el procesamiento de las características sensoriales y físicas de la información: ¿qué aspecto tiene una letra, o un número o una palabra? Es decir, este tipo de procesamiento se refiere, básicamente, a características relacionadas con la estructura de la información. Por ejemplo, si leemos la palabra “flor”, sólo vamos a prestar atención a las formas de las letras.

En el nivel intermedio de procesamiento, atendemos principalmente a los rasgos de carácter fonológico; añadiéndole sonido a las letras, traducimos las letras en unidades significativas y las consideramos en el contexto de las palabras.

En el nivel de procesamiento profundo, denominado también procesamiento de rasgos semánticos, analizamos la palabra en función de su significado ubicándola en un contexto más amplio, pudiendo derivar asociaciones entre su significado y otros que tengamos almacenados. Por ejemplo, podemos pensar en distintos tipos de flor, podemos imaginarlas o relacionarlas con eventos en los cuales es usual recibir o enviar flores, etc.

La teoría de los niveles de procesamiento o de profundidad de procesamiento, como también se le ha denominado, parte de un conjunto de supuestos los cuales se resumen a continuación:

- Lo importante no es dónde procesamos la información (MCP, MLP) sino la cantidad de procesamiento que esta información recibe.
- El procesamiento de la información es un continuo que va desde un procesamiento superficial, pasando por uno intermedio hasta llegar al más profundo, de carácter semántico, de construcción de significado.
- La persistencia de la información que almacenamos en nuestra memoria está en función de la profundidad del análisis. En consecuencia, los niveles de análisis más profundos permiten que dicha información sea más elaborada, más fuerte y más perdurable.

- A mayor grado de análisis semántico, mayor profundidad de procesamiento.
- La sola repetición o práctica de la información no garantiza que ésta sea transferida a la MLP. Craik y Lockhart distinguen dos tipos de práctica: de mantenimiento y elaborativa. La primera es superficial y nos permite mantener la información en la MCP. La segunda nos permite establecer vinculaciones entre la información que recibimos con la que ya tenemos en nuestra MLP.

Neurociencia cognitiva

La Neurociencia Cognitiva ha surgido en la investigación actual como resultado de la aparición de un conjunto de técnicas que permiten el registro in situ de la actividad cerebral humana en un contexto de realización de tareas experimentales. De esta forma ha sido posible en los últimos quince años relacionar las medidas de precisión y de velocidad que tradicionalmente ha estudiado la psicología experimental humana con medidas de la actividad neuronal.

Su principal objetivo es el estudio de las *representaciones internas* de los fenómenos mentales: las bases neurales de la cognición. Los mecanismos neurales de los más altos niveles de la actividad humana: lenguaje, imaginación, pensamiento

Las representaciones internas a nivel teórico son constructos para explicar fenómenos cognitivos que van desde percepción visual hasta comprensión de un relato.

A nivel neural, son patrones de actividad en una o más regiones del encéfalo que representa a un estímulo externo, una acción, un sentimiento, o un pensamiento.

La Neurociencia Cognitiva brinda contribuciones a interrogantes tales como:

1. Si los procesos mentales están *localizados* en regiones específicas del encéfalo o representan una propiedad colectiva emergente del encéfalo en su totalidad.
2. Si varios procesos mentales pueden localizarse en diferentes regiones encefálicas, qué *reglas* relacionan la anatomía y la fisiología de una región con su función específica en la percepción, el pensamiento o el movimiento.
3. Si pueden entenderse mejor esas reglas examinando la región *como un todo* o estudiando sus células individuales.
4. Hasta qué punto cualquiera de estos procesos mentales localizados puede entenderse en términos de *propiedades de células nerviosas* específicas y sus interconexiones.

VI. Análisis

Introducción

La presente investigación busca la actualización de temas en Ciencia Cognitiva a través de la exploración de referentes externos de vanguardia entre los que se cuentan Universidades extranjeras, específicamente instituciones norteamericanas y españolas, pero también busca la contextualización de estos contenidos en un marco específico, el pregrado de la Escuela de Psicología de la Universidad de Valparaíso. Es por esto que el análisis se subdivide de forma general en tres áreas principales:

1. Análisis del pregrado de Psicología en Chile: que es una revisión de los requerimientos externos y del pregrado, incluyendo algunos datos estadísticos relevantes para el análisis posterior. Esta sección comprende:
 - Criterios del Colegio de Psicólogos.
 - Criterios de acreditación.
 - Revisión del pregrado de Psicología en Chile.

2. Análisis de instituciones extranjeras relacionados con el desarrollo de temas cognitivos. Esta sección comprende:
 - Análisis temático por asignatura.
 - Análisis temático por investigación.

3. Propuesta de desarrollo para la Universidad de Valparaíso
 - Propuesta de actualización temática para la enseñanza del pregrado de Psicología en la Universidad de Valparaíso.

- Propuesta de líneas de investigación.
- Propuesta de implementación de Laboratorio.

Queremos aclarar que para el caso de las instituciones extranjeras esta es una revisión guiada y, por lo tanto, no representa una tendencia nacional o global, simplemente la búsqueda de datos actualizados en ciencia cognitiva

Psicología en Chile

Criterios mínimos de formación del Colegio de Psicólogos de Chile

El Colegio de Psicólogos de Chile lista en su página Web¹ una serie de requerimientos básicos para las carreras de Psicología, los cuales se dividen en formación básica, formación general y formación profesional.

Si bien las exigencias del colegio no representan un imperativo, puesto que no posee la autoridad para sancionar la entrega de títulos, representa un antecedente valioso que vale la pena tomar en cuenta al inicio de este análisis, puesto que da una clara indicación de cómo se concibe la Psicología en Chile, Una disciplina tradicional y generalista en la que se trata de entregar al alumno la mayor cantidad de información posible en el menor lapso.

Analizaremos brevemente cada una de las áreas de formación requeridas con el fin de ahondar en las temáticas que se consideran necesarias, haciendo hincapié en aquellas que nos parezcan más rígidas e incongruentes con la formación de un Psicólogo para el mercado académico-laboral actual.

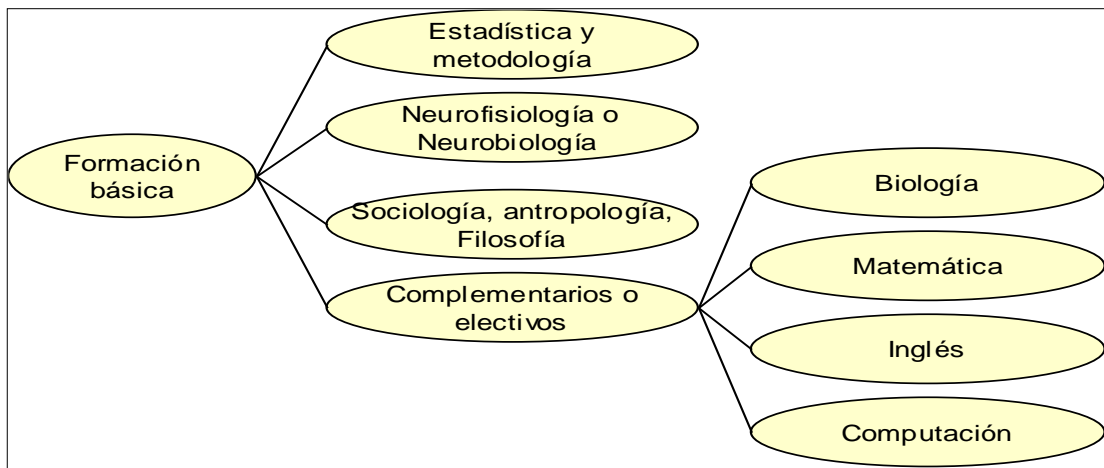
¹ www.colegiopsicologos.cl

Formación básica

El sector básico de la formación sugerida por el colegio de Psicólogos se caracteriza por la generalidad de los tópicos que presenta (Figura 2), llamando poderosamente la atención la inclusión con el carácter de obligatorios de disciplinas tales como Sociología, Antropología y Filosofía, lo que claramente resta espacio a otras temáticas directamente relacionadas con Psicología y que atenta contra el acortamiento del pregrado (política ministerial de consensuada entre las Universidades).

La formación necesaria en Estadística y en Metodología debería, a nuestro juicio, formar parte de la formación general Psicología y contener un enfoque específico para las temáticas de la disciplina, incluyendo herramientas tanto en el ámbito de la aplicación como del análisis de datos específico en ella.

Figura 2: Formación básica en Psicología, Colegio de Psicólogos de Chile

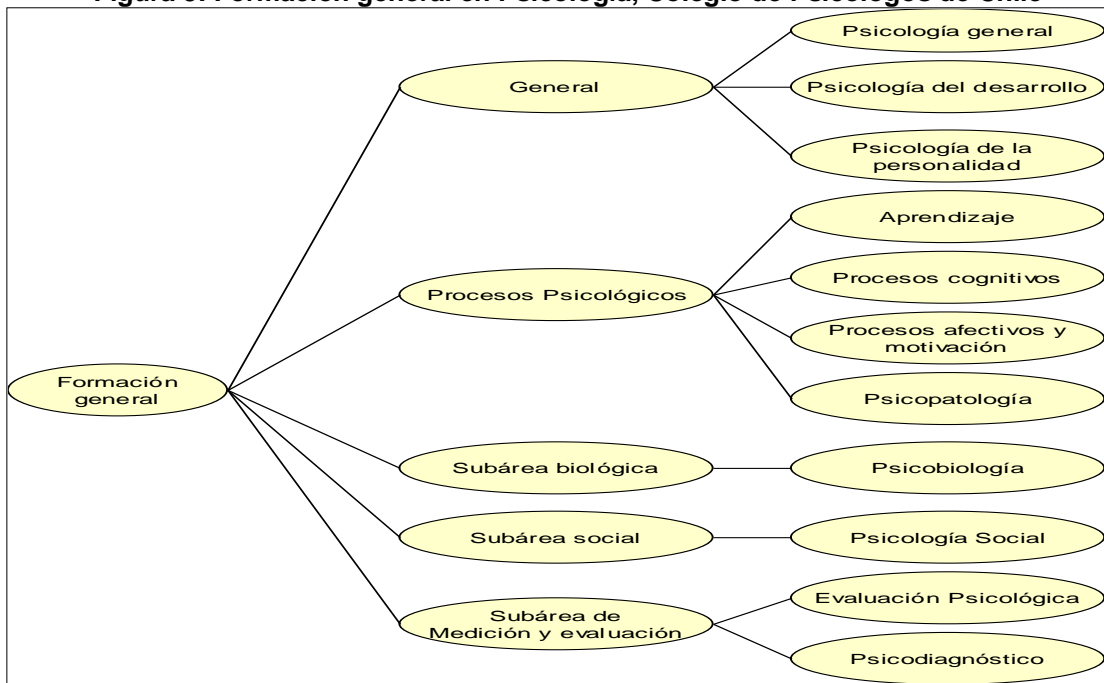


Elaboración propia

Formación general

La formación general se subdivide en cinco áreas, cada una avocada a partes específicas del desarrollo de la disciplina (Figura 3). Encontramos en esta área los tópicos más amplios del desarrollo histórico de la disciplina desde la Psicología del desarrollo a la Psicobiología, aunque nos llama poderosamente la poca atención que se le pone a esta última, teniendo en total solo dos ramos en toda la formación, si tomamos en cuenta la Neurofisiología que se menciona en la formación básica.

Figura 3: Formación general en Psicología, Colegio de Psicólogos de Chile



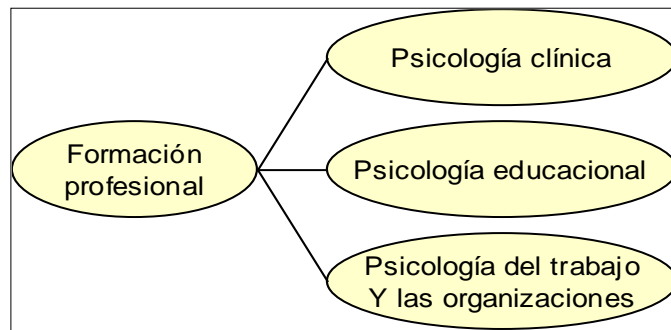
Elaboración propia

Otra característica de la formación general propuesta es la falta de asignaturas prácticas o de aplicación, como mencionamos anteriormente. Tal vez en esta sección debería incluirse metodología de la investigación Psicológica apuntando hacia ciertas temáticas básicas de la investigación o la producción de aplicaciones. Continuaremos con esta idea en las conclusiones.

Formación profesional

La formación profesional requerida por el Colegio de Psicólogos se caracteriza por la inclusión de la mayor cantidad de áreas de aplicación posibles, solicitando que al alumno se le entrene en Psicología clínica, educacional y organizacional (Figura 4).

Figura 4: Formación profesional en Psicología, Colegio de Psicólogos de Chile



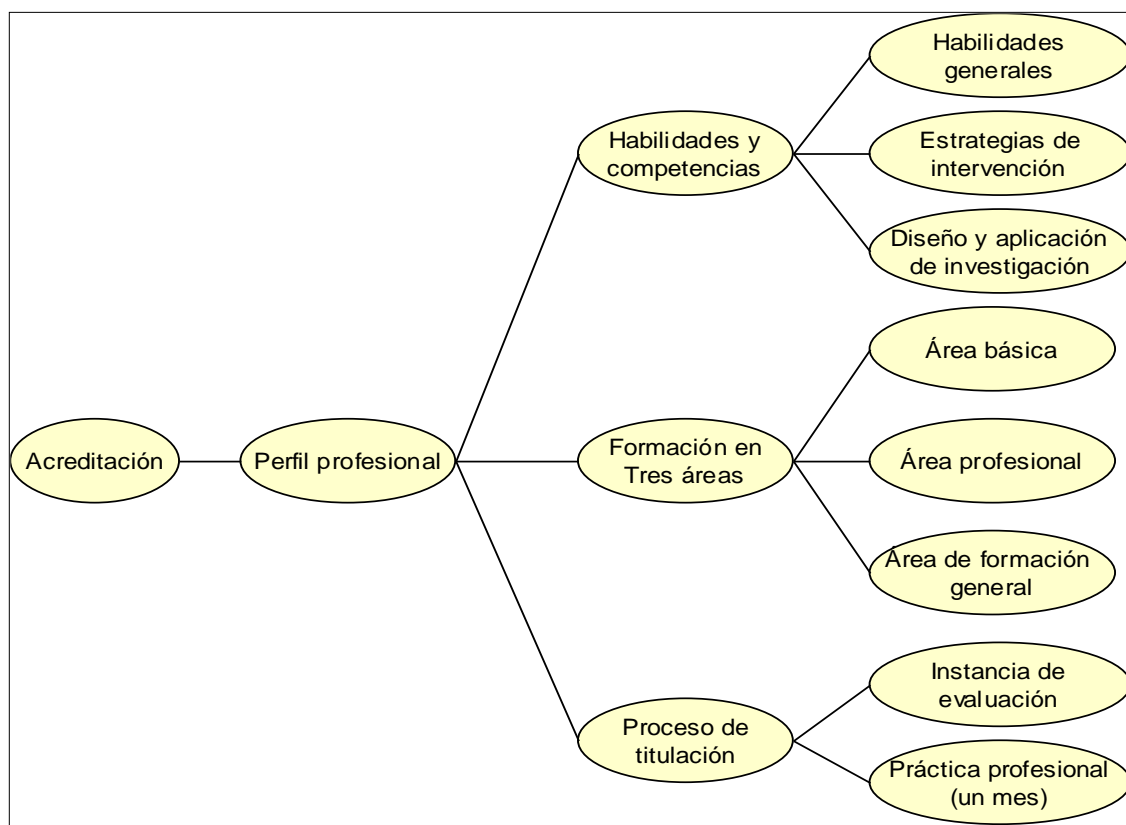
Elaboración propia

Esta sección presenta una multiplicidad de especialidades, con un mínimo de un semestre por cada una, esto además de mostrar un acercamiento a las áreas más tradicionales de desarrollo de la Psicología, muestra, a nuestro juicio, un enfoque tal vez demasiado abarcador de la Psicología que no se compromete con una línea teórica específica. Aún así se hace la salvedad de que una escuela puede suscribirse teóricamente, siempre y cuando esto se avise de antemano a los postulantes.

Criterios de acreditación para carreras de Psicología en Chile

Acercas de los criterios de evaluación generales que se toman en cuenta en el proceso de acreditación de las carreras de Psicología en Chile diseñados por la CNAP² (Comité nacional de acreditación del pregrado) y específicamente en los requerimientos de perfil profesional y estructura curricular (Anexo II), podemos observar que la principal preocupación está enfocada hacia la definición de un perfil profesional detallado y la coherencia de éste con las líneas que intenta desarrollar la carrera.

Figura 5: Criterios de acreditación en perfil profesional para carreras de Psicología, CNAP



Elaboración Propia

² www.cnap.cl

La definición de una línea de escuela consecuente y clara permite la elaboración de un plan de desarrollo institucional que abarque procesos de autoevaluación y actualización constantes, los que son esenciales en el proceso de acreditación.

En cuanto a temáticas, los requerimientos enunciados en la Figura 5 no son específicos, se centran más bien en áreas de dominio general, por ejemplo, la definición de Psicólogo a través de competencias específicas como el diagnóstico, la evaluación y la intervención a nivel individual y grupal. Es importante mencionar que estos requerimientos no difieren demasiado de los del Colegio de Psicólogos; la inclusión de tres áreas específicas de formación dan una clara indicación de ello. Se puede apreciar una flexibilización en cuanto a la inclusión de temáticas o ramos específicos. Como ya se ha mencionado en este proceso se pone el énfasis en la planificación y los mecanismos de evaluación, de tal modo que la definición de un perfil profesional preceda a un proyecto de desarrollo institucional y, por ende, conduzca a mecanismos efectivos y cuantificables de autoevaluación.

Universidades que imparten Psicología en Chile

El estudio realizado sobre las Universidades que imparten Psicología en Chile se ha realizado sobre dos premisas centrales:

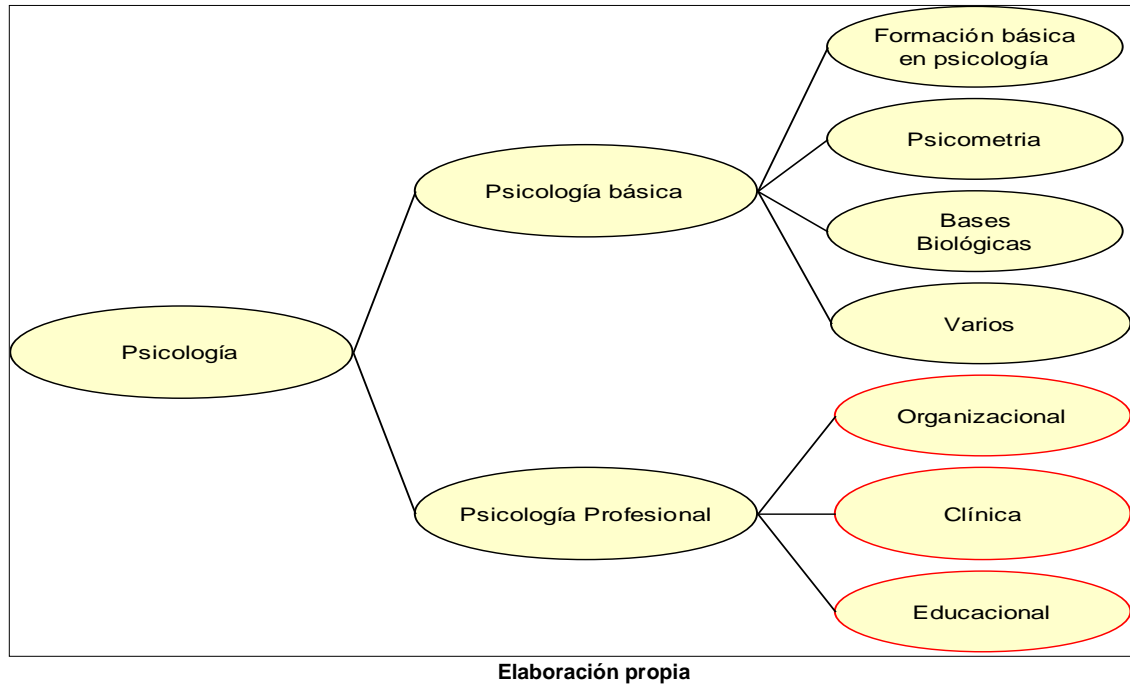
1. El desarrollo de la Psicología en Chile no sigue una escuela teórica específica, sobre los datos de una primera exploración no existe información que justifique la inclusión de estas instituciones en categorías discretas de tendencias teóricas específicas.
2. El estudio, entonces, se realiza sobre la base de que no hay líneas teóricas dominantes y la organización se funda en de la información recabada en el Colegio de Psicólogos y en los criterios de acreditación de la CNAP.

Nuestro objetivo en este punto es simplemente dar una visión general sobre la organización del pregrado en áreas clásicas del desarrollo de la disciplina, determinando el espacio que efectivamente existe para organizar una propuesta final que se aproxime a los cánones de otras organizaciones y de las instituciones que regulan el pregrado en Chile.

En primer lugar hemos definido dos áreas de desarrollo que son el ciclo básico y el ciclo profesional (Figura 6), los que se diferencian principalmente en los temas que enfocan y su aproximación general a estos.

El ciclo básico se enfoca en temas generales en Psicología y áreas complementarias que contribuyen al desarrollo profesional y deberían entregar sólidas bases teórico-prácticas para el trabajo individual y multidisciplinario que se requerirá en el ciclo profesional. Este está subdividido en:

Figura 6: Áreas de Psicología en pregrado



1. Formación básica en Psicología: Incluye todos los ramos relacionado con Psicología General.
2. Psicometría: Incluye Estadística, Metodología y todos los ramos relacionados con Psicometría y Medición.
3. Bases biológicas: Incluye Biología General, todos los ramos relacionados con Fisiología y Neurociencia. Además aquí se incluyen los ramos relacionado con Psiquiatría y Psicopatología.
4. Varios: Esta categoría incluye los electivos y todos los ramos no relacionados directamente con Psicología y que se consideran complementarios como Sociología, Antropología etc.

El ciclo profesional se define por el enfoque práctico que deben tener los contenidos.

En esta área generalmente las Universidades ofrecen talleres profesionales en tres especialidades clínica, organizacional y educacional, algunas de las cuales son electivas.

Finalmente el análisis se realizará sobre la base de ramos totales asignados a las áreas antes descritas, lo que resultará en una media de la duración de la carrera una distribución de los ramos por área y el porcentaje que cada una de estas ocupa en el desarrollo de la carrera.

Universidades analizadas

Las Universidades nacionales que forman parte de nuestra muestra se subdividen en primer lugar entre Universidades tradicionales y no tradicionales.

Nuestra muestra ha sido escogida siguiendo los siguientes criterios:

1. Se han incluido las Universidades que imparten pregrado de Psicología en la Quinta región, porque estas representan el campo en el que se inserta la Universidad de Valparaíso y nos dan un panorama general del quehacer en Psicología regional.
2. Se incluyen Instituciones tradicionales y no tradicionales de la región Metropolitana de acuerdo a su importancia relativa en el desarrollo de la Psicología como disciplina en Chile.
3. Además se ha tomado en cuenta la disponibilidad de información en el momento del análisis. La muestra se ha compuesto a través de información disponible en páginas Web institucionales de libre acceso.

Las Universidades que componen nuestra muestra son:

- Universidades Tradicionales.
 - Universidad de Chile
 - Pontificia Universidad Católica de Chile
 - Pontificia Universidad Católica de Valparaíso

- Universidad de Valparaíso

- Universidades no Tradicionales.
 - Universidad Andrés Bello
 - Universidad Mayor
 - Universidad Central
 - Universidad Santo Tomás
 - Universidad del Mar
 - Universidad Viña del Mar

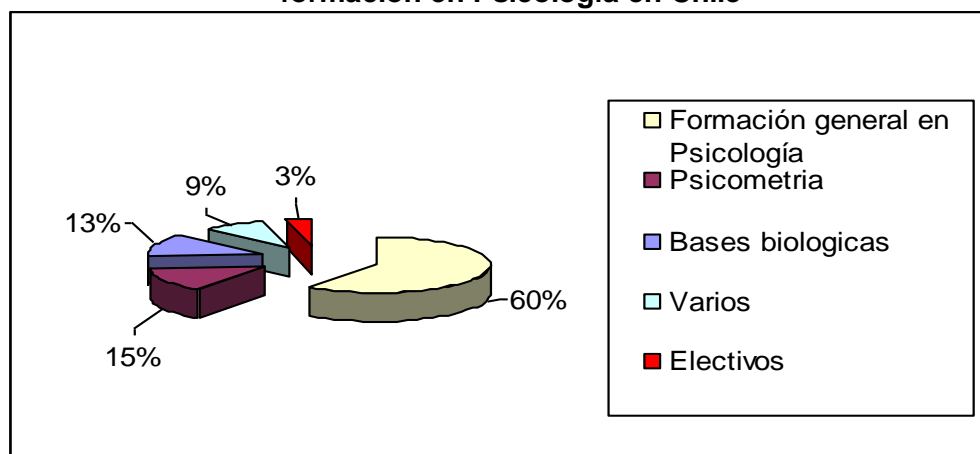
Análisis de las Universidades que imparten pregrado de Psicología en Chile

Formación básica en Psicología

Los resultados correspondientes a la formación en el ciclo básico (Gráfico 1) muestran una distribución marcada por la amplia importancia dada a los temas directamente relacionados con Psicología con aproximadamente un 60% de la formación total asignada en esta ciclo, también llama la atención el bajo porcentaje asignado a electivos, pero esto es concordante con el acortamiento del pregrado.

La formación en bases biológicas y en Psicometría comparten porcentajes similares, por lo que se puede asumir que representan un desarrollo constante a lo largo del desarrollo del pregrado.

Gráfico 1: Distribución de carga horaria en el ciclo básico formación en Psicología en Chile



Elaboración propia

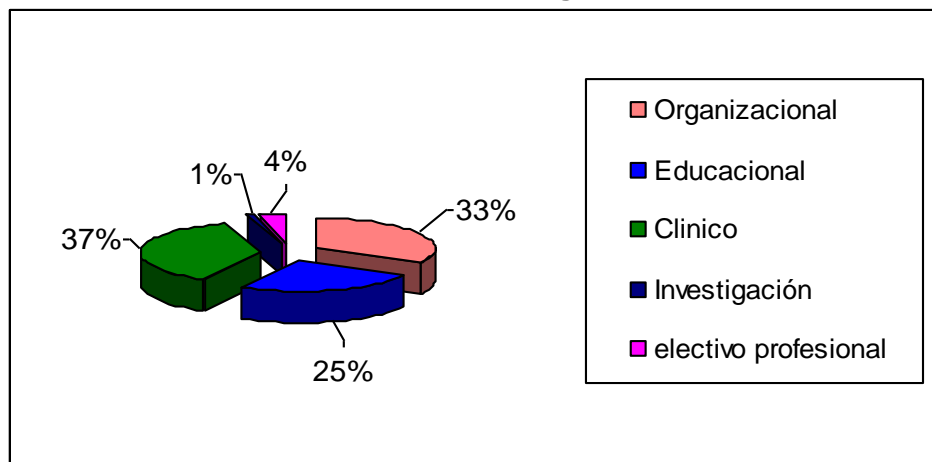
Ahora, sobre la distribución específica de los ramos dentro del área de formación general podemos observar una variación mínima, ya que las universidades analizadas tienen una distribución conservadora que no se aleja demasiado de los requerimientos generales del Colegio de Psicólogos. De todas formas existe un espacio en el que se pueden enfatizar

ciertos contenidos, lo que finalmente especificará, si es que la hay, una línea determinada. De todas formas no se aprecia que este sea el caso puesto que, como hemos mencionado anteriormente la formación en Psicología sigue un esquema más bien clásico y sobre todo generalista.

Formación profesional

Podemos apreciar que las tres áreas de aplicación más tradicionales en Psicología presentan porcentajes de desarrollo bastante semejantes (Gráfico 2), aunque de todas formas se puede apreciar un incremento en las horas promedio asignadas a Psicología clínica, que aún hoy sigue siendo el área que define la Psicología como área de aplicación tradicional y como la imagen social que proyecta la carrera.

Gráfico 2: Distribución de carga horaria en el ciclo profesional, Formación en Psicología en Chile



Elaboración propia

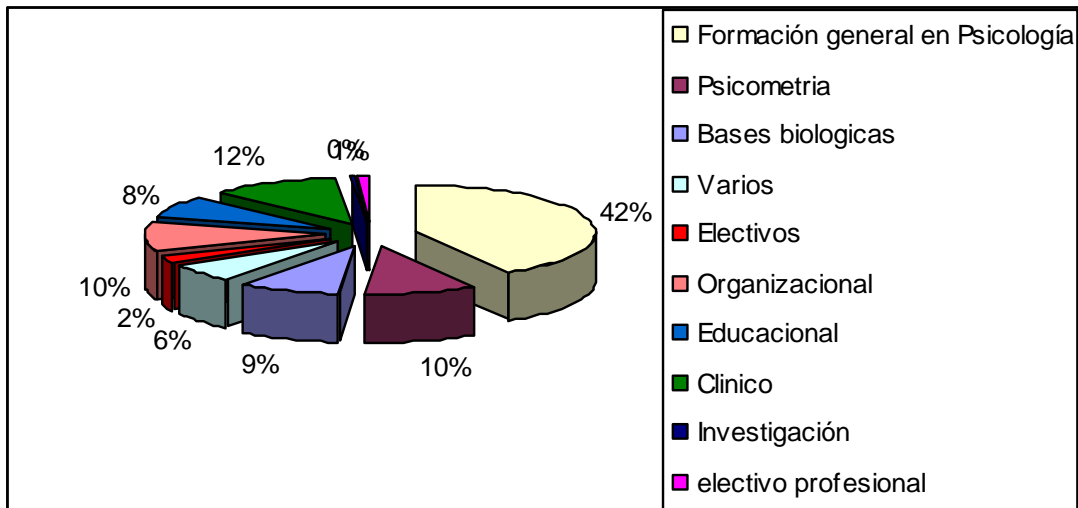
Ahora, estas cifras pueden ser engañosas puesto que representan la oferta total de ramos por área, sin incluir la segregación por electivos, ya que es esta la modalidad que utilizan la mayoría de las Universidades en su ciclo profesional.

Ahora, hemos agregado al análisis dos datos extras, que son investigación y electivos profesionales, las que respectivamente representan ramos asignados como netamente investigación en el ciclo profesional los que son un 1% de la asignación total de las Universidades a esta área. Los electivos profesionales se entienden como ramos separados de las tres áreas de desarrollo profesional definidas y que abarcan temáticas específicas de aplicación, por ejemplo, la inclusión de ramos en Psicología jurídica o talleres específicos de desarrollo de habilidades. Esto representa en promedio un 4% de la asignación total de ramos por área.

Consideraciones al análisis de áreas en Psicología

Como se ve en el Gráfico 3 la distribución total de ramos representa una clara inclinación hacia los temas generales en Psicología, constituyendo un 40% de la distribución total de la asignación total de ramos, dándose en este sector la mayor variabilidad, puesto que si bien la mayoría de las Universidades comparten los mismos ramos prescritos por los criterios de acreditación, varían en cuanto a enfoques individuales de cátedra a cátedra, siendo muy difícil designar una tendencia específica.

Gráfico 3: Asignación de horas por área, Universidades que imparten pregrado de Psicología en Chile



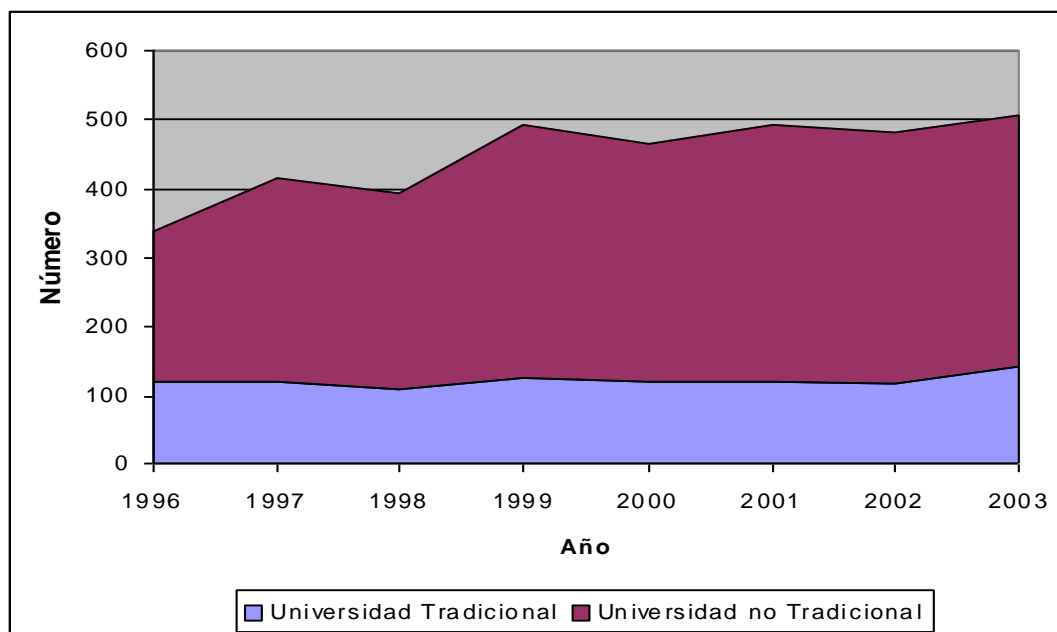
Elaboración propia

Finalmente debemos señalar que esta distribución se produce en un promedio de 10 semestres para las Universidades revisadas, en los cuales se incluye la titulación a través de mecanismos particulares, siempre respetando el tiempo mínimo de práctica y una instancia de evaluación final.

Consideraciones finales al análisis del pregrado en Psicología

Para finalizar este estudio del pregrado en Psicología consideramos algunos datos relacionados con el desarrollo de la disciplina desde el punto de vista de la oferta creciente en el campo de las Universidades. Ofrecemos en este caso un análisis segregado de la situación de las instituciones en la Quinta Región.

Gráfico 4: Matrículas Quinta Región Desagregado para Universidades Tradicionales y No Tradicionales que Imparten Psicología



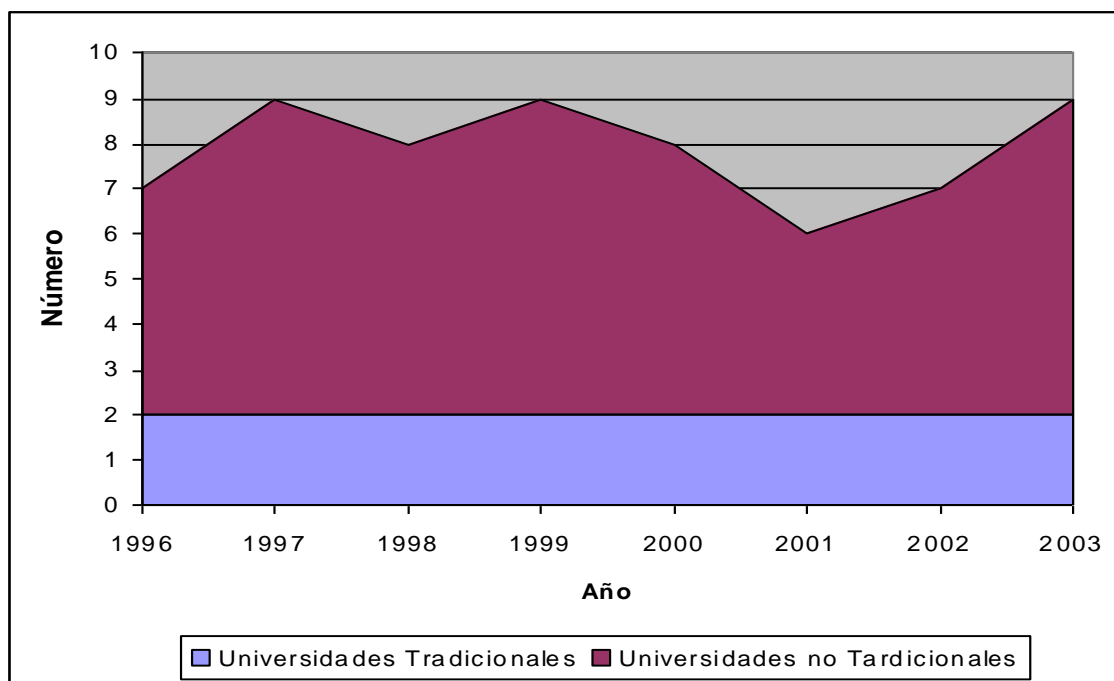
Fuente: Elaborado con información del Consejo de Rectores de Universidades Chilenas.

En primer lugar de acuerdo al Gráfico 4, observamos que existe una tendencia sostenida al alza en cuanto a la matrícula en Psicología. Podemos apreciar también que esta alza la están acaparando las instituciones no tradicionales que han empezado a ofrecer la carrera. La matrícula de las Universidades tradicionales se mantiene constante puesto que sólo existen dos instituciones que imparten esta carrera en la región. Resulta interesante ver cómo el interés por la carrera sigue en alza y como esta alza es absorbida por las

instituciones no tradicionales, Aún así son las instituciones tradicionales las que siguen acaparando los puntajes más altos de ingreso.

En cuanto a la oferta de la Carrera podemos apreciar en el Gráfico 5 que existe una clara tendencia al alza especialmente desde al año 2003 en el que se suman varias instituciones al sector de las Universidades no tradicionales, por ejemplo la Universidad de las Américas y la Universidad Santo Tomás.

Gráfico 5: Número de Universidades que Imparten Psicología en la V Región (Tradicionales-No Tradicionales)



Fuente: Elaborado con información del Consejo de Rectores de Universidades Chilenas.

Se observa, también un declive en la oferta el año 2001, esto se debe al cierre de la Universidad Regional el Libertador (Quillota) y al cambio de la Universidad Educare a Universidad Andrés Bello, en la que se dejó de dictar la Carrera en horario vespertino.

Como hemos mencionado las Universidades tradicionales siguen captando los puntajes de admisión más altos y la carrera sigue representando una alternativa de estudios

viable, al menos en cuanto a interés de los postulantes, pero las preguntas que nos debemos hacer ante esto son: cómo podemos diferenciar una oferta académica de otra, si los requisitos tanto de acreditación como del Colegio de Psicólogos tienden a la homogenización de los programas de estudio, a la generalidad de los contenidos y a las áreas de aplicación tradicionales en Psicología y por cuánto tiempo las Universidades tradicionales seguirán captando los mejores puntajes de admisión, si las instituciones no tradicionales cuentan con más recursos, mejores instalaciones e infraestructura y, por ende, mayor facilidad para emprender programas de investigación.

Las respuestas a estas interrogantes pueden ser difíciles. La mantención de la Psicología como una alternativa de investigación y aplicación viable puede entregar, a nuestro juicio, la respuesta. Ante la creciente oferta en Psicología el campo de aplicación se estrecha y el campo laboral se hace cada vez más complejo; es nuestra opinión que la mejor forma de enfrentar estos problemas es diversificar el campo de enseñanza dentro de los límites impuestos, implementar líneas de investigación a largo plazo que no sólo estén enfocadas a la producción de conocimientos sino al desarrollo de productos y aplicaciones; crear alianzas estratégicas con instituciones extranjeras, pero por sobre todo definir una línea de desarrollo para la carrera que permita a través de un perfil profesional definir y abrir nuevas áreas de estudio.

La siguiente sección de nuestro trabajo expone una extensa revisión de temáticas en Psicología cognitiva, y proponemos no sólo una revisión teórica de reenfoque de asignaturas a temas actualizados, sino que presentamos líneas de investigación que ya están dando resultados en los países estudiados, principalmente Estados Unidos, no sólo en cuanto a la producción de conocimientos, sino en la creación de aplicaciones tanto para el ámbito público como privado.

Estudio de actualización en Ciencia Cognitiva

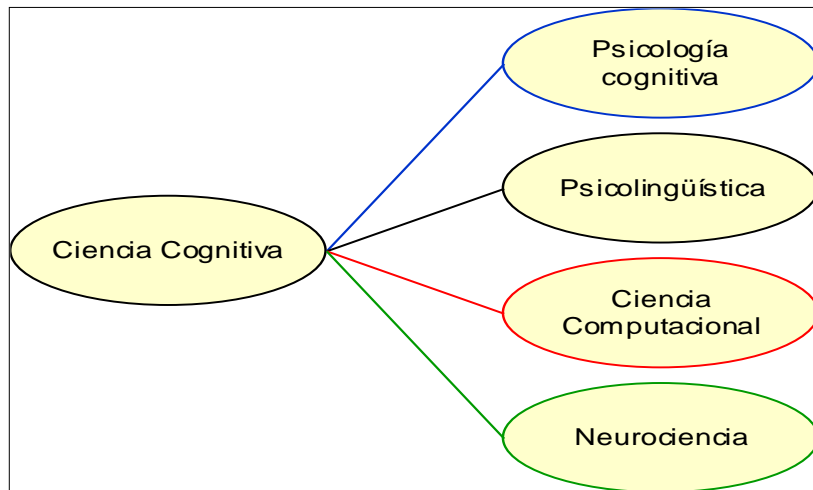
Antecedentes para la investigación

Nuestro estudio de actualización en Ciencia Cognitiva se divide en dos partes principales:

1. Estudio de las asignaturas y temas que se tratan en el pregrado y que están relacionados con Ciencia Cognitiva.
2. Estudio de las investigaciones que son enunciadas en las paginas Web institucionales y que se relacionan con Ciencia Cognitiva.

El estudio sigue las ramas representadas en la Figura 7, en donde se ven afluentes teóricos que contribuyen a la disciplina. Como se ha mencionado en el desarrollo teórico, la Ciencia Cognitiva recibe influencias de la Epistemología, pero por motivos prácticos de análisis hemos decidido incluir estos temas en el área de Psicología Cognitiva, ya que es aquí en donde generalmente se presentan y desarrollan estos contenidos.

Figura 7: Ciencia Cognitiva



Elaboración propia

Este esquema es válido para la inclusión en el estudio de asignaturas e investigaciones, además se utilizó como guía para la inclusión de las instituciones en la presente investigación y su posterior análisis. Los tópicos que se incluyen en cada rama son los siguientes:

1. Psicología cognitiva, incluye:
 - Sensación y percepción.
 - Procesos cognitivos superiores.
 - Psicología cognitiva aplicada y laboratorios.
2. Psicolingüística, incluye:
 - Asignaturas de psicolingüística.
 - Asignaturas de dedicación exclusiva en Psicología del Lenguaje.
3. Ciencia computacional, incluye:
 - Inteligencia artificial.
 - Redes neuronales.
 - Simulación computacional de procesos cognitivos.
 - Trabajos en interfaz humana
 - Diseño y construcción de aplicaciones
 - Aplicaciones computacionales para Psicología.
4. Neurociencia, incluye:
 - Neuropsicología cognitiva.
 - Estudios en fMRI (Imágenes de resonancia magnética funcionales).
 - Asignaturas relacionada con procesos cognitivos y funciones neuronales.

Es importante destacar que desde ahora se utilizará el mismo formato de colores que en la Figura 7 para los esquemas incluidos en el estudio y que será azul para Psicología

cognitiva, negro para Psicolingüística, rojo para Ciencia Computacional y verde para Neurociencia o Neuropsicología cognitiva.

Asignaturas en ciencia cognitiva

Metodología para el estudio en asignaturas

El estudio de temas en Psicología cognitiva se ha realizado en cinco pasos:

1. Revisión de sitios Web de instituciones norteamericanas y españolas (Anexo IV).

Inclusión en el estudio de acuerdo a los siguientes criterios:

- I. Las asignaturas deben ser parte de la enseñanza en pregrado de la carrera de Psicología.
 - II. Los programas de estudio deben contener al menos cuatro ramos relacionados con ciencia cognitiva y sus cuatro ramas.
 - III. Presentación en la página Web institucional de la malla académica y la descripción de las asignaturas.
2. Inclusión de las asignaturas y descripciones en el protocolo de regularización de datos que diseñamos para tal efecto (Anexo VI).
3. Formulación de diagramas de flujo para cada Universidad incluida en el estudio (Anexo VII), definiendo:
- I. Rama de la ciencia cognitiva a la que pertenecen cada una de las asignaturas listadas.
 - II. Si es el caso, relación de prerrequisito entre estas asignaturas.
4. Análisis estadístico descriptivo en la que se detalla:
- I. Dominancia de un área de la ciencia cognitiva en la enseñanza de Psicología sobre otra.
 - II. La importancia relativa de las asignatura prácticas y de los laboratorios en cada una de las áreas de estudio.

5. Formulación de una propuesta de actualización en temas de ciencia cognitiva³:
- I. Esquema final que incluya temas de acuerdo a la importancia relativa señalada en el análisis estadístico
 - II. Temario actualizado para cada una de las ramas propuestas y su descripción.
 - III. Relación con el programa académico actual de la Universidad de Valparaíso, con los criterios de acreditación y del Colegio de Psicólogos, incluyendo las modificaciones para su implementación.

³ Las propuestas se desarrollarán en el apartado Propuesta de actualización en Ciencia cognitiva.

Antecedentes

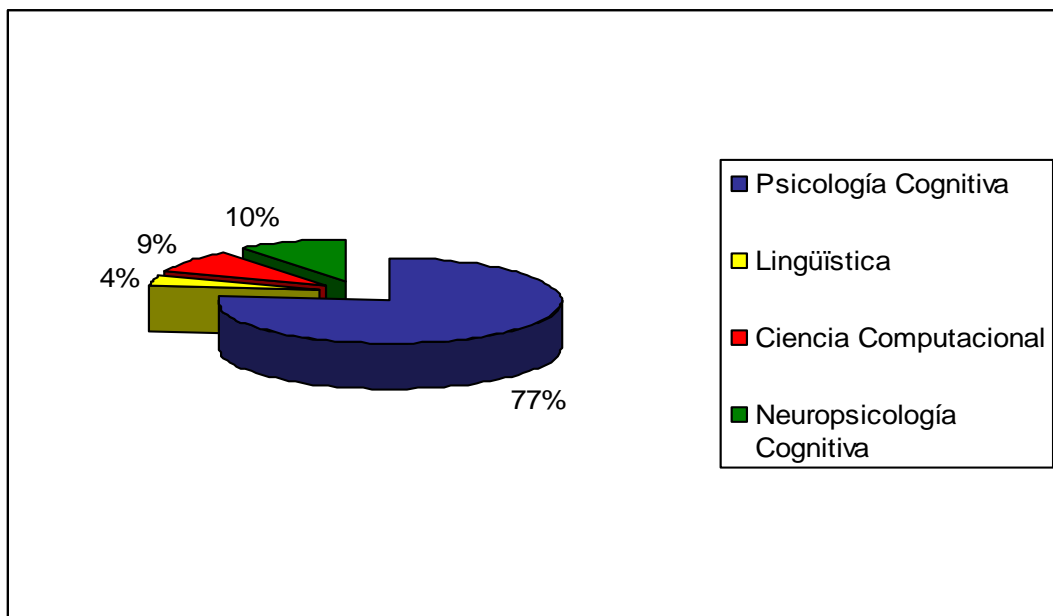
El presente estudio comprende una revisión de sobre 1600 Universidades extranjeras. De acuerdo a los criterios de inclusión ya enunciados, la muestra escogida se reduce significativamente a cuarenta y nueve Universidades, de las cuales 48 corresponden a instituciones norteamericanas y a una institución española (Anexo VI), contando un total de 339 asignaturas dentro del espectro de la Ciencia Cognitiva que hemos definido.

Debemos aclarar en este punto que la recolección de datos se ha realizado de forma sesgada por lo que las asignaturas escogidas corresponden sólo a una fracción de los ramos totales que ofrece cada institución y en un sistema de estudio como el norteamericano la oferta de asignaturas es muy superior a la de otros países, simplemente porque el currículo es variable y es el propio alumno el que va tomando distintos ramos a lo largo de toda su formación dependiendo de sus intereses personales. Vale aclarar también, que el sistema de estudios norteamericano muchas veces carece de prerequisites entre asignaturas que pueden parecer consecutivas, esto se debe en primer lugar a que muchas de estas asignaturas ocurren de forma simultánea, en segundo lugar a que para la mayoría de las asignaturas el prerequisite es uno o dos ramos de formación básica, que no hemos incluido en el estudio y tercero que para muchos de las asignaturas incluidas sólo se requiere la autorización del docente que imparte el curso.

Asignaturas por área en ciencia cognitiva

Como es de esperar, la mayoría de las asignaturas en Ciencia Cognitiva están dedicadas exclusivamente a Psicología Cognitiva, mientras que la Neuropsicología Cognitiva y la Inteligencia Artificial tiene un diez por ciento de la distribución total (Gráfico 6). Podemos apreciar que en las instituciones revisadas la Psicolingüística es el área de desarrollo más pequeña, con un cuatro por ciento de la distribución total esto debido a que generalmente esta área, en las Universidades que la imparten de forma separada, corresponde a una sola asignatura.

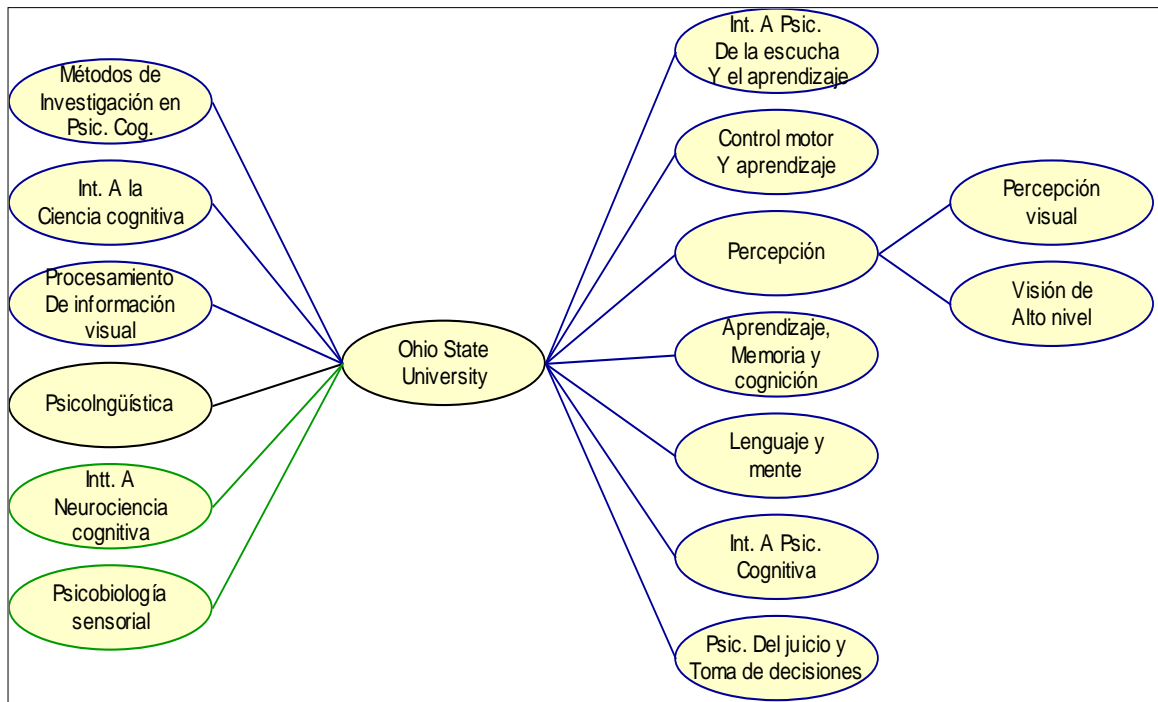
Gráfico 6: Asignaturas de Ciencia Cognitiva por área



Elaboración propia

En cuanto a los temas en Psicología cognitiva, lo primero que se puede apreciar es que la mayoría de las instituciones ofrecen de forma separada procesos cognitivos de sensación y percepción, asignando un ramo exclusivo a cada uno de los temas, incluso separando en ramos distintos procesos superiores, como se puede apreciar en la Universidad estatal de Ohio (Figura 8). La asignatura “Procesos Cognitivos” se define como una asignatura general en la que se introduce a los temas y metodologías de la disciplina, mientras que las particularidades específicas de los procesos se dejan para después. Incluso en algunas instituciones se da una asignatura específica en visión humana, lo que define también sus intereses en investigación en esta área particular.

Figura 8: Universidad Estatal de Ohio



Elaboración propia

Se puede decir en forma general que la mayoría de los ramos en Psicología Cognitiva se enfocan en la Teoría del procesamiento de la información, mientras que las asignaturas dedicadas a ramos específicos basan su desarrollo en el estudio de modelos y su correlación con funciones neurológicas, siendo éste uno de los focos centrales de desarrollo para las investigaciones que revisaremos más adelante.

Psicolingüística

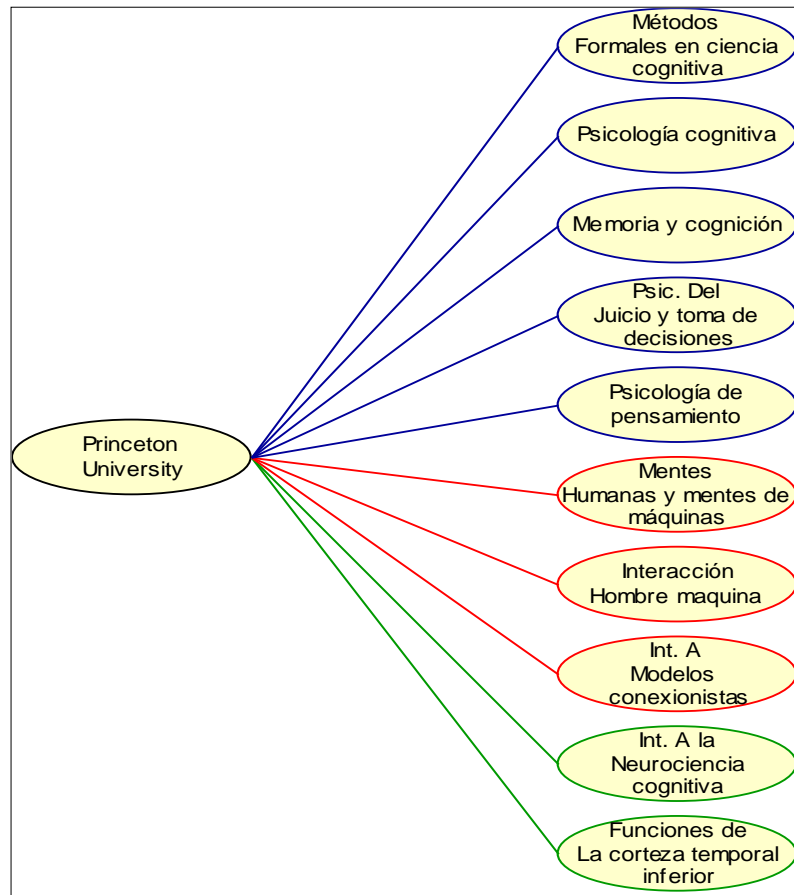
Esta asignatura, por lo visto en el gráfico general, parece poco extendida, pero aún muchas Instituciones separan el estudio del lenguaje de la Psicología cognitiva general, la poca asignación puede deberse a que en la mayoría de los casos es un ramo único en los programas de estudio y no representa un bloque como en el caso de las otras áreas.

Es nuestra opinión que la psicolingüística representa un campo de estudio interesante con la suficiente amplitud y bibliografía para formar un área de estudio particular dentro de la Psicología. Al separar el estudio del lenguaje de la Psicología cognitiva general se pueden reforzar otros contenidos y ampliar el trabajo en áreas de esta última.

Ciencia computacional

El desarrollo de la ciencia computacional en el pregrado de las Universidades analizadas corresponde a un diez por ciento de la distribución total de las asignaturas, por ejemplo al Universidad de Princeton, New Jersey, tiene una extensa formación en temas de ciencia computacional, que van desde una filosofía de la Inteligencia Artificial hasta aplicaciones específicas en el área, todo esto interrelacionado con los temas de Psicología cognitiva general (Figura 9).

Figura 9: Princeton University, New Jersey



Elaboración propia

Según lo observado podemos dividir de forma teórica la formación en ciencia computacional en cuatro áreas:

1. Estudios en Inteligencia Artificial: Corresponde al estudio de la teoría de la Inteligencia Artificial y sus aplicaciones en Psicología.
2. Simulación de procesos: Trabajo de laboratorio en el que se utilizan computadores como medios de experimentación en procesos.
3. Aplicaciones computacionales en Psicología: Este es un campo amplio en el que se estudian los aportes de la informática a la ciencia psicológica a través de aplicaciones en distinto campos como el análisis de datos, creación de aplicaciones etc.

4. Interacción hombre máquina: En Universidades como el Tecnológico de Georgia se desarrolla un enfoque llamado Psicología Ingenieril, que basa su trabajo en el desarrollo y optimización de interfaces de trabajo basadas en las ventajas y limitaciones del sistema cognitivo humano. Este es un campo de estudio que está bastante difundido en las instituciones estudiadas y representa una buena oportunidad para el desarrollo de aplicaciones.

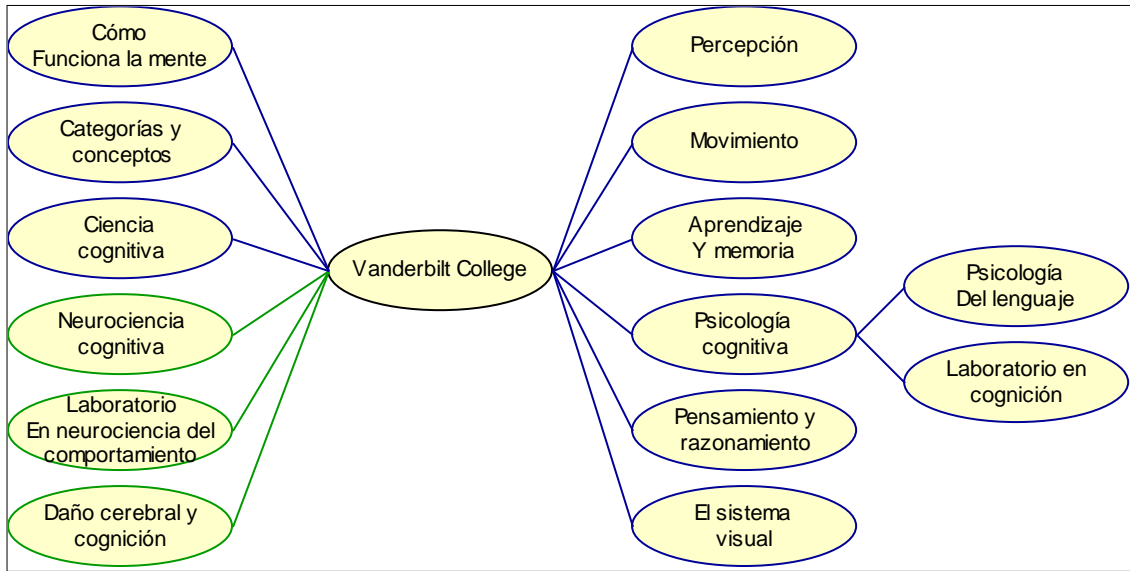
Neuropsicología Cognitiva

Un área muy extendida en los programas de estudio que hemos examinado es la inclusión de Neuropsicología o Neurociencias desde un enfoque cognitivo, por ejemplo la Universidad Vanderbilt de Tennessee (Figura 10), Incluye una amplia gama de estudios que se reflejan no sólo en la formación de pregrado sino que en las líneas de investigación que desarrolla la institución.

La Neurociencia Cognitiva se compone básicamente del estudio de los procesos cognitivos y su correlación con hallazgos neuronales, Se encuentran en esta área por ejemplo, los estudios de envejecimiento, daño cerebral y su relación con pérdida de funciones cognitivas.

Un área muy extendida es el estudio de Imágenes de Resonancia Magnética Funcionales (fMRI) y no sólo representa una parte importante de las investigaciones en esta área, sino que en muchos casos es impartido como una asignatura específica dentro del programa de estudios.

Figura 10: Vanderbilt College, Tennessee

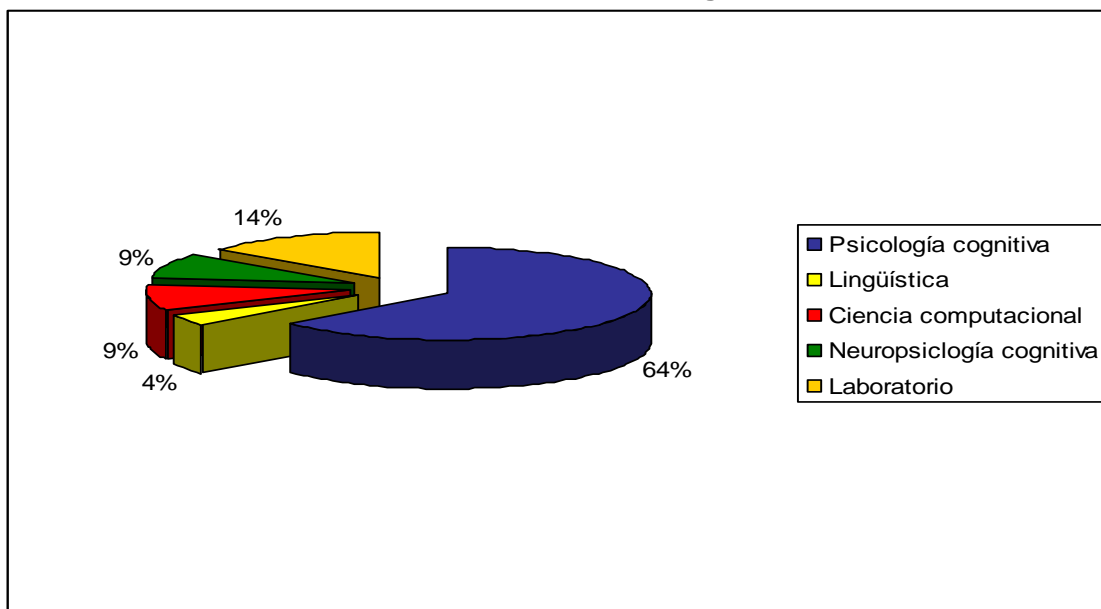


Elaboración propia

Formación práctica en Ciencia Cognitiva

Un último análisis que creemos importante para delinear correctamente la formación en Ciencia Cognitiva es la incidencia de asignaturas prácticas y laboratorios que representan un 14% de la asignación académica analizada (Gráfico 7), correspondiendo la mayoría a laboratorios dedicados a Psicología Cognitiva y en menor grado a Neuropsicología Cognitiva (para un análisis detallado ver Anexo III).

Gráfico 7: Asignación total de asignaturas prácticas y laboratorios en Ciencia Cognitiva



Elaboración propia

La formación en Ciencia Cognitiva tiene un amplio componente práctico que implica el trabajo de los alumnos de pregrado no sólo en experiencias de laboratorio sino que la inclusión en las líneas de investigación que desarrolla la institución. Esta definición de una amplia formación práctica, sobre todo en Psicología Cognitiva busca la instrucción de los alumnos en las metodologías propias de la disciplina y facilitar así su inserción como agentes productores de conocimiento y de aplicaciones.

Investigación por área en Ciencia Cognitiva

Metodología del estudio en líneas de Investigación

El estudio de temas de investigación en Psicología Cognitiva se ha realizado en seis pasos:

1. Revisión de sitios Web de instituciones norteamericanas y españolas (Anexo IV).
Inclusión en el estudio de acuerdo al siguiente criterio:
 - Presentación en la pagina Web de la línea de investigación y la descripción de ésta.
2. Inclusión de las investigaciones y descripciones en el protocolo de normalización que diseñamos par tal efecto (Anexo VIII).
3. Formulación de diagramas de flujo para cada Universidad incluida en el estudio, definiendo la rama de la Ciencia Cognitiva a la que pertenecen cada una de las investigaciones listadas (Anexo IX).
4. Análisis estadístico descriptivo en la que se detalla la dominancia de un área de la Ciencia Cognitiva sobre otra.
5. Formulación de una propuesta de actualización en temas de ciencia cognitiva que contenga un esquema que incluya temas de investigación de acuerdo a la importancia relativa señalada en el análisis estadístico⁴.
6. Definición de la factibilidad e las líneas de investigación de acuerdo a:
 - a. Factibilidad económica de la investigación.
 - b. Posibilidad de entablar alianzas estratégicas y trabajo multidisciplinario.
 - c. Viabilidad de producir no sólo conocimiento sino productos.

⁴ Las propuestas se desarrollarán en el apartado Propuesta de actualización en Ciencia Cognitiva.

Antecedentes

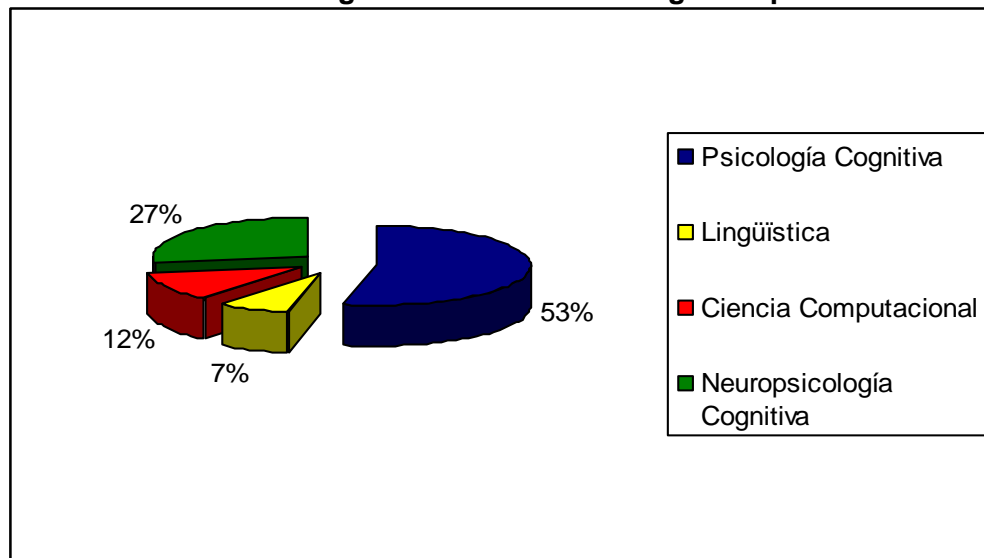
Como ya se ha dicho el presente estudio comprende una revisión de aproximadamente sobre 1600 Universidades extranjeras, de acuerdo a los criterios de inclusión ya enunciados. La muestra escogida se reduce significativamente a veintidós universidades, de las cuales veintiuna corresponden a instituciones norteamericanas y a una institución española (Anexo VIII), contando un total de 163 investigaciones dentro del espectro de la Ciencia Cognitiva que hemos definido.

Debemos aclarar que nuestra muestra es sesgada y corresponde, en algunos casos, a una fracción de las investigaciones listadas por las instituciones. Existen en el espectro definido muchas investigaciones que se cruzan con otros departamentos dentro de la misma Universidad y hemos, en lo posible, definido esa características en los casos que corresponda. Para una descripción detallada de las investigaciones referirse al Anexo VIII o a la pagina Web de la institución señalada en las referencias bibliográficas.

Investigación por área en Ciencia Cognitiva

El área de mayor desarrollo en las investigaciones es la de Psicología Cognitiva con un 53% de la distribución total, seguido por Neuropsicología Cognitiva con un 26 % (Gráfico 8). Estos son los focos de investigación principales, dejando muy atrás las otras dos líneas, de las cuales Psicolingüística es la menor con un 7% de las investigaciones totales, esto debido principalmente a que muy pocas Instituciones presentan investigaciones en esta área y las que lo realizan lo hacen como líneas aisladas, excepto la Universidad de Irvine, California, que tiene toda una rama dedicada a este tema.

Gráfico 8: Investigaciones en Ciencia Cognitiva por área



Elaboración propia

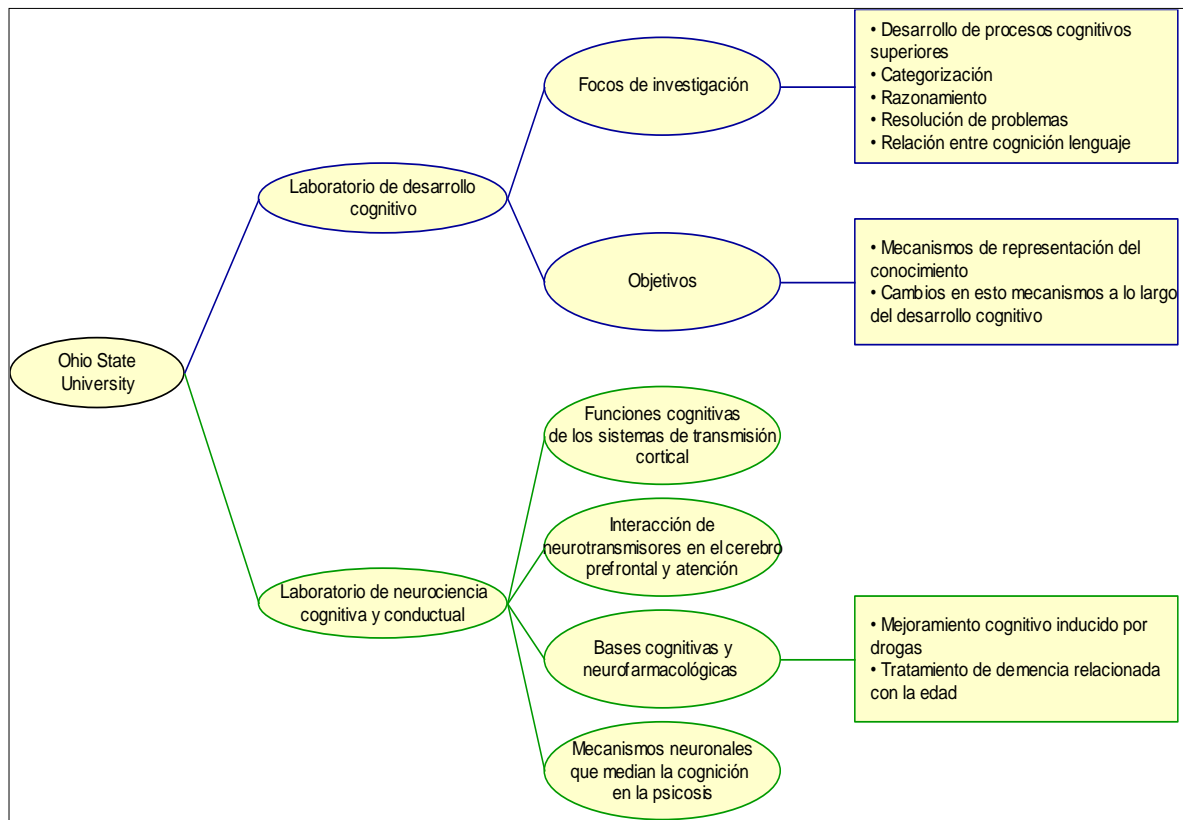
Investigaciones en Psicología Cognitiva

La investigación en Psicología cognitiva representa la mayoría de los recursos asignados por las instituciones estudiadas y abarca una amplia gama de tópicos y modalidades, desde laboratorios de dedicación exclusiva hasta intereses personales de

docentes dedicados al tema. Utilizamos como ejemplo la Universidad estatal de Ohio (Figura 11), ya que es la misma Institución referida dentro del apartado anterior dedicado a asignaturas y esto demuestra la correlación entre horas asignadas y líneas de investigación enunciadas.

La Universidad Estatal de Ohio además de mostrar la coherencia antes mencionada, es un ejemplo interesante puesto que mantiene dos centros de investigación complementarios que son el “Laboratorio de desarrollo cognitivo” y el “Laboratorio de neurociencia cognitiva conductual”. Ambos centros de investigación además producen aplicaciones en ámbitos multidisciplinarios y sirven para la formación tanto de pregrado como de postgrado en Psicología. Específicamente en el área de Psicología Cognitiva el laboratorio muestra una amplia gama de intereses, todos relacionados con procesos cognitivos superiores.

Figura 11: Ohio State University



Elaboración propia

En general las investigaciones en Psicología Cognitiva abarcan todos los ámbitos de esta, desde la Psicología de la sensación y percepción hasta los procesos superiores. Investigaciones en mejoramiento de habilidades cognitivas en niños, estudios de pérdida de funciones por patologías o edad y programas terapéuticos para desordenes específicos, etc.

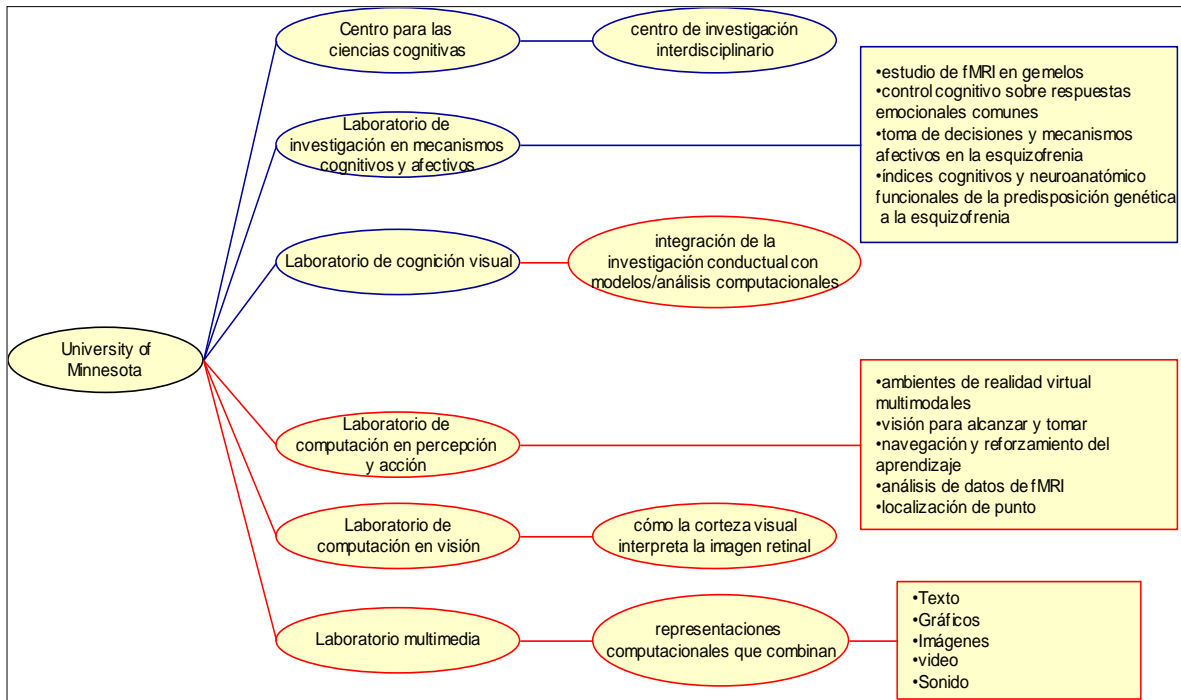
Psicolingüística

Como mencionamos anteriormente los estudios en Psicolingüística no están muy difundidos y su más amplio desarrollo se da en la Universidad de Irvine, California (Anexo IX). En general las investigaciones se centran en adquisición de lenguaje, patología relacionadas con pérdida de habilidades lingüísticas, relación de lenguaje y desarrollo de procesos cognitivos superiores y un área de especial interés que es la función y estructura de lenguajes formales y sistemas computacionales.

Ciencia computacional

La investigación en Ciencia Computacional ligada a Psicología, aunque no representa un gran porcentaje de la investigación total, sí muestra polos definidos de alto interés, puesto que la implementación de un laboratorio básico de este tipo es fácil y las aplicaciones surgidas de éste pueden ser difundidas y aplicadas rápidamente. La Universidad de Minnesota, presenta múltiples talleres de este tipo (Figura 12) y muestra una amplia gama de aplicaciones, que si bien no es una revisión exhaustiva da un buen panorama de lo que busca la investigación en esta área.

Figura 12: University of Minnesota



Elaboración propia

La Universidad de Minnesota muestra una parte del trabajo que se puede realizar en esta área, dos laboratorios dedicados a simulación en computadoras de percepción, un laboratorio cognitivo que utiliza modelos computacionales de análisis de datos y un laboratorio de desarrollo de herramientas multimedia. En relación con la simulación por computadoras, David Noel, profesor de la Universidad Vanderbilt, Tennessee (Anexo IX), presenta una investigación muy interesante cuyo objetivo es crear un puente metodológico entre los modelos cognitivos y los hallazgos neuronales a través de la implementación de éstos en simulaciones computacionales.

Otros focos de investigación importantes que hemos identificado son el trabajo de la Universidad de Utah en simulación y ambientes de realidad virtual como forma de mejorar el desempeño en tareas específicas y de alta exigencia como la conducción, el trabajo en el Tecnológico de Georgia con interfaz humana y el mejoramiento del desempeño en tareas específicas y productividad y finalmente trabajos altamente

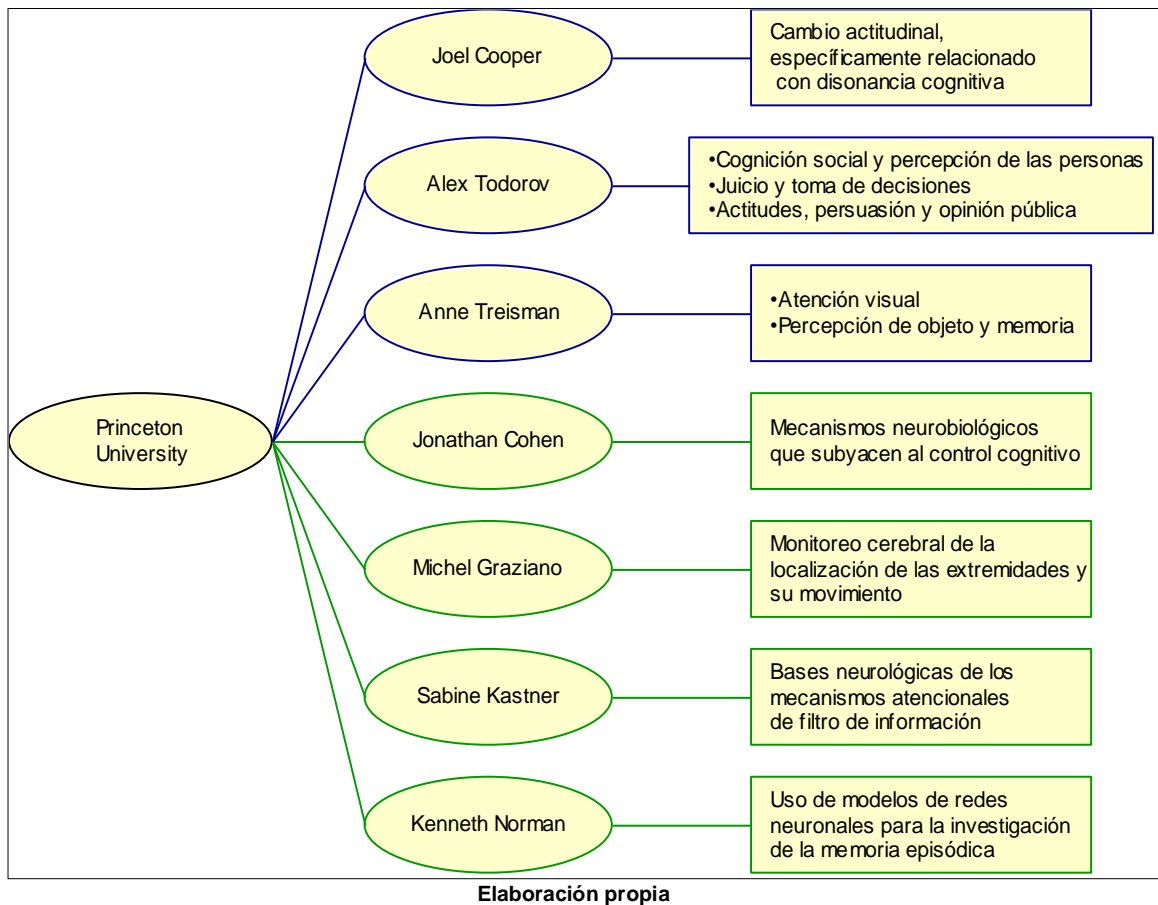
difundidos como habilidades de navegación en Internet, diseño de tutores virtuales y herramientas generales para el desarrollo de habilidades específicas.

Neuropsicología Cognitiva

Las investigaciones en Neuropsicología Cognitiva concentran un 27% de las investigaciones totales en Ciencia Cognitiva y es la segunda área en importancia en el espectro que hemos definido. La importancia relativa de esta área puede deberse a que representa un campo muy amplio tanto para la investigación como para la aplicación. La inclusión de nuevas tecnologías de análisis posibilitan la formulación y refinamiento de teorías, mientras se formulan tratamientos y aplicaciones desde un enfoque multidisciplinario.

Presentamos en este caso las investigaciones enunciadas por la Universidad de Princeton, New Jersey (Figura 13), que si bien no es la institución que presenta más estudios en esta área, creemos que es una muestra interesante y lo bastante amplia como para entregar una visión general del desarrollo de este tema. Además esta Universidad representa una característica que observamos en otras instituciones y quisiéramos resaltar: las líneas de estudio están ligadas a académicos y aparecen presentadas como investigaciones particulares de cada uno de ellos, algunos de los cuales imparten clases en el pregrado incorporando esta investigación en el desarrollo de su cátedra, pero hay otro sector del profesorado específicamente dedicado a la investigación, lo que demuestra un claro compromiso de las instituciones con sus líneas de desarrollo.

Figura 13: Princeton University, New Jersey



En general podemos apreciar que los estudios en Neuropsicología Cognitiva tienen carácter multidisciplinario, puesto que como hemos mencionado y como se aprecia en la Figura 13, se busca la correlación de los hallazgos fisiológicos y procesos cognitivos, por ejemplo las bases fisiológicas de los procesos atencionales o la relación entre daño cerebral y pérdida de funciones. Este tipo de investigaciones responden a un esfuerzo conjunto de la institución en la que se reúnen equipos de trabajo que incluyen neurocientíficos, médicos y psicólogos, utilizando dependencias múltiples y equipamiento avanzado para llevar a cabo los análisis requeridos y la posterior elaboración y prueba de líneas terapéuticas y productos.

Consideraciones al análisis de investigación en Ciencia Cognitiva

Para finalizar nuestro análisis de las investigaciones en Ciencia cognitiva quisiéramos precisar que las investigaciones mencionadas son una parte de los temas totales los que se detallan en el Anexo VIII. Hemos seleccionado Universidades como ejemplo y mencionado las investigaciones utilizando el criterio de representatividad, pues son estos los temas que más se repiten y muestran, en algunos casos, áreas novedosas de desarrollo reciente que podrían representar avances en nuestra concepción de la Psicología.

Quisiéramos además reforzar dos ideas que pensamos son centrales en el desarrollo de las líneas de investigación que hemos expuesto. En primer lugar el carácter aplicado de la investigación, en la que no sólo se busca el conocimiento como fin, sino que trae unida una aplicación pragmática; por lo que hemos estudiado la consecuencia de la investigación es la aplicación como forma de retroalimentación (*modus tollens*) y de mantención del mismo estudio. En segundo lugar, quisiéramos resaltar la importancia de la relación entre el desarrollo de un pregrado coherente con las líneas de investigación que asume la institución como tal o que se les exige particularmente a los académicos. Desde este punto de vista es imposible la enseñanza separada de la investigación y la búsqueda de nuevos conocimientos, haciendo partícipes a los alumnos de este desarrollo y, por lo tanto, complementando su formación.

Propuesta de actualización en Ciencia Cognitiva

Sobre el pregrado en Psicología de la Universidad de Valparaíso

Debemos mencionar que los datos recabados del pregrado en Psicología están actualizados al año 2004 y corresponden a información de libre acceso e información publicados en el sitio Web oficial de la Universidad.

Del pregrado en Psicología en la Universidad de Valparaíso podemos decir que presenta una distribución comparable al de otras Universidades analizadas anteriormente, no muestra una línea teórica-práctica determinada y cumple en forma general con los criterios de acreditación enunciados anteriormente. Es por esto que no creemos necesario hacer un análisis acabado de la distribución de ramos por área en la carrera, simplemente puntualizar que la duración de ésta es de diez semestres, lo que también se encuentra dentro del promedio general de las demás instituciones dentro del estudio.

Queremos hacer énfasis en dos aspectos específicos:

1. Como hemos mencionado la Carrera de Psicología de la Universidad de Valparaíso carece de una línea teórica central que organice los contenidos en el desarrollo del pregrado, en esto se une a la tendencia general de las demás Universidades y a los requerimientos generales de acreditación. Esto tiene el efecto de que su oferta educacional no se diferencia entre las demás. La falta de una definición teórica impide la coherencia entre el pregrado y la investigación que lleva a cabo la institución, pero a esto nos referiremos en el siguiente punto.
2. La carrera de Psicología de la Universidad de Valparaíso no muestra en su sitio Web ninguna línea de investigación en desarrollo actualmente, lo que a nuestro juicio representa una carencia importante en al menos dos áreas; en primer lugar desde el aspecto publicitario la carencia de investigación pone a la institución en

desventaja frente a otras que si tienen líneas de estudio definidas, tanto en la captación de potenciales estudiantes como en la posibilidad de efectuar vínculos con Universidades extranjeras. En segundo lugar la poca productividad de conocimiento, herramientas y servicios posiciona pobremente a la institución tanto en el ámbito académico como en el escenario regional y nacional.

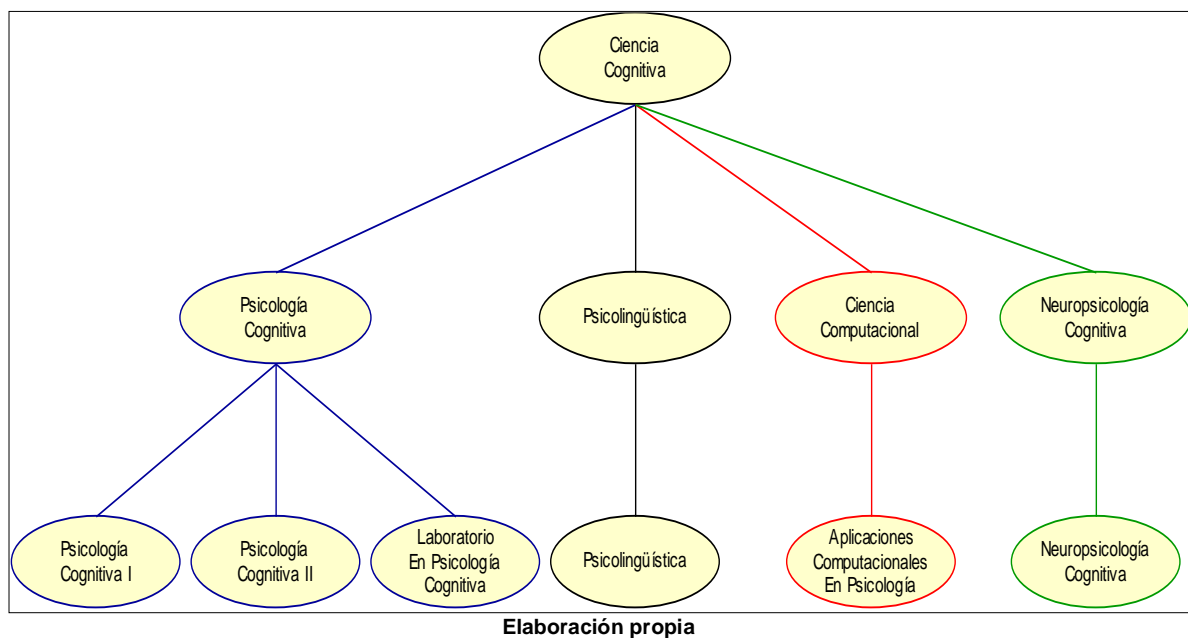
Propuesta temática en Ciencia Cognitiva

Nuestra propuesta temática en Psicología se rige por dos directrices:

1. Hemos tomado en cuenta el porcentaje promedio real obtenido de nuestro estudio.
2. Hemos adecuado estas cifras para que sean aplicables de acuerdo a:
 - a. Las restricciones horarias y temáticas de la Universidad de Valparaíso.
 - b. Las restricciones horarias y temáticas de las demás instituciones que forman parte de nuestro estudio nacional.
 - c. Los criterios de acreditación y del Colegio de Psicólogos.

Como conclusión creemos que la distribución ideal de asignaturas en Ciencia Cognitiva es la que se presenta en la Figura 14, la cual es una organización conservadora comparada con los promedios reales obtenidos.

Figura 14: Distribución temática propuesta en Ciencia Cognitiva



Cada uno de los puntos determinados en la Figura 14 representa un área y las asignaturas correspondientes, Se puede apreciar que Psicología Cognitiva corresponde a tres asignaturas mientras que el promedio arrojado en nuestro estudio es de seis. Es en esta área en donde se aprecia la mayor disparidad, puesto que en los casos restantes la correspondencia es casi perfecta, la reducción se llevó a cabo por motivos prácticos de inclusión en el programa de estudios.

Ahora analizaremos cada área y las definiciones de las asignaturas propuestas incluyéndolas en el contexto de la Universidad de Valparaíso.

1. Psicología Cognitiva: Como hemos revisado a lo largo de nuestra investigación y en nuestro análisis teórico, la Psicología cognitiva representa un área importante del desarrollo de la Psicología como ciencia del comportamiento y es una constante presente en la mayoría de los programas de estudio que hemos revisado, incluso en aquellos que, por una razón u otra, no hemos incorporado por no cumplir con los criterios de extensión en formación cognitiva. Es un hecho que esta área de conocimiento debe ser parte de la formación de todo Psicólogo, y es por eso que nuestra propuesta la incluye con una relevancia, tal vez mayor, acusada por la extensión de la carga horaria. Pero su relevancia no sólo está dada por su historia y su desarrollo como un área de estudio y aplicación tradicional en Psicología, sino precisamente porque es un área de estudio y desarrollo actual en la que se puede apreciar un avance sostenido y la aparición constante de nuevas líneas de investigación del que esperamos dar cuenta con el presente trabajo. Nuestra propuesta en esta área no difiere demasiado de lo que ya se lleva a cabo, tal vez busca la precisión de ciertos temas y la extensión de otros valiéndose en parte de cambios profundos propuestos en las áreas de la Ciencia Cognitiva que revisaremos posteriormente. Efectivamente al extender áreas de estudio y quitar

ciertos temas se puede reenfozar el estudio de la Psicología Cognitiva, hacia temas más específicos y áreas más aplicadas del desarrollo de la disciplina.

- I. Psicología Cognitiva I: Creemos que el foco de esta asignatura deberían ser los procesos de atención, sensación y percepción.
 - II. Psicología Cognitiva II: Al asignar sensación y percepción a un estudio exclusivo de un semestre y asignando lenguaje a una asignatura particular se puede dedicar el segundo semestre exclusivamente a procesos superiores, aprendizaje, pensamiento, memoria, toma de decisiones, etc.
 - III. Laboratorio de Psicología Cognitiva: Esta asignatura debería estar encargada de dos temas específicos:
 - Introducción a la metodología particular de la Psicología Cognitiva, incluyendo investigaciones específicas y actualizadas en el tema.
 - Actividades prácticas de aplicación focalizada que le permitan al alumno iniciar el desarrollo habilidades investigativas en el tema.
2. Psicolingüística: La inclusión de una asignatura de dedicación exclusiva en temas de lenguaje permite, como ya hemos mencionado, la apertura a otros temas en asignaturas tradicionales en la formación de pregrado. Además es nuestra opinión que el lenguaje tiene un cuerpo de estudio abundante y una bibliografía propia lo bastante extensa como para formar una asignatura particular. Una asignatura de este tipo debería tratar:
- Comprensión de lenguaje
 - Producción del habla
 - Adquisición de lenguaje
 - Bases fisiológicas del lenguaje y patologías relacionadas

3. Ciencia computacional: La ciencia computacional presenta un desarrollo constante y es un campo de estudio en expansión, En nuestro marco teórico hemos aclarado la importancia que ha tenido la ciencia computacional en el desarrollo de teorías al interior de la Psicología. A lo largo de nuestra revisión hemos encontrado muchos temas de gran interés desde asignaturas dedicadas a la Inteligencia Artificial hasta requerimientos de lenguajes de programación básicos en instituciones como la Universidad Carnegie Mellon. Es nuestra opinión que si bien estas áreas representan avances importantes y son áreas de estudio muy interesantes es poco práctico tratar de insertar temas tan específicos en el desarrollo de pregrado si no es a través de una línea de estudio completa. Nuestra propuesta en esta área, por lo tanto, corresponde a Aplicaciones Computacionales en Psicología, una asignatura bastante extendida en los programas de estudio que hemos revisado.

Aplicaciones computacionales en Psicología debería abarcar:

- Estudio de software diseñado para aplicaciones psicológicas en el ámbito de la aplicación y del análisis de datos.
- Exploraciones en interfaz hombre máquina.
- Ergonomía y factor humano.
- Capacitación asistida por computador.
- Simulación de procesos neuro-cognitivos.

4. Neuropsicología Cognitiva: En este caso también la propuesta, más que una asignatura nueva, busca un reenfoque de las temáticas desarrolladas. Es claro que la neuropsicología cognitiva es un campo en pleno desarrollo y de gran avance reciente por lo que creemos debe ser tomada en cuenta como un área de importante desarrollo potencial. En el pregrado nacional ya se ha incluido este tema como asignatura independiente; por ejemplo, la Pontificia Universidad

Católica de Santiago la imparte como tema independiente, constituyendo un antecedente importante para nuestra propuesta. Una asignatura en esta área debería tratar:

- Las bases neurofisiológicas de los procesos cognitivos y afectivos.
- Pérdida de funciones.
- Patología y su efecto en procesos cognitivos.

Consideraciones a la propuesta temática en Ciencia Cognitiva

Si bien hasta ahora sólo hemos descrito las asignaturas quisiéramos proponer la forma de insertarlas dentro del programa de estudios de la Escuela de Psicología de la Universidad de Valparaíso. Las asignaturas comprendidas en Psicología Cognitiva y Neuropsicología ya existen. Por lo que, de acuerdo a nuestra descripción, sólo sería necesario un reenfoque de ciertas temáticas. Son las asignaturas de Psicolingüística y Aplicaciones computacionales en Psicología las que requieren ser insertadas dentro del programa de estudio. Para estos casos específicos nuestra propuesta es:

1. Psicolingüística: Para esta asignatura en particular nuestra propuesta es reducir el ciclo de Psicología de la Comunicación a una asignatura semestral y reemplazar la restante por temas directamente relacionados con lenguaje:

- Objetivos:

- ❖ Conocer la relevancia del lenguaje en la configuración de la mente
- ❖ Conocer los mecanismos y procesos involucrados en la producción del lenguaje
- ❖ Comprender la relación entre lenguaje y pensamiento
- ❖ Conocer las patologías lingüísticas

- Contenidos:

- ❖ Bases biológicas del lenguaje
- ❖ Percepción del habla
- ❖ Adquisición del lenguaje
- ❖ Producción del lenguaje
- ❖ Lectura y escritura

2. Aplicaciones computacionales en Psicología: Nuestra propuesta en esta caso es un poco más compleja, requiere dos cambios:

- a. En primer lugar es nuestra opinión que las asignaturas de Sociología y Antropología dictados durante el primer semestre se pueden fundir en un ramo único Bases Socio – Antropológicas dictado durante el primer semestre, causando un impacto mínimo en la configuración del programa de estudio y liberando así el espacio necesario para la inserción de Aplicaciones Computacionales en Psicología. Cabe mencionar que este cambio no afectaría los requisitos de acreditación.
- b. Es nuestra opinión que para aprovechar de mejor forma las características de esta asignatura, ella no puede ser dictada durante el segundo semestre de la carrera, que es el espacio que queda libre en la fusión antes mencionada. Nuestra propuesta es mover Psicología de la Personalidad al primer semestre ya que es un ramo de Psicología básica y así usar este espacio libre en el quinto semestre para esta asignatura en particular.

En cuanto a la estructuración de la asignatura proponemos:

- Objetivos:
 - ❖ Conocer la relación entre Psicología y Ciencia Computacional
 - ❖ Estudiar aplicaciones computacionales relevantes en el ámbito de la Psicología aplicada
 - ❖ Estudiar áreas de aplicación y desarrollo innovadoras en el ámbito de la Psicología
- Contenidos:
 - ❖ Introducción a la Ciencia Computacional
 - ❖ Aplicaciones computacionales en Psicología:
 - i. Medición

- ii. Educación
- ❖ Áreas de desarrollo:
 - i. Factor humano y ergonomía
 - ii. Simulación de procesos cognitivos

Sólo nos queda por decir que el cambio propuesto no altera demasiado la actual configuración del programa de estudio, tampoco abre una brecha demasiado grande con otras instituciones que imparten pregrado de Psicología en Chile y sobre todo conserva intactos los criterios de acreditación en relación a temas a tratar en pregrado, por lo cual opinamos es una propuesta ajustada a la realidad de la enseñanza en Psicología.

Lo que significa este cambio se puede definir como la delineación de una tendencia a organizar el pregrado en torno a una guía que ayude a dar coherencia a los contenidos tratados y, por ende, a las líneas de investigación que se propondrán en el siguiente apartado. La idea general es dar una identidad que diferencie a la institución de otras que imparten pregrado en Chile. Con estos cambios mínimos podemos sentar las bases para líneas de investigación coherentes e iniciar contactos con las Instituciones extranjeras que están actualmente desarrollando estos temas, que no son otras que las definidas en este estudio.

Propuestas de investigación en Ciencia Cognitiva

Nuestra propuesta de líneas de investigación en Ciencia Cognitiva se rige por los siguientes puntos:

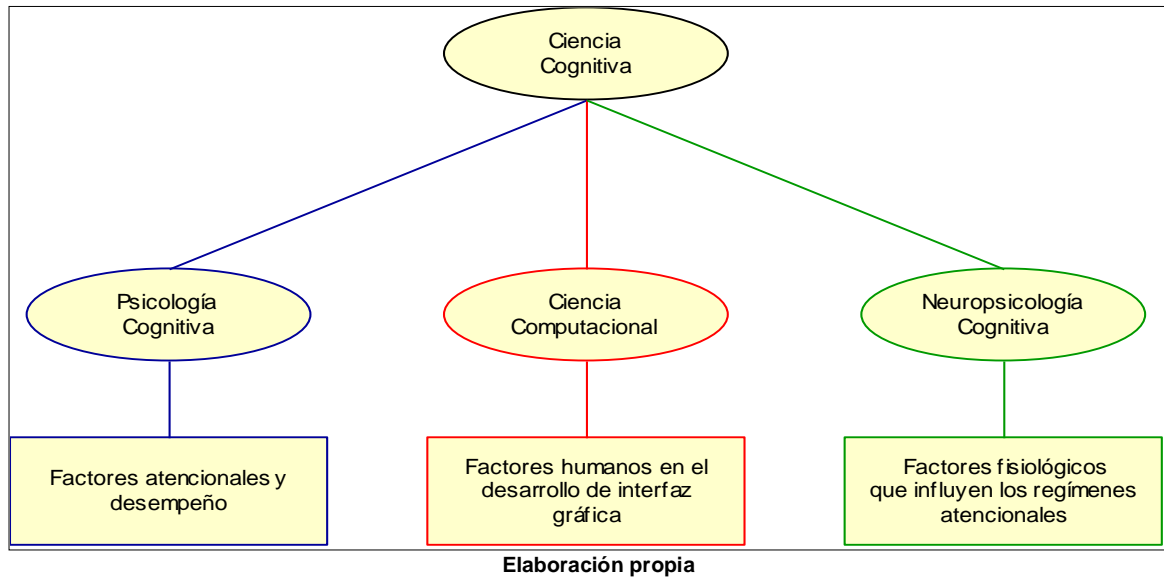
1. Importancia relativa del área de estudio determinada por el porcentaje de asignación total resultante del estudio que ya hemos expuesto.
2. Factibilidad económica de la propuesta.
3. Posibilidad de derivar aplicaciones prácticas de las investigaciones.
4. Posibilidad de entablar vínculos estratégicos ya sea al interior de la Universidad como con instituciones externas.

Nuestras propuestas de líneas de investigación pueden apreciarse en la Figura 15. Hemos decidido reducir el número a una investigación por área simplemente por motivos prácticos de implementación, además de esta forma podemos demostrar mejor la implementación de una línea complementaria en tres áreas, cada una enfocando el mismo problema desde una perspectiva distinta y cada una aportando información valiosa para el desarrollo de la otra; esto siempre buscando coherencia entre la enseñanza en pregrado y las investigaciones desarrolladas y de éstas entre sí.

Como se aprecia en la Figura 15 nuestra propuesta de investigación sigue un mismo hilo conductor que es el estudio en factores humanos. Esta es un área de creciente desarrollo y representa un sector de gran interés ampliamente difundido en las instituciones que hemos estudiado. Esta línea de estudio trata de los factores internos y externos que afectan el desempeño en situaciones específicas y la forma de optimizar estos recursos para obtener mejoras. Creemos que es un línea de estudio fácil de implementar, con el potencial de producir aplicaciones en corto plazo y lo suficientemente amplia como para abarcar distintos tipos de áreas, esto la hace ideal para ser el punto de

partida desde el cual empezar y a través del cual expandirse a otras líneas de investigación más complejas y por ende de mayor coste económico.

Figura 15: Distribución de investigaciones propuestas en Ciencia Cognitiva



1. Psicología Cognitiva: en esta área hemos definido como línea de investigación los factores atencionales que afectan el desempeño. Lo definimos de forma general puesto que el objeto específico deberá definirse de acuerdo al producto que se quiera desarrollar, por ejemplo navegación en Internet. Si nuestro objetivo es crear sitios Web efectivos que faciliten la navegación o herramientas específicas para el desarrollo de habilidades, debemos estudiar los factores personales que afectan el desarrollo de estas, ya sea tiempo de exposición efectivo o limitaciones relacionadas con fases del desarrollo, etc. Desde nuestro esquema de organización que expusimos al principio de esta sección una investigación de este tipo califica ya que:
 - Como ya hemos mencionado esta es un área bastante extendida entre las investigaciones que hemos revisado, por lo tanto representa un punto de partida bien documentado y con antecedentes claros.

- Las características propias de la investigación la hacen muy atractiva desde el punto de vista económico, porque dependiendo del objetivo específico que se quiera estudiar la implementación va desde básica a casi nula, sólo se necesitarían instalaciones básicas para conducir experimentos controlados y medios de análisis de datos.
- Las aplicaciones en esta área son simples, Una vez determinados los factores se diseña una capacitación específica para el área, por ejemplo, un taller en diseño de sitios Web.
- El trabajo en esta área ofrece la posibilidad de crear vínculos estratégicos directos con el sector público y privado. Los estudios en ergonomía están muy difundidos en este momento, la idea es buscar un objetivo y crear la investigación para ese objetivo particular.

2. Ciencia Computacional: En esta área hemos definido como línea de investigación los factores humanos en el desarrollo de interfaz gráfica. Esta línea un poco más precisa nos permite determinar y encausar los esfuerzos de la investigación en Psicología cognitiva a un objetivo determinado. El diseño de interfaces cada vez más efectivas y que respeten el funcionamiento del aparato cognitivo es un tema ampliamente desarrollado, podemos completar estos estudios creando productos específicos para un público objetivo determinado dentro de nuestra realidad nacional.

- Efectivamente el trabajo en interfaz es una oportunidad muy interesante de desarrollo de la disciplina, con lo cual se puede abrir toda una nueva área de desarrollo que también está ampliamente documentada.
- La implementación de una línea de investigación en esta área resulta conveniente desde el punto de vista económico ya que basados en los hallazgos de Psicología Cognitiva sólo se requieren computadores para

diseñar y probar las herramientas creadas. La licencia del software específico de diseño puede que ya este disponible en la carrera de Diseño Gráfico de la Universidad, y si no lo está, se puede conseguir a bajo costo a través de convenios por ser una institución educativa.

- La producción de aplicaciones es el centro de la línea de estudio. En este caso se puede crear toda una gama de aplicaciones para cada público objetivo.
- La posibilidad de establecer una alianza estratégica viene inmediatamente. Crear grupos de trabajo interdisciplinarios con la carrera de Diseño Gráfico de la propia Universidad es una oportunidad excelente y beneficiosa para ambas partes.

3. Neuropsicología Cognitiva: Los factores fisiológicos que influyen en la atención representan tal vez nuestra propuesta a más largo plazo, puesto que requieren una mayor implementación y un trabajo multidisciplinario más complejo. De todas formas representan un área interesantísima que podría aportar una gran cantidad de información valiosa para el desarrollo de las investigaciones que hemos descrito anteriormente.

- Los estudios de correlatos fisiológicos de procesos cognitivos representan una gran parte de las investigaciones que hemos estudiado, y como hemos mencionado son parte de planes estratégicos de desarrollo a largo plazo de instituciones completas.
- La implementación de una línea de investigación de este tipo puede ser costosa, básicamente por el equipamiento de medición y por el costo de aplicación de cada prueba individual, pero nuevamente esta es una oportunidad de crear una alianza estratégica al interior de la Universidad, ya sea con la Facultad de Ciencias o con la Escuela de Medicina.

- La producción de aplicaciones dependerá directamente de los hallazgos en esta área. Se pueden crear estrategias terapéuticas conjuntas o complementar las investigaciones en las áreas antes mencionadas.
- Como hemos mencionado la vinculación en esta área es parte esencial de la investigación, la formación de un equipo multidisciplinario es esencial para lograr resultados en esta área.

Consideraciones a las propuestas de Investigación en Ciencia Cognitiva

Para finalizar quisiéramos poner en relieve la relación entre las asignaturas que forman la primera parte de nuestra propuesta y las investigaciones que acabamos de describir. Creemos que lo más importante en el desarrollo del pregrado es la coherencia, unos pequeños cambios en el plan de estudio y el desarrollo de líneas de investigación en el mismo sentido.

Las investigaciones escogidas se caracterizan básicamente por su simplicidad y fácil implementación, pero en mayor medida por la posibilidad de derivar aplicaciones. Es nuestra opinión que toda investigación tiene dos polos, el primero es el desarrollo de conocimiento, el segundo la producción y es este elemento el que quisiéramos poner en relieve al terminar nuestro análisis. La posibilidad de contribuir positivamente a la comunidad mientras abrimos campos de aplicación novedosos y poco explorados en nuestro medio. Creemos que esta es la clave en un mercado creciente como el de la Psicología, la apertura de estos campos tanto en la investigación como en la aplicación.

Propuesta de Laboratorio

Nuestra propuesta de líneas de investigación presupone el desarrollo paralelo de una infraestructura específica que permita la aplicación de estos cambios, es decir un laboratorio que aúne las necesidades académicas e investigativas de las Ciencias Cognitivas.

Este laboratorio que si bien en principio responde básicamente a esta nueva configuración curricular y las líneas de investigación definidas, tiene por objetivo más general estar vinculado a su uso extensivo por parte de la carrera en general y no solo de la línea cognitiva. Es por esto que la propuestas de laboratorio que presentamos a continuación consta de dos secciones: en primer lugar, una propuesta de implementación general que parte de la base de una encuesta de necesidades de la escuela, y en segundo una sección más específica en la que definimos la coherencia temporal de la implementación con el desarrollo de las líneas de investigación propuestas y las necesidades específicas para estas.

Antecedentes generales

En cuanto al desarrollo de un laboratorio general para la carrera de Psicología la implementación tendría al menos seis etapas definidas:

1. Análisis de necesidades de aplicación experimental, académicas e investigativas (duración 1 mes): En esta etapa se procederá a hacer un análisis de las necesidades físicas específicas de los diferentes ramos y departamentos de la Escuela (por ejemplo: medición y análisis en Neuropsicología, simulación procesal en Psicología Cognitiva, tabulación y corrección automatizada de test en Psicometría, software de Análisis Estadístico o de discurso en Metodología,

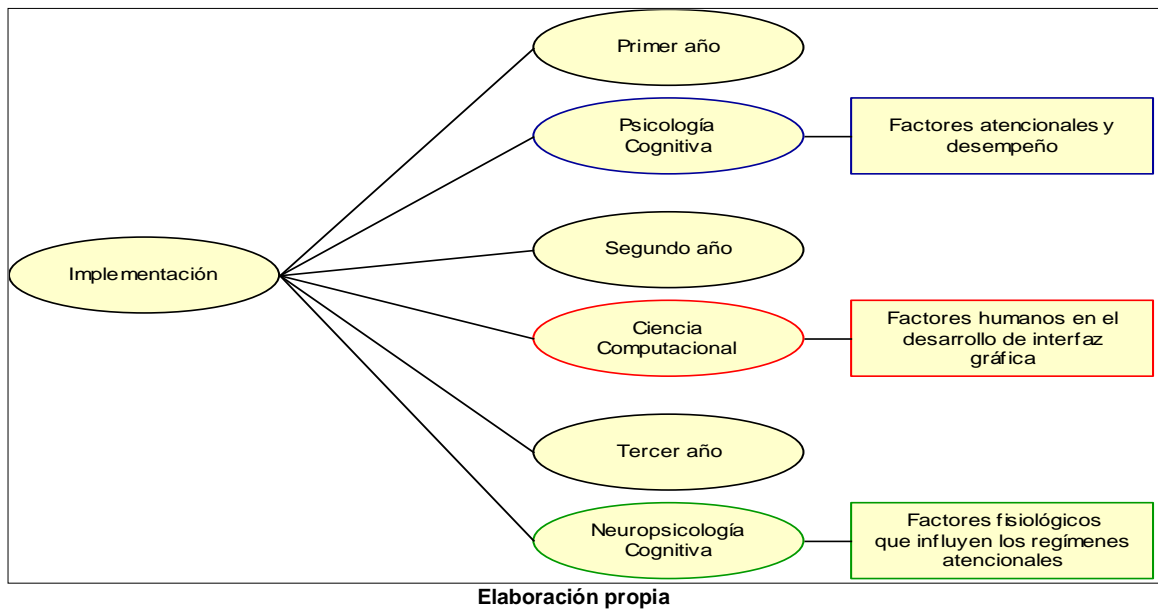
necesidades técnicas específicas de los talleres profesionales, procesamiento de datos en los seminarios, etc).

2. Definición de las prioridades de habilitación en el Laboratorio (duración 2 meses): En esta etapa se espera definir la coherencia temporal de la implementación y las necesidades manifiestas de la Escuela de Psicología, por ejemplo, espacio físico, cableado eléctrico, necesidades sanitarias y de seguridad, cableado de red, descripción de cargo de encargado, análisis de software a usar, análisis de hardware a usar, etc.
3. Análisis de sustentabilidad (1 a 2 semanas): Este análisis está ligado al gasto mensual que implica el funcionamiento del laboratorio, por ejemplo la remuneración del encargado, el recambio de piezas, gastos en insumos generales, etc.
4. Construcción y habilitación (duración 3 a 6 meses): Lapso destinado a la habilitación del espacio previamente definido.
5. Inicio de actividades (primer semestre del segundo año del proyecto): Entrada en funcionamiento del Laboratorio.
6. Evaluación de actividades primer año (final del segundo año): Evaluación ligada a dos polos: en primer lugar, a los aspectos económicos de la habilitación y en segundo a las actividades realizadas durante el primer año.

Una vez habilitado y funcionando el laboratorio debería contar con plazos fijos de inicio, término y evaluación de actividades, acordes a las limitantes del año lectivo universitario.

En esta sección debemos plantear la coherencia temporal de la implementación del laboratorio con las líneas específicas definidas en el apartado anterior, por lo que dividiremos la implementación en tres etapas cada una equivalente a una año (Figura 16).

Figura 16: Implementación por año de líneas de investigación



1. Primer año: Durante el primer año de implementación se realiza la evaluación y la implementación del Laboratorio. Es nuestra opinión que durante este período se puedan realizar investigaciones básicas con la infraestructura existente en la Escuela de Psicología. Para este período se propone el estudio de factores atencionales y desempeño ligado a la rama de Psicología cognitiva, por supuesto habiendo definido desde ya un objetivo claro; por ejemplo, el desarrollo de interfaz gráfica para escolares. La infraestructura necesaria es mínima y este sería el paso previo para el desarrollo real de la aplicación que se daría durante el segundo año, una vez habilitado el laboratorio. Los materiales requeridos son:

- Sala: Se requiere una sala independiente para el desarrollo de la experimentación, si es posible con aislamiento sónico para disminuir la contaminación perceptual.
- Computador: Se requiere al menos un computador para diseñar la presentación de estímulos visuales o auditivos y para el registro y análisis de los datos.
- Data Show: Se utiliza como medio de presentación de estímulos visuales básicos (colores, formas) o complejos (composiciones visuales, ambientes de búsqueda, etc).
- Equipo de sonido: Si es posible con canales diferenciados para analizar escucha dicótica. Se utiliza como medio de presentación de estímulos auditivos.
- Cámara de video: Se utiliza básicamente para el registro de la experimentación.

Se espera contar al final del primer año con la información necesaria para avanzar al siguiente paso que es el desarrollo de aplicaciones.

2. Segundo año: Durante el segundo año se abre el trabajo en el Laboratorio a la Escuela por lo que se puede empezar a trabajar en distintos proyectos ligados al tema de diseño. Para este año se requiere una alianza estratégica con la carrera de Diseño Gráfico de la Universidad de Valparaíso. Proponiéndose el desarrollo de trabajo multidisciplinario enfocado a la obtención de productos según los hallazgos obtenidos en la etapa anterior. La infraestructura requerida es:

- Básicamente lo definido en la implementación general, una sala de computación con acceso a Internet y con la capacidad para soportar software de diseño.

- En este punto es esencial la vinculación con la Carrera de Diseño gráfico, no solo por el trabajo multidisciplinario, sino para tener acceso a las distintas licencias de software de diseño.
- Software de análisis de datos.

En este año de desarrollo la evaluación está ligada a la producción y exhibición de los productos obtenidos.

3. Tercer año: Hemos definido el tercer año de desarrollo como la propuesta a más largo plazo puesto que implica la vinculación con Departamentos que tengan la capacidad para hacer mediciones fisiológicas. Esta propuesta se ubica en este marco temporal ya que creemos que para el tercer año se puede tener un bagaje teórico suficiente y una cantidad de aplicaciones en funcionamiento que permitan interesar a otros departamentos o instituciones en el trabajo desarrollado, ya sea para complementar lo que se ha hecho como para abrir nuevos campos de investigación.

La coherencia temporal propuesta encaja con el desarrollo general del laboratorio y se define como una más de las múltiples iniciativas que se pueden llevar a cabo en un ambiente de experimentación y aplicación con las características que hemos definido.

Debemos aclarar que este es un esbozo de sólo una de las líneas de investigación posibles en Ciencia Cognitiva y que se propone como el punto de inicio para desarrollos cada vez más complejos e interesantes. Por ejemplo, durante el segundo año mientras se trabaja en el diseño de aplicaciones, otro grupo puede iniciar estudios en Psicología Cognitiva ligados a desempeño o ergonomía; se podría tener grupos de trabajo paralelos en que se diseñen productos para distintos grupos de edades específicas, incluso se podría adelantar la vinculación con la Facultad de Ciencias e iniciar ya desde el segundo año estudios de medición fisiológica, etc.

De todas formas pensamos que nuestra propuesta representa una oportunidad interesante para abrir campos de investigación de forma rápida y a bajo costo, siempre ligando la evaluación a la producción de conocimiento básico y servicios que es, como ya hemos mencionado, la mejor forma de posicionar a la Escuela y probablemente de sustentar estas mismas líneas de investigación.

Discusión

De acuerdo a la información que hemos recabado podemos decir que la oferta nacional en Psicología es bastante homogénea, es decir que de acuerdo a los criterios externos no existe mayor diferencia entre los programas de estudio de las distintas Universidades, a diferencia de las instituciones Norteamericanas en las que se puede notar una tendencia y en algunos casos más que una tendencia, un compromiso institucional con una línea teórica determinada.

Observamos que la demanda por la carrera de Psicología aumenta junto con la oferta, el rápido crecimiento de las Instituciones no tradicionales demuestra que toda vacante en esta área va a ser copada, o que al menos esa es la tendencia que se ve en los gráficos. Las preguntas que debemos hacer en este momento son ¿qué diferencia una carrera de otra si todos los programas de estudio son comparables y si las variaciones que se dan entre estos es mínima? Y ¿cuáles son los factores que influyen en la toma de decisiones de un postulante al elegir una institución por sobre otra?.

Descartada la estructura curricular, Las respuestas a estas preguntas, desde nuestro punto de vista residen en los mismos factores: calidad del profesorado, infraestructura, convenios internacionales y volumen de investigación.

Si descartamos el profesorado, ya que muchas veces son los mismos académicos los que imparten las mismas cátedras en ambos tipos de institución, nos quedan tres puntos

- Infraestructura: Es un hecho claro que no podemos competir en infraestructura, puesto que la capacidad económica es dispar.
- Convenios con instituciones extranjeras: La vinculación con programas de estudio extranjeros y la posibilidad de ofrecer postgrados es en estos momentos una necesidad.

- Volumen de investigación: En este punto cabe preguntarse acerca de la utilidad de una investigación si esta no es publicitada, este factor podría ser el decisivo que marque la diferencia entre ofertas académicas.

Nuestro trabajo recoge estas inquietudes y ofrece una breve reformulación de contenidos específicos en el pregrado, basados en un extenso estudio acerca de temáticas en ciencia cognitiva, dando una oportunidad de diferenciar la oferta académica de las otras existentes, sin perder la posibilidad de acreditarse. Y vamos un paso más allá, ofrecemos líneas de investigación actualizadas, pragmáticas, coherentes con el pregrado y de fácil implementación que le permitan a la institución posicionarse dentro de la región a la vez ofreciendo a sus alumnos la posibilidad de participar de estos desarrollos.

Es nuestra opinión que sólo a través de líneas de investigación sostenidas, que produzcan resultados pragmáticos es que podremos publicitar el trabajo de la institución. Además este trabajo representa una guía para posibles vínculos con instituciones extranjeras ya que si estamos trabajando en líneas similares podría resultar mucho más simple iniciar los contactos y crear alianzas estratégicas que beneficien el desarrollo en Pregrado.

Referencias Bibliográficas

- Araya, Roberto (2000), *Inteligencia Matemática*. Editorial Universitaria, Santiago.
- Berko, J. y Bernstein, N.. (2000), *Psicolingüística*. Madrid: McGraw-Hill.
- Boden, Margaret A. (Compilador) (1994), *Filosofía de la inteligencia artificial*. Fondo de Cultura Económica. Ciudad de México.
- Boden, Margaret A. (1984), *Inteligencia Artificial y hombre natural*, Tecnos, Madrid.
- Cinta de Moebio N°3 (Abril de 1998), Universidad de Chile. Facultad de Ciencias Sociales. Santiago.
- De Vega Manuel (1984), *Introducción a la psicología cognitiva*. Alianza Editorial, Madrid.
- Documentos COTEC Sobre Oportunidades Tecnológicas nº13. 1998 *Redes Neuronales*. Madrid.
- Donald a. Norman (1987), *Perspectivas de la ciencia cognitiva*. Paidós, Barcelona.
- Gardner Howard (1995), *La nueva ciencia de la mente. Historia de la revolución cognitiva*, Paidós, Barcelona,
- Garnham, A. y Oakhill, J. (1996), *Pensamiento y Razonamiento*. Blackwell. Oxford.
- Martín del Brío, Bonifacio y Sans Molina, Alfredo. (2002), *Redes Neuronales y Sistemas Difusos*. Alfaomega Rama. México.
- Munard, Enric; Rosselló, Jaume y Sánchez- Cabaco, Antonio (coord). (1997), *Atención y Percepción*, Alianza, Madrid.
- Papert, Seymour. (2000), *La Educación Digital*, MIT press, Cambridge.
- Penrose, Roger. (1996), *La Nueva Mente del Emperador*. Fondo de Cultura Económica, Ciudad de México.
- Russel, stuart y Norvig, Peter. (1996), *Inteligencia Artificial. Un Enfoque Moderno*. Prentice Hall. Ciudad de México.

Stillings, N. A.; Feinstein, M.H.; et al, (2001), *Cognitive Science, An Introduction*, The MIT Press, Cambridge, Massachussets.

Varela, Francisco J. (1996), *CONOCER*, Ed. GEDISA, Barcelona.

Secretaría general del H. Consejo de Rectores (1996 – 2004), *Anuario estadístico*, Editado por la secretaría general del H. Consejo de Rectores, Santiago, Chile.

Antecedentes

- Ministerio de Educación, Chile, www.mineduc.cl
- Comisión nacional para la acreditación del pregrado, www.cnap.cl
- Colegio Oficial de Psicólogos, España, www.cop.es
- Colegio de Psicólogos Chile, www.colegiopsicologos.cl
- Departamentos de Psicología en la Web, <http://www.psywww.com/resource/deptlist.htm>

Instituciones Chilenas.

- Universidad Central, www.ucentral.cl
- Universidad Santo Tomás, www.ust.cl
- Universidad Andrés Bello, www.unab.cl
- Universidad de Chile, www.uchile.cl
- Pontificia Universidad Católica, www.puc.cl
- Universidad Viña del mar, www.uvimar.cl
- Universidad del Mar, www.udelmar.cl
- Universidad de Valparaíso, www.uv.cl
- Pontificia Universidad Católica de Valparaíso, www.ucv.cl
- Universidad Mayor, www.umayor.cl

Actualización en Temas de Ciencia Cognitiva, Instituciones Norteamericanas y Españolas.

- Alabama, University of, at Birmingham Birmingham, <http://www.psy.uab.edu/>
- Arizona, University of Tucson, <http://psychology.arizona.edu/>
- Arizona State University Tempe, <http://psych.la.asu.edu/>
- California, University of, at Los Angeles (UCLA), <http://www.psych.ucla.edu/>

- California, University of, at San Diego, <http://psy.ucsd.edu/>
- California, University of, at Santa Barbara, <http://www.psych.ucsb.edu/>
- Regis University Denver, <http://www.regis.edu/regis.asp?sctn=apg&p1=ut&p2=py>
- Trinity College Hartford, <http://www.trincoll.edu/depts/psyc/>
- Catholic University of America Washington, <http://psychology.cua.edu/>
- Florida, University of Gainesville, <http://www.psych.ufl.edu/>
- Florida State University Tallahassee, <http://www.psy.fsu.edu/>
- Notre Dame, University of Notre Dame, <http://www.nd.edu/~psych/>
- Purdue University West Lafayette, <http://www.psych.purdue.edu/>
- Boston University Boston, <http://www.bu.edu/psych/>
- Gordon College Wenham, <http://www.gordon.edu/academics/psychology/>
- Smith College Northampton, <http://www.science.smith.edu/departments/PSYCH>
- Madonna University Livonia, <http://www.madonna.edu/pages/psychology.cfm>
- Missouri, University of, at Columbia Columbia, <http://www.missouri.edu/~psywww/>
- Montana State University Bozeman, <http://www.montana.edu/wwwpy/>
- Nebraska, University of Lincoln, <http://www.unl.edu/psypage/>
- Nebraska, University of, at Kearney Department of Counseling & School Psychology, <http://www.unk.edu/acad/psychology/>
- Dartmouth College Hanover, <http://www.dartmouth.edu/artsci/psych/index.html>
- Princeton University Princeton, <http://www.princeton.edu/~psych/>
- Seton Hall University South Orange, <http://artsci.shu.edu/psychology/>
- Alfred University Alfred, <http://las.alfred.edu/~psy/>
- Colgate University Hamilton, <http://departments.colgate.edu/psychology/>
- Hartwick College Psych major. Oneonta,
<http://www.hartwick.edu/academic/psyc.html>
- Hobart & William Smith Colleges Geneva, <http://academic.hws.edu/psych/>
- Ithaca College Ithaca, <http://www.ithaca.edu/hs/psych/psych1/>
- New York University New York, <http://www.psych.nyu.edu/>
- Rochester Institute of Technology Rochester,
http://www.rit.edu/~932www/ugrad_bulletin/colleges/cla/psy.html
- St. Bonaventure University St. Bonaventure,
http://www.sbu.edu/academics_psychology.html
- Syracuse University Syracuse, <http://psychweb.syr.edu/>

- Elon University Elon, <http://www.elon.edu/psychology/>
- North Carolina, University of, at Greensboro Greensboro, <http://www.gborocollege.edu/academics/departments/psych.html>
- North Dakota State University Fargo, <http://www.ndsu.nodak.edu/ndsu/psychology/>
- Ohio State University Columbus, <http://www.psy.ohio-state.edu/>
- Ohio Wesleyan University Delaware, <http://cc.owu.edu/~psycweb/index.html>
- Carnegie Mellon University Pittsburg, <http://www.psy.cmu.edu/>
- Clemson University Clemson, <http://www.clemson.edu/psych/>
- Vanderbilt University Nashville, <http://sitemason.vanderbilt.edu/psychology>
- Texas Tech University Lubbock, <http://www.depts.ttu.edu/psy/>
- Texas, University of, at Arlington Arlington, <http://www.uta.edu/psychology/>
- Trinity University San Antonio, <http://www.trinity.edu/departments/psychology/index.html>
- Utah, University of Salt Lake City, <http://www.psych.utah.edu/frontpage/index.html>
- Washington & Lee University Lexington, <http://thecollege.wlu.edu/departments/department.asp?departmentname=psychology>
- Universidad Complutense de Madrid, <http://www.ucm.es/info/Psi/>

Actualización en Investigación de Ciencia Cognitiva, Instituciones Norteamericanas y Españolas.

- Alabama, University of, at Birmingham Birmingham, <http://www.psy.uab.edu/>
- Arizona, University of Tucson, <http://psychology.arizona.edu/>
- Arizona State University Tempe, <http://psych.la.asu.edu/>
- California, University of, at Irvine, <http://www.psychology.uci.edu/>
- California, University of, at Los Angeles (UCLA), <http://www.psych.ucla.edu/>
- California, University of, at Santa Barbara, <http://www.psych.ucsb.edu/>
- Regis University Denver, <http://www.regis.edu/regis.asp?sctn=apg&p1=ut&p2=py>
- Catholic University of America Washington, <http://psychology.cua.edu/>
- Georgia Institute of Technology Atlanta, <http://www.gatech.edu/psychology/>
- Boston University Boston, <http://www.bu.edu/psych/>
- Minnesota, University of Minneapolis and St. Paul, <http://www.psych.umn.edu/>

- Missouri, University of, at Columbia Columbia, <http://www.missouri.edu/~psywww/>
- Montana State University Bozeman, <http://www.montana.edu/wwwpy/>
- Dartmouth College Hanover, <http://www.dartmouth.edu/artsci/psych/index.html>
- Princeton University Princeton, <http://www.princeton.edu/~psych/>
- Rochester University of Department of Brain and Cognitive Sciences, <http://www.bcs.rochester.edu/>
- North Carolina, University of, at Greensboro Greensboro, <http://www.uncg.edu/psy/>
- Ohio State University Columbus, <http://www.psy.ohio-state.edu/>
- Clemson University Clemson, <http://www.clemson.edu/psych/>
- Vanderbilt University Nashville, <http://sitemason.vanderbilt.edu/psychology>
- Utah, University of Salt Lake City, <http://www.psych.utah.edu/frontpage/index.html>
- Universidad de Deusto, España, <http://www.fice.deusto.es/>

Anexos

Anexo I

Manuales de Ciencia Cognitiva

Listado de Manuales Universitarios de consulta organizados por tema:

Ciencias Cognitivas en general

1.-Cognitive Psychology by Robert J. Sternberg

Editorial Reviews

About the Author

Robert J. Sternberg, the current President of APA (American Psychological Association) is IBM Professor of Psychology and Education in the Department of Psychology at Yale University. Dr. Sternberg received his B.A. from Yale and his Ph.D. in Psychology from Stanford University. He has received numerous awards, including the James McKeen Cattell Award from the American Psychological Society; the Early Career and McCandless Awards from the American Psychological Association; and the Outstanding Book, Research Review, Sylvia Scribner and Palmer O. Johnson Awards from the AERA. In addition, Dr. Sternberg has been editor of the PSYCHOLOGICAL BULLETIN and the AMERICAN PSYCHOLOGICAL ASSOCIATION REVIEW OF BOOKS: CONTEMPORARY PSYCHOLOGY.

Product Description:

Sternberg's text balances accessible writing, practical applications and research scholarship, including biologically oriented information. It explores the basics of cognitive psychology through its coverage of **cognitive neuroscience, attention and consciousness, perception, memory, knowledge representation, language, problem solving and creativity, decision making and reasoning, cognitive development, and intelligence.**

Hardcover: 620 pages

Publisher: Wadsworth Publishing; 3rd edition (August 2, 2002)

ISBN: 0155085352

2.-Cognitive Psychology by Douglas Medin, Brian H. Ross, Arthur B. Markman

Editorial Reviews

From Book News, Inc.

This textbook in cognitive psychology provides a framework for the understanding of key concepts, describes research methods, and outlines the main puzzles, problems, questions, and controversies in the field. **Chapters concentrate on various aspects of acquiring information, memory, language, understanding, and thinking.** In this edition, the material on each of these topics has been updated, the chapters covering memory have been reorganized, and the chapter on language acquisition has been removed. The three authors are researchers and teachers at American universities. Copyright © 2004 Book News, Inc., Portland, OR--This text refers to the Hardcover edition.

Product Description:

Cognitive Psychology, Fourth Edition, presents a coherent overview of cognitive psychology organized in terms of themes that cut across topic areas. Written by well-known researchers, the book is completely current in describing ongoing controversies in research; it provides summaries of key experiments that distinguish between them; and it encourages the reader to think critically about current research and theories. The focus on the importance of physical and computational constraints on cognition is preserved throughout the book.

Hardcover: 576 pages

Publisher: John Wiley & Sons; 4 edition (April 9, 2004)

ISBN: 0471458201

3.- Cognitive Psychology : Connecting Mind, Research and Everyday Experience (with Coglab Online and Concept Charts Booklet)

by E. Bruce Goldstein

Editorial Reviews

From Book News, Inc.

This textbook covers the basic topics of **cognitive psychology, including perception, attention, memory, memory errors, knowledge, visual imagery, language, problem solving, and reasoning and decision- making**. A companion workbook contains review summaries, practice tests, concept maps, and other exercises. Goldstein teaches psychology at the University of Pittsburgh. Copyright © 2004 Book News, Inc., Portland, OR

Product Description:

Connecting the study of cognition to everyday life in an unprecedented way, Bruce Goldstein's COGNITIVE PSYCHOLOGY gives equal treatment to both the landmark studies and the cutting-edge research that define this fascinating field. The text employs a wealth of concrete examples and illustrations that will help students understand the theories of cognition -- driving home both the scientific importance of the theories and their relevance to students' daily lives. Students will leave this text with a true understanding of the "behind the scenes" activity that happens in the mind when humans do such seemingly simple activities as **perceiving, remembering, or thinking**. **Goldstein's coverage also focuses on the behavioral and physiological approaches to cognition by including physiological materials in every chapter**. To help students further experiment with the concepts discussed in the text, free pincode access to CogLab: The Online Cognitive Psychology Laboratory is automatically packaged with every new copy of the text. Students also automatically receive the Concept Maps with CogLab Online Manual. The manual includes 60 "Concept Maps," which present the major concepts in the text using a visual approach that will help students remember the material.

Hardcover: 608 pages

Publisher: Wadsworth Publishing; 1 edition (July 1, 2004)

ISBN: 0534577261

4.- Cognitive Psychology In and Out of the Laboratory (with InfoTrac) by Kathleen M. Galotti

Editorial Reviews

From Book News, Inc.

Emphasizing the relationship between cognition's laboratory phenomena and everyday experiences, this textbook uses real-world examples to clarify theoretical models. **The book begins with a discussion of basic mental processes and then considers the representation and organization of knowledge, the use and manipulation of information, and individual and situational differences in cognition.**

Galotti teaches psychology and cognitive studies at Carlton College. Copyright © 2004 Book News, Inc., Portland, OR

Product Description:

Kathleen Galotti's text led the way in emphasizing the applied side of cognitive psychology. The title of the book emphasizes its "in and out" of the laboratory focus, which includes cross-cultural, individual and gender differences, as well as cognitive development through adolescence. This coverage is very unique to Galotti's text, which shows readers both the importance and the personal relevance of understanding brain function. COGNITIVE PSYCHOLOGY: IN AND OUT OF THE LABORATORY is perfect for instructors who like to supplement their primary text with readings from additional sources. Additional study aids, review questions, InfoTrac College Edition search terms and activities, and references to the CogLab Web site encourage students to get involved with the content and help them understand even the most abstract concepts through hands-on practice and reinforcement.

Hardcover: 672 pages

Publisher: Wadsworth Publishing; 3 edition (July 21, 2003)

ISBN: 0534600840

5.-Cognitive Science: An Introduction, Second Edition by Neil A. Stillings, Steven W. Weisler, Christopher H. Chase, Mark H. Feinstein, Jay L. Garfield, Edwina L. Rissland

Editorial Reviews

From Book News, Inc.

An undergraduate text that broadly surveys **the theories and empirical results of cognitive science within a computational perspective, in addition to covering the individual contributions of psychology, philosophy, linguistics, and artificial intelligence to cognitive science. This edition is revised to introduce the connectionist approach as well as the classical symbolic approach, and adds a new chapter on cognitively related advances in neuroscience.** Annotation copyright Book News, Inc. Portland, Or.--This text refers to the Hardcover edition.

Paperback: 544 pages

Publisher: Bradford Books; 2nd edition (March 17, 1995)

ISBN: 0262691752

6.- Cognitive Science : A Philosophical Introduction by Rom Harre

Editorial Reviews

From Book News, Inc.

Drawing his research as a guest professor at the Philosophy Institute, Aarhus U., Denmark, the author gave a series of lectures at the U. of Ohio in 1998; those lectures are the foundation of this teaching text. **He focuses on the methods, aims, implications, and applications of cognitive science and on philosophical questions relevant to the evolving science of psychology. Chapters discuss the philosophy of science, the scientific method, varieties of materialism, the origins of cognitive science, grammar and cognition, the analytic approach, connectivism, memory, classification, and cognitive disorders.** Copyright © 2004 Book News, Inc., Portland, OR--This text refers to the Hardcover edition.

Product Description:

This is the first major textbook to offer a truly comprehensive review of cognitive science in its fullest sense. Ranging across artificial intelligence models and cognitive psychology through to recent discursive and cultural theories Rom Harré offers a breathtakingly original yet accessible integration of the field. At its core this textbook addresses the question "is psychology a science?" with a clear account of scientific method and explanation and their bearing on psychological research.

A pivotal figure in psychology and philosophy for many decades Rom Harré has turned his unmatched breadth of reference and insight for students at all levels. Whether describing, language, categorization, memory, the brain or connectionism the book always links our intuitions about beliefs, desires and their social context to the latest accounts of their place in computational and biological models.

Fluently written and well structured, this an ideal text for students. The book is divided into four basic modules, with three lectures in each; the reader is guided with helpful learning points, study and essay questions and key readings for each chapter.

Paperback: 336 pages

Publisher: SAGE Publications (February, 2002)

ISBN: 0761947477

7.- Cognitive Science: An Interdisciplinary Approach by Carolyn Sobel

Editorial Reviews

This engagingly written introduction to the cognitive sciences examines the historical and contemporary issues and research findings of the core cognitive science disciplines, **including cognitive psychology, neuroscience, language, philosophy, and artificial**

intelligence. For each of the core disciplines of cognitive science, the historical development and classic research studies are presented in one chapter and current research development and issues follow in a second chapter. The student is given insight into the way each discipline has contributed to the growth of cognitive science and what directions research is taking in the future. This text assumes no background on the part of the reader.

Hardcover: 327 pages

Publisher: McGraw-Hill Humanities/Social Sciences/Languages; 1 edition (January 5, 2001)

ISBN: 0767402138

**8.- Minds, Brains, Computers: An Historical Introduction to the Foundations of Cognitive Science
by Robert Harnish**

Editorial Reviews

About the Author

Robert M. Harnish has been at the University of Arizona since 1971 where he is professor of philosophy and linguistics, and research scientist in cognitive science. He is co-author of *Linguistics, Fifth Edition* (2000), co-editor of *The Representation of Knowledge and Belief* (1986) and *Neural Connections, Mental Computation* (1989), and editor of *Basic Topics in the Philosophy of Language* (1994).

Product Description:

Minds, Brains, Computers serves as both an historical and interdisciplinary introduction to the foundations of cognitive science.

Tracing the history of central concepts from the 19th century to the present, this study surveys the significant contributions of **philosophy, psychology, neuroscience, and computer science. The volume also investigates the theory of mind from two contrasting approaches: the digital computer vs. neural network models.**

Authoritative and comprehensive, *Minds, Brains, Computers* is the ideal text for introductory courses in cognitive science as well as an excellent supplementary text for courses in philosophy of mind.

Hardcover: 446 pages

Publisher: Blackwell Publishers (September 1, 2001)

ISBN: 0631212604

**9.- The Foundations of Cognitive Science
by Michael I. Posner (Editor)**

Editorial Reviews

From Book News, Inc.

Leading scholars cover the major architectures; provide **background in philosophy, linguistics, cognitive psychology, and neuroscience; and deal with methods for studying both brain and mind. The foundations of the field are fully developed, and then applied to the major cognitive domains (language acquisition, reading, discourse, etc.).** In addition to being a guidebook, a dictionary, and an encyclopedic reference, it's remarkably readable. Annotation copyright Book News, Inc. Portland, Or.-- This text refers to the Hardcover edition.

Product Description:

the first broad treatment of cognitive science at an advanced level

See all Editorial Reviews

Paperback: 904 pages

Publisher: Bradford Books; Reprint edition (August 23, 1993)

ISBN: 0262660865

**10.- Understanding Cognitive Science
by Michael Dawson**

Editorial Reviews

From Book News, Inc.

An introductory textbook for graduates and undergraduates, offering the theoretical foundations of the classic and connectivist approaches. Presents an overview of the tri-level hypothesis and shows how it can provide a unifying force to keep the different disciplines within cognitive science working together productively. Assumes some background in at least one of the cognitive sciences. Book News, Inc.®, Portland, OR-- This text refers to the Hardcover edition.

Paperback: 320 pages

Publisher: Blackwell Publishers (October 1, 1998)

ISBN: 063120895X

11.- Mind: Introduction to Cognitive Science by Paul Thagard

Editorial Reviews

About the Author

Paul Thagard is Director of the Cognitive Science Program, Professor of Philosophy, and Adjunct Professor of Psychology and Computer Science at the University of Waterloo. He is author or coauthor of four previous books in Cognitive Science, including *Mental Leaps: Analogy in Creative Thought* (with Keith Holyoak) and *Conceptual Revolutions*.

Product Description:

"Thagard has written an engaging introduction to cognitive science, which will appeal to students with a wide range of backgrounds. *Mind* highlights both the core ideas about mental representation that guide the field, and the intellectual challenges that fuel current debates." -- Keith J. Holyoak, Professor of Psychology, University of California, Los Angeles

Cognitive science is the interdisciplinary study of mind and intelligence, embracing psychology, philosophy, artificial intelligence, neuroscience, linguistics, and anthropology. Paul Thagard's accessible, concise, and integrated text presupposes no special preparation in any of these fields. Thagard systematically describes and evaluates the main computational theories of mental representation that have been advocated by cognitive scientists, including logic, rules, concepts, analogies, images, and connections (neural networks). **He considers the major challenges to the computational-representational view of mind and discusses emotions, consciousness, physical and social environments, dynamical systems, and mathematical knowledge.**

Teaching cognitive science is difficult, Thagard observes, because students come to this multidisciplinary subject with widely different competencies, backgrounds, and interests. *Mind* solves this dilemma by making logic comprehensible to psychology students, computer algorithms comprehensible to English students, and philosophical controversies comprehensible to computer science students. Each chapter concludes with helpful summaries, discussion questions, and suggestions for further reading. *Mind* is ideal for introductory courses on Cognitive Science, and is also useful as a supplement to courses on cognitive psychology, educational psychology, philosophy of mind, and artificial intelligence.

Contents

A Bradford Book

Hardcover: 213 pages

Publisher: Bradford Books (October 1, 1996)

ISBN: 0262201062

12.- A Companion to Cognitive Science (Blackwell Companions to Philosophy) by William Bechtel, George Graham

Editorial Reviews

About the Author

William Bechtel is Associate Director of the Philosophy-Neuroscience-Psychology Program at Washington University in St Louis. He is editor of the journal *Philosophical Psychology* and the author of numerous books and papers in the philosophy of cognitive science and related subject areas. These include: *How to do Things With Logic*, with C. Grant Luckhardt, (1994); *Discovering Complexity: Decomposition and Localization as Strategies in Scientific Research*, with R. C. Richardson, (1993); *Connectionism and the Mind: An Introduction to Parallel Processing in Networks*, with Adele Abrahamsen, (Blackwell, 1991; second edition 1999), *Philosophy of Mind: An overview for Cognitive Science* (1988), and *Philosophy of Science: An Overview for Cognitive Science* (1988). George Graham is Professor and Chair of the Department of Philosophy, and Professor of Psychology at the University of Alabama at Birmingham. He is the co-author of *Philosophy Then and Now*, with N. Scott Arnold and T. M. Benditt, (Blackwell, 1998), author of *Philosophy of Mind* (Blackwell 1993, second edition 1998), and editor of *Philosophical Psychopathology*, with G. L. Stephens, (1994), and *Person to Person*, with H. LaFollette, (1989).

Product Description:

Unmatched in the quality of its world-renowned contributors, this multidisciplinary Companion serves as both a course text and a reference book across the broad spectrum of issues of concern to cognitive science. Cognitive science is one of the most exciting intellectual and scientific developments of the second half of the 20th century, **integrating insights from psychology, linguistics, artificial intelligence, neuroscience, philosophy, and other disciplines in an attempt to understand human cognition.** It is also a rapidly transforming domain of inquiry. This Companion presents everything one needs to know about cognitive science, what it has accomplished, and where it will be going at the start of the 21st century. Beginning with an introduction that maps the narrative history of cognitive science as a whole, the volume goes on to present sixty newly-commissioned essays that together provide an unparalleled survey of all the topical areas, major methods, and stances. There are explanatory overviews of key controversies, detailed discussions of the application of work in cognitive sciences to the real world, and anticipations of future developments. *A Companion to Cognitive Science* can be seen as the ultimate resource guide to this fast-moving field of study.

Paperback: 800 pages

Publisher: Blackwell Publishers; Reprint edition (August 1, 1999)

ISBN: 0631218513

13.- Cognitive Psychology: Applying the Science of the Mind

by Gregory L. Robinson-Riegler, Bridget Robinson-Riegler, Greg L. Robinson-Riegler,
Robinson-Riegler

Editorial Reviews

From the Back Cover

This book brings cognition to life by demonstrating the endless application of cognitive psychology to everyday life. While introducing the current research in this rapidly changing field, the text also introduces critical thinking exercises that highlight important phenomena and provide an engaging firsthand view of the everyday relevance of research in cognition.

Highlights:

The book has three main threads that serve as unifying themes for current research in the field: Cognition and Neuroscience; Cognition and Consciousness; and Cognition and Individual Differences.

A "story" introduces the book and is continually referred to throughout in installments, highlighting the application of the information and providing a useful organizing tool.

A separate chapter on research methods presents an overview of experiments and data analysis, presented within the context of cognition research.

Includes unique chapters on autobiographical memory and memory distortion.

Also available from this author team:

Readings in Cognitive Psychology

(ISBN: 0-205-35867-5)

This research reader helps provide an understanding of the fundamental concepts that have helped define the field of cognitive psychology. It is interesting, applicable, and extremely relevant to the cognitive psychology course and our lives. Article topics include the distinction between top-down and bottom-up processing, divided attention, proactive interference, and language learnability.

Hardcover: 640 pages

Publisher: Allyn & Bacon; 1st edition (October 24, 2003)

ISBN: 020532763X

14.- The Computer and the Mind: An Introduction to Cognitive Science by Philip Nicholas Johnson-Laird

Editorial Reviews

From Library Journal

Cognitive science, writes Johnson-Laird, "tries to elucidate the workings of the mind by treating them as computations." This is no simplistic "man is a machine" approach, however; the author is well read in a number of disciplines, including philosophy, and he admits that there "may be aspects of the mind that lie outside scientific explanation." The "theory of computability," used to model mental processes, is here used to explain vision, learning, memory, emotion, etc.

Philosophers will object that the project is fundamentally misconceived; that remains to be seen, but for now the approach has implications for cybernetics, artificial intelligence, and robotics. For academic collections. Leon H. Brody, U.S. Office of Personnel Management Lib., Washington, D.C.
Copyright 1988 Reed Business Information, Inc.

Hardcover: 444 pages
Publisher: Harvard University Press (April 1, 1988)
ISBN: 0674156153

15.- Minds, Brains, and Computers: The Foundations of Cognitive Science : An Anthology (Blackwell Philosophy Anthologies)
by Denise Dellarosa Cummins, Robert Cummins
Paperback: 552 pages
Publisher: Blackwell Publishers (January 1, 2000)
ISBN: 1557868778

16.- CogLab on a CD
by Greg Francis, Ian Neath

Editorial Reviews

From Book News, Inc.

This lab manual/CD-ROM package presents a set of demonstrations of classic and current experiments and concepts from cognitive psychology, allowing students to understand study design, data interpretation, and the significance of the research. The CD-ROM will work on any operating system that supports the Java programming language, including Microsoft Windows 98-XP and MacOS 8.5-X. Francis is affiliated with Purdue University. Copyright © 2004 Book News, Inc., Portland, OR

Product Description:

Do more than just think about cognition! Now available on CD-ROM or online, **CogLab contains dozens of classic experiments designed to help students learn about cognitive concepts and how the mind works.** Nothing is more powerful than letting your students see the effects of these experiments for themselves. CogLab gives both students and instructors the chance to participate as subjects in research experiments. Students can run the experiments, collect data, and save their data in one of three formats--a special CogLab format that allows them to view their data from within the program, an HTML format that allows them to print and save graphics and formatted text, and a text format that allows the data to be easily integrated into other programs. CogLab on CD-ROM gives students access to their own data, while CogLab online allows instructors to combine data across all of their students, to have class averages automatically calculated, and to make those averages available to students. Instructors who choose the CD-ROM version can download a program that will allow them to combine and calculate class averages. (For a complete list of differences between the online and CD-ROM versions, visit the CogLab Web site at <http://coglab.wadsworth.com/>.) CogLab is available online for use anywhere and anytime, or on CD-ROM for situations where Internet access is impractical. Correlations to CogLab are built into many of Wadsworth's Cognitive

Psychology texts. Either version can be bundled with any Wadsworth Psychology text for a minimal charge.

Paperback: 128 pages

Publisher: Wadsworth Publishing; 3 edition (July 14, 2003)

ISBN: 0534640672

1.-Skepticism and the Veil of Perception (Studies in Epistemology and Cognitive Theory (Unnumbered).)

by [Michael Huemer](#)

Editorial Reviews

About the Author

Michael Huemer is assistant professor of philosophy at the University of Colorado at Boulder.

Product Description:

Since Descartes, one of the central questions of Western philosophy has been that of how we know that the objects we seem to perceive are real. Philosophical skeptics claim that we know no such thing. Representationalists claim that we can gain such knowledge only by inference, by showing that the hypothesis of a real world is the best explanation for the kind of sensations and mental images we experience. Both accept the doctrine of a 'veil of perception': that perception can only give us direct awareness of images or representations of objects, not the external objects themselves. In contrast, Huemer develops a theory of perceptual awareness in which perception gives us direct awareness of real objects, not mental representations, and we have non-inferential knowledge of the properties of these objects. Further, Huemer confronts the four main arguments for philosophical skepticism, showing that they are powerless against this kind of theory of perceptual knowledge.

Paperback: 209 pages

Publisher: Rowman & Littlefield (Non NBN) (July 17, 2001)

ISBN: 0742512533

2.- Perception and Reason

by [Bill Brewer](#)

Editorial Reviews

Bill Brewer presents an original view of the role of conscious experience in the acquisition of empirical knowledge. He argues that **perceptual experiences must provide reasons for empirical beliefs if there are to be any determinate beliefs at all about particular objects in the world.** This fresh approach to epistemology turns away from the search for necessary and sufficient conditions for knowledge and works instead from a theory of understanding in a particular area.

Hardcover: 304 pages

Publisher: Oxford University Press (March 1, 1999)

ISBN: 01982356

3.- Epistemology: A Contemporary Introduction (Routledge Contemporary Introductions to Philosophy)

by [Robert Audi](#)

Editorial Reviews

Ernest Sosa, Brown University

"No less than one would expect from a first-rate epistemologist who is also a master

expositor....A superb introduction."

Product Description:

Epistemology, or **the theory of knowledge, is concerned with how we know what we do, what justifies us in believing what we do, and what standards of evidence we should use in seeking truths about the world and human experience.** This comprehensive book introduces the concepts and theories central for understanding knowledge.

The revised edition of this hugely successful book builds on the topics covered in the first edition and includes new material on subjects such as virtue epistemology, feminist epistemology and social epistemology. The chapter on moral, scientific and religious knowledge has also been expanded and revised. Robert Audi's style is exceptionally clear and highly accessible for anyone coming to the subject for the first time.

Paperback: 384 pages

Publisher: Routledge; 2nd edition (February, 2003)

ISBN: 0415281091

1.- Handbook of Psycholinguistics

by [Morton Ann Gernsbacher](#)

Editorial Reviews

From Book News, Inc.

A bit hefty to be called a "handbook," this volume compiles state-of-the-art descriptions of the research and theory of many of the subareas of psycholinguistics in chapters written by leading experts in those subareas, yielding a broad and deep coverage of the field.

Among the topics in the 34 chapters are eye movement in reading; event-related brain potential investigations; context and processing of ambiguous words; understanding figurative language; levels of representation in memory for discourse; selective processing in text understanding; psycholinguistics and reading ability; language and the brain; and the neuropsychology of language.

Annotation copyright Book News, Inc. Portland, Or.

Product Description:

The Handbook of Psycholinguistics, in one volume, provides a single source, state of the art review of the many subdisciplines in this area. The Handbook of Psycholinguistics, in one volume, provides a single source, state of the art review of the many subdisciplines in this area. Written by the leading experts in the field, each chapter provides both depth and breadth in covering dynamic research findings on the **acquisition, perception, and comprehension of language**. Now in its third decade of existence, the field has never before had a comprehensive reference source. The handbook discusses research, theory, and methodology, while never compromising the unique integration of psychology and linguistics fundamental to this field.

Hardcover: 1174 pages

Publisher: Academic Press (May 20, 1994)

ISBN: 0122808908

2.- Psycholinguistics

by [Jean Berko Gleason](#), [Nan Bernstein Ratner](#)

This is an excellent introductory text in psycholinguistics, for anyone who wants a detailed overview of the field. Text is comprehensive, but not overly technical. A wonderful dictionary is also provided in the back of the text.

Chapters are as follows: 1. Introduction to Psycholinguistics; 2. Biological Bases of Human Communicative Behavior; 3. Speech Perception; 4. Words and Meaning; 5. Sentence Processing; 6. Text and Discourse; 7. Speech Production; 8. Language Acquisition; 9. Psycholinguistic Account of Reading; 10. Bilingualism and Second Language Acquisition.

Hardcover: 544 pages

Publisher: Wadsworth Publishing; 2nd edition (November 20, 1997)

ISBN: 0155041061

3.-Understanding Language Understanding: Computational Models of Reading (Language, Speech, and Communication)

by [Ashwin Ram](#) (Editor), [Kenneth Moorman](#) (Editor)

Editorial Reviews

Card catalog description

This book highlights cutting-edge research relevant to the building of a computational model of reading comprehension, as in the processing and understanding of a natural language text or story. **The book takes an interdisciplinary approach to the study of reading, with contributions from computer science, psychology, and philosophy. Contributors cover the theoretical and psychological foundations of the research in discussions of what it means to understand a text, how one builds a computational model, and related issues in knowledge representation and reasoning. The book also addresses some of the broader issues that a natural language system must deal with, such as reading in context, linguistic novelty, and information extraction.**

Product Description:

This book highlights cutting-edge research relevant to the building of a computational model of reading comprehension, as in the processing and understanding of a natural language text or story. A distinguishing feature of the book is its emphasis on "real" understanding of "real" narrative texts rather than on syntactic parsing of single sentences taken out of context or on limited understanding of small, researcher-constructed stories.

The book takes an interdisciplinary approach to the study of reading, with contributions from computer science, psychology, and philosophy. Contributors cover the theoretical and psychological foundations of the research in discussions of what it means to understand a text, how one builds a computational model, and related issues in knowledge representation and reasoning. The book also addresses some of the broader issues that a natural language system must deal with, such as reading in context, linguistic novelty, and information extraction.

Contributors: Dorrit Billman, Michael T. Cox, Eric Domeshek, Kurt Eiselt, Charles R. Fletcher, Richard Gerrig, Jennifer Holbrook, Eric Jones, Trent Lange, Mark Langston, Joe Magliano, Kavi Mahesh, Bonnie J. F. Meyer, Justin Peterson, William J. Rapaport, Ellen Riloff, Stuart C. Shapiro, Tom Trabasso, Charles M. Wharton.

Hardcover: 524 pages

Publisher: Bradford Books (May 14, 1999)

ISBN: 0262181924

1.- A User's Guide to the Brain: Perception, Attention, and the Four Theaters of the Brain

by [John J. Ratey](#)

Editorial Reviews

Amazon.com

Before consulting with customer service, it's always a good idea to read the manual. Psychiatrist John Ratey has condensed years of research on one of the most intimidating yet ubiquitous pieces of hardware in the world into the ever-handly *User's Guide to the Brain*. More intellectually stimulating than day-to-day practical, the *Guide* uses tales from Ratey's practice and other clinical venues, tidbits from neuroscientific research, and plain common sense to suggest how the brain develops and manifests personality and behavior. With section titles like "Free Will and the Anterior Cingulate Gyrus," many readers will feel intimidated, but Ratey is careful to direct his explanations to all--even those without a PhD in neuroanatomy. His interesting four-theater theory of mental function is the most directly practical section of the book, incorporating the author's years of experience with patients into a sensible framework that readers can use to better tune their own systems. Describing the changing of the guard from psychoanalysis to a more biological paradigm, Ratey writes:

Neuroscientists have, in a sense, simply taken over the elite, almost clerical office once held by analysts. The language used to describe the brain is, if anything, more opaque than any of the old psychoanalytic terminology, which was itself so obscure that only trained professionals could wade through the literature. Most people never even bother to learn such terminology, deeming that, like the language of the computer scientists of the early 1970s, it is better left to the nerds.

Determined to help us overcome our sense of helplessness in matters cranial, Ratey has shown that we can understand ourselves better and can learn quite a bit from the nerds. --
Rob Lightner--This text refers to the [Hardcover](#) edition.

Product Description:

John Ratey, bestselling author and clinical professor of psychiatry at Harvard Medical School, here lucidly explains the human brain's workings, and paves the way for a better understanding of how the brain affects who we are. **Ratey provides insight into the basic structure and chemistry of the brain, and demonstrates how its systems shape our perceptions, emotions, and behavior.** By giving us a greater understanding of how the brain responds to the guidance of its user, he provides us with knowledge that can enable us to improve our lives.

In *A User's Guide to the Brain*, Ratey clearly and succinctly surveys what scientists now know about the brain and how we use it. He looks at the brain as a malleable organ capable of improvement and change, like any muscle, and examines the way specific motor functions might be applied to overcome neural disorders ranging from everyday shyness to autism. Drawing on examples from his practice and from everyday life, Ratey illustrates that the most important lesson we can learn about our brains is how to use them to their maximum potential.

Paperback: 416 pages

Publisher: Vintage Books USA; 1st Vintage Books ed edition (January 1, 2002)

ISBN: 0375701079

2.- Attention, Space, and Action: Studies in Cognitive Neuroscience
by [Glyn W. Humphreys](#), [John Duncan](#), [Anne Treisman](#)

Editorial Reviews

Paying attention is something we are all familiar with and often take for granted, yet the nature of the operations involved in paying attention is one of the most profound mysteries of the brain. This book contains a rich, interdisciplinary collection of articles by some of the pioneers of contemporary research on attention. **Central themes include how attention is moved within the visual field; attention's role during visual search, and the inhibition of these search processes; how attentional processing changes as continued practice leads to automatic performance; how visual and auditory attentional processing may be linked; and recent advances in functional neuro-imaging and how they have been used to study the brain's attentional network**

Hardcover: 478 pages

Publisher: Oxford University Press (July 1, 1998)

ISBN: 0195126939

3.- Human and Machine Perception 2: Emergence, Attention and Creativity
by [V. Cantoni](#), [Vito Di Gesu](#), [Alessandra Setti](#), [Domenico Tegolo](#), [Virginio Cantoni](#), [It International Workshop on Human and Machine Perception 1998 Pavia](#)

Editorial Reviews

This important new book, covering a wide spectrum of topics, including discussion of the state of the art developments in the field of perception, provides a coherent and thorough analysis of the related range of disciplines. **From the anatomical and physiological, to the psychological aspects of perception, this volume also investigates the hardware and software for machine perception. Drawing comparisons between these different areas, this work is aimed at stimulating new approaches and debates. Covering five topics: evolution, emergence, attention, creativity and knowledge**, this book includes contributions from many acclaimed experts on this subject.

Hardcover: 222 pages

Publisher: Kluwer Academic Pub (September 1, 1999)

ISBN: 0306462915

1.- Working Memory and Human Cognition (Counterpoints)

by [John T.E. Richardson](#), [Oxford University Press](#), [John T. E. Richardson](#)

Editorial Reviews

This contribution to the Counterpoints series compares and contrasts different conceptions of working memory, which is one of the most important and pervasive notions to have informed cognitive psychology over the last 20 years. **Interest in working memory as an element involved in a wide range of everyday cognitive tasks and in laboratory studies is rapidly increasing. This work presents recent advances in the theory and research on working memory, and discusses the conceptual and methodological basis of three major viewpoints.** An open discussion about the issues involved and the commonalities and contrasts in the use of the working memory concept make this volume a stimulating, challenging study which will be essential reading for research workers in the fields of cognition and cognitive neuropsychology.

Paperback: 176 pages

Publisher: Oxford University Press (June 1, 1996)

ISBN: 0195101006

2.- Models of Working Memory : Mechanisms of Active Maintenance and Executive Control

by [Akira Miyake](#) (Editor), [Priti Shah](#) (Editor)

Editorial Reviews

Review

"Given the varied and disparate nature of working memory models, a volume that asks its contributors to provide a definition and address the same eight basic issues is not just welcome but long overdue." Contemporary Psychology "[A] good summary of developments in working memory theory....For the reader wanting a review of current thinking...this volume is quite useful....[T]he editors...have provided an important service to experts in this field." American Journal of Psychology "The organization that the editors implemented was very helpful in understanding and comparing theories....recommended for anyone who strives to remain current in the neurosciences." Journal of the International Neuropsychological Society "Hats off to the editors who assembled 10 diverse models in one volume, representing moves toward unified theories of cognition, a goal advocated by Newell (1990) and reinforced by many...The volume provides a vast amount of factual information to novices...[it] gives experts an opportunity to ponder significant issues that challenge them to develop new and better systems...the editors largely achieved their goals and have provided an important service to experts in the field." American Journal of Psychology "The product for the most part is readable with the neural computational models probably being the most abstruse. As

Product Description:

Working memory is currently a "hot" topic in cognitive psychology and neuroscience. Because of their radically different scopes and emphases, however, comparing different models and theories and understanding how they relate to one another has been a difficult task. This work offers a much-needed forum for systematically comparing and contrasting existing models of working memory. It does so by asking each contributor to address the same comprehensive set of important theoretical questions on working memory. The answers to these

questions elucidate the emerging general consensus on the nature of working memory among different theorists and clarify incompatible theoretical claims that must be resolved in future research. As such, this volume serves not only as a milestone that documents the state of the art in the field, but also as a theoretical guidebook that will promote new lines of research and more precise and comprehensive models of working memory.

Paperback: 526 pages

Publisher: Cambridge University Press (April 13, 1999)

ISBN: 0521587212

3.- Working Memory And Thinking: Current Issues In Thinking And Reasoning (Current Issues in Thinking and Reasoning)

by [Robert H. Logie](#), [Kenneth J. Gilhooly](#), [K. J. Gilhooly](#)

Editorial Reviews

Book Info

(Psychology Press) Univ. of Aberdeen, UK. **Text representing diverse views as regards the nature of working memory and forms of human thinking.** The links between the two are addressed.

Library Binding: 192 pages

Publisher: Taylor & Francis Group (February 1, 1998)

ISBN: 0863775144

1.- Artificial Intelligence: A Modern Approach (2nd Edition)

by [Stuart J. Russell](#), [Peter Norvig](#)

Editorial Reviews

Amazon.com

Artificial Intelligence: A Modern Approach introduces basic ideas in artificial intelligence from the perspective of building intelligent agents, which the authors define as "anything that can be viewed as perceiving its environment through sensors and acting upon the environment through effectors." This textbook is up-to-date and is organized using the latest principles of good textbook design. It includes historical notes at the end of every chapter, exercises, margin notes, a bibliography, and a competent index. *Artificial Intelligence: A Modern Approach* covers a wide array of material, including first-order logic, game playing, knowledge representation, planning, and reinforcement learning. --*This text refers to the [Hardcover](#) edition.*

Product Description:

The long-anticipated revision of this best-selling book offers the most comprehensive, up-to-date introduction to the theory and practice of artificial intelligence. **Intelligent Agents. Solving Problems by Searching. Informed Search Methods. Game Playing. Agents that Reason Logically. First-order Logic. Building a Knowledge Base. Inference in First-Order Logic. Logical Reasoning Systems. Practical Planning. Planning and Acting. Uncertainty. Probabilistic Reasoning Systems. Making Simple Decisions. Making Complex Decisions. Learning from Observations. Learning with Neural Networks. Reinforcement Learning. Knowledge in Learning. Agents that Communicate. Practical Communication in English. Perception. Robotics.** For those interested in artificial intelligence.

Hardcover: 1132 pages

Publisher: Prentice Hall; 2nd edition (December 20, 2002)

ISBN: 0137903952

2.- Introduction to Artificial Intelligence : Second, Enlarged Edition

by [Philip C. Jackson](#)

Editorial Reviews

This comprehensive, easy-to-read survey of how machines (computers) can be made to act intelligently explores problem-solving methods, representation and models, game playing, automated understanding of natural languages, heuristic scene analysis, specific artificial intelligence accomplishments and other related topics. With 132 illustrations.

Great read, excellent price, March 8, 2004

I actually picked up this book at the discount bin at a local bookstore. I had always been interested in A.I research, and this deal was irresistible. However, I think this book is worth alot more, and provides more insight into the field than many of the current popular books on the subject.

This book basically goes into A.I research and leaves alot of the philosophical issues at a minimum. Basically you can look at this as a real text book about the subject of A.I. By my expirience, it isn't easy to find outside of the popular science market.

The topics that this book covers is extensive. **The first few chapters go into subjects like Game Theory, and the problem-state models of A.I. He also gives a very extensive overview of the construction of the human brain and its parallels to finite state machines. What I found particularly interesting was his coverage of many Turing Machines. Later, the author takes you into more rigorous examples dealing with problems of Theorem proving. And definitely one of the most interesting chapters was his coverage of natural languages.**

This is a must buy for anyone who wants to get their feet wet in the field of A.I. And with such a small price tag, you really cant lose.

Paperback: 512 pages

Publisher: Dover Publications; 2nd Enlrgd edition (June 1, 1985)

ISBN: 048624864X

3.- The Essence of Artificial Intelligence

by [Alison Cawsey](#)

Editorial Reviews

Book Info

Provides a concise and accessible introduction to the topic for students with no prior knowledge of AI. Features examples and a complete glossary. Paper. DLC: Artificial intelligence.

Product Description:

This is a practical, highly-accessible introduction to the state-of-the-art in artificial intelligence. This book demystifies artificial intelligence, making it concrete and transparent. **It covers knowledge representation, inference, expert systems, natural language processing, machine learning, neural networks, agents, robots, and more.** The book includes extensive self-test questions, case studies, figures, worked examples, sample algorithms and a complete glossary. For anyone interested in artificial intelligence; no prior background is required.

Paperback: 190 pages

Publisher: Prentice Hall PTR; 1st edition (January 15, 1998)

ISBN: 0135717795

**1.- Cognitive Neuroscience, Second Edition
by Michael S. Gazzaniga, Richard B. Ivry, George R. Mangun**

Editorial Reviews

From Book News, Inc.

Synthesizing the study of cognitive science, behavioral neurology, and behavioral neuroscience, this undergraduate textbook uses clinical case studies to humanize the scientific content. Chapters cover the history of the discipline, the cellular and molecular basis of cognition, the gross and functional anatomy, methodology, perception and encoding, selective attention and orientation, learning and memory, language and the brain, cerebral lateralization and specialization, the control of action, executive functions and frontal lobes, emotion, evolution, development and plasticity, and consciousness. A glossary is provided. Copyright © 2004 Book News, Inc., Portland, OR

Book Info

Dartmouth College, Hanover, NH. Textbook unifies cognitive psychology, behavioral neurology, and behavioral neuroscience for undergraduate students. Uses case studies to humanize the scientific content and colorful illustrations to convey the tools and methods cognitive neuroscientists use. Previous edition: c1998.

Book Description

With over four hundred new citations, *Cognitive Neuroscience, Second Edition*, embraces the latest findings in this cutting-edge field. A revised chapter two, "The Cellular and Molecular Basis of Cognition," introduces new analysis of the chemical systems that support cognition, outlines the modulation of neuronal transmission during development and disease, and increases coverage of the function of membrane receptors in neurochemistry. An entirely new chapter three, "Gross and Functional Anatomy of Cognition," provides a foundation for working through the functional analysis of cognitive systems in subsequent chapters. The Second Edition also includes extensive coverage of computational modeling, highlighting the ways in which modeling demonstrates the neural mechanisms of cognition.

Hardcover: 748 pages ; Dimensions (in inches): 1.19 x 11.16 x 8.72

Publisher: W. W. Norton & Company; 2 edition (January 1, 2002)

ISBN: 0393977773

2.- Patient-Based Approaches to Cognitive Neuroscience (Issues in Clinical and Cognitive Neuropsychology)

by [Martha J. Farah](#) (Editor), [Todd E. Feinberg](#) (Editor)

Editorial Reviews

Book Info

Univ. of Pennsylvania, Philadelphia. Abridged version of Behavioral Neurology and Neuropsychology, c1997. Reviews the patient-based approach to cognitive neuroscience and covers history, principles, and methods. For clinicians. Softcover. DNLM: Nervous System Diseases.

Product Description:

The cognitive disorders that follow brain damage are an important source of insight into the neural bases of human thought. Although cognitive neuroscience is sometimes equated with cognitive neuroimaging, the patient-based approach to cognitive neuroscience is responsible for most of what we now know about the brain systems underlying perception, attention, memory, language, and higher-order forms of thought including consciousness. This volume brings together state-of-the-art reviews of the patient-based approach to these and other central issues in cognitive neuroscience, written by leading authorities.

Part I covers the history, principles, and methods of patient-based neuroscience: lesion method, imaging, computational modeling, and anatomy. Part II covers perception and vision: sensory agnosias, disorders of body perception, attention and neglect, disorders of perception and awareness, and misidentification syndromes. Part III covers language: aphasia, language disorders in children, specific language impairments, developmental dyslexia, acquired reading disorders, and agraphia. Part IV covers memory: amnesia and semantic memory impairments. Part V covers higher cognitive functions: frontal lobes, callosal disconnection (split brain), skilled movement disorders, acalculia, dementia, delirium, and degenerative conditions including Alzheimer's disease, Parkinson's disease, and Huntington's disease.

Paperback: 425 pages

Publisher: Bradford Books (April 3, 2000)

ISBN: 0262561239

3.- Cognitive Neuroscience and Neuropsychology

by [Marie T. Banich](#)

Editorial Reviews

This text balances experimental and clinical perspectives with a survey of a variety of mental functions. In a conversational style, the author provides clear, accessible explanations of difficult concepts, making use of analogies and case studies to illustrate them. A consistent structure throughout each chapter defines a mental function and the role of each part or parts of the brain in that function, followed by a discussion of what neuropsychological syndromes say about the cognitive and neural organization of the mental function.

Chapter pedagogy includes an opening case study to pique student interest and preview chapter topics, plus an outline that provides a conceptual structure of material; special interest boxes that provide students a better feel for an **issue in neuropsychological**

research or an implication of neuropsychology in everyday life; summaries for review; boldface key terms; and a glossary at the end of the text.

New! Extensive coverage of the latest research in the field with over 600 new references.

New! A new chapter focuses on how neurons communicate.

New! Chapter outlines are presented in a bulleted format for a more accessible summary of key concepts.

New! Updated and expanded coverage of state-of-the art research techniques, in including MRI, optical imaging, and transcranial magnetic stimulation, as well as information on how these methods work and new findings based on them.

New! An extensively revised art program includes new illustrations and more color.

Hardcover: 636 pages

Publisher: Houghton Mifflin Company; 2nd edition (April 3, 2003)

ISBN: 0618122109

Anexo II

Criterios de acreditación para las carreras de Psicología

Perfil profesional y estructura curricular

Normas generales

- El plan de estudios y los respectivos programas deben ser consistentes con la declaración de principios y objetivos de la unidad responsable de la carrera y con las competencias mínimas que se definen más adelante.
- El Plan de estudios y los respectivos programas deben ser coherentes y coordinados, y ser de público conocimiento de los estudiantes.
- La carrera debe cumplir con la definición del psicólogo que a continuación se señala y reservar la especialización para la formación de postgrado.

Para los efectos del perfil profesional que la unidad defina, deben tenerse presentes las siguientes definiciones:

- Que el psicólogo es un profesional generalista, de formación científica, cuyas competencias son el diagnóstico, la evaluación y la intervención en procesos que involucran a personas, grupos y organizaciones, con capacidad de discernimiento ético y respeto por la naturaleza humana en el ejercicio de la profesión.
- Que, para los efectos de este documento, se entenderá por psicólogo a la persona que ha cursado y aprobado un currículo tendiente a la licenciatura y título profesional de psicólogo, el que considera el perfil profesional mínimo definido en el este documento.

El perfil profesional que defina la unidad debe contener, al menos, las siguientes habilidades y competencias propias del psicólogo:

- Diagnosticar, planificar, desarrollar y evaluar diversos procesos y programas en las áreas de la Psicología: Educacional, Organizacional, clínica y otros campos de acción en la realidad social.
- Definir, aplicar y evaluar estrategias de intervención para atender necesidades preventivas, terapéuticas y de desarrollo de la conducta en individuos, grupos y organizaciones, a partir de una base teórica sólida.
- Diseñar y realizar actividades de investigación científica en la disciplina.
- Asimismo, el perfil debe considerar el desarrollo de capacidades generales propias de un profesional universitario, entre otros: el pensamiento crítico, el autoaprendizaje, la educación continua, la formación integral y el discernimiento ético.

Organización del plan de estudios:

- Los programas de estudio de la carrera, deben integrar actividades teóricas y prácticas que faciliten la experiencia de los alumnos en diversos contextos sociales y promover su capacidad para integrar las disciplinas estudiadas.
- La carrera debe contemplar tres áreas de formación, sin perjuicio de la flexibilidad e integración curricular que determine cada Unidad:
 - Área Básica. Corresponde al tratamiento de los fundamentos básicos de la conducta humana: psicológicos, biológicos y socioculturales, y una formación en metodología de la investigación.
 - Área Profesional. Corresponde a la formación en áreas de aplicación profesional en distintos campos de ejercicio de la Psicología, incluyendo las actividades de titulación.
 - Área de Formación general o complementaria. Compuesta por asignaturas y actividades curriculares de otras disciplinas tendientes a la formación integral.
- Para el proceso de titulación el estudiante de Psicología debe realizar:
 - Una práctica profesional supervisada y evaluada de acuerdo a los objetivos definidos, cuya duración debe ser de a lo menos un semestre.
 - Una instancia de evaluación final.

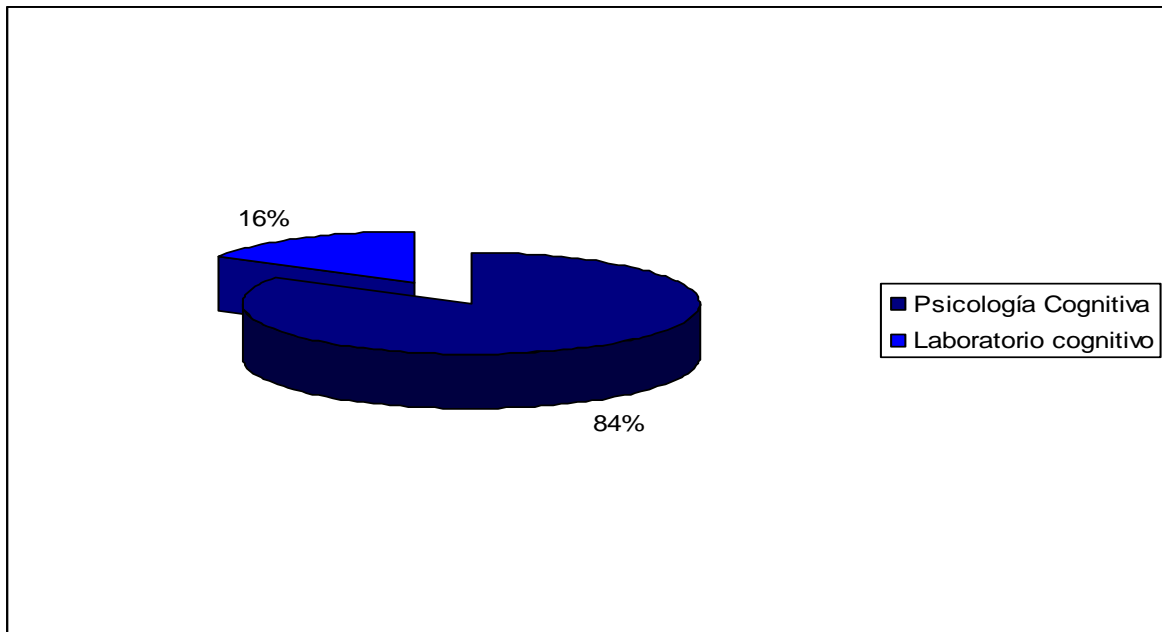
La unidad responsable de la carrera debe contar con mecanismos o disposiciones que permitan evaluar periódicamente el plan de estudios y los cursos ofrecidos, proponer modificaciones y mantener actualizado el currículo.

Fuente: Comité nacional de acreditación del pregrado (CENAP)

Anexo III

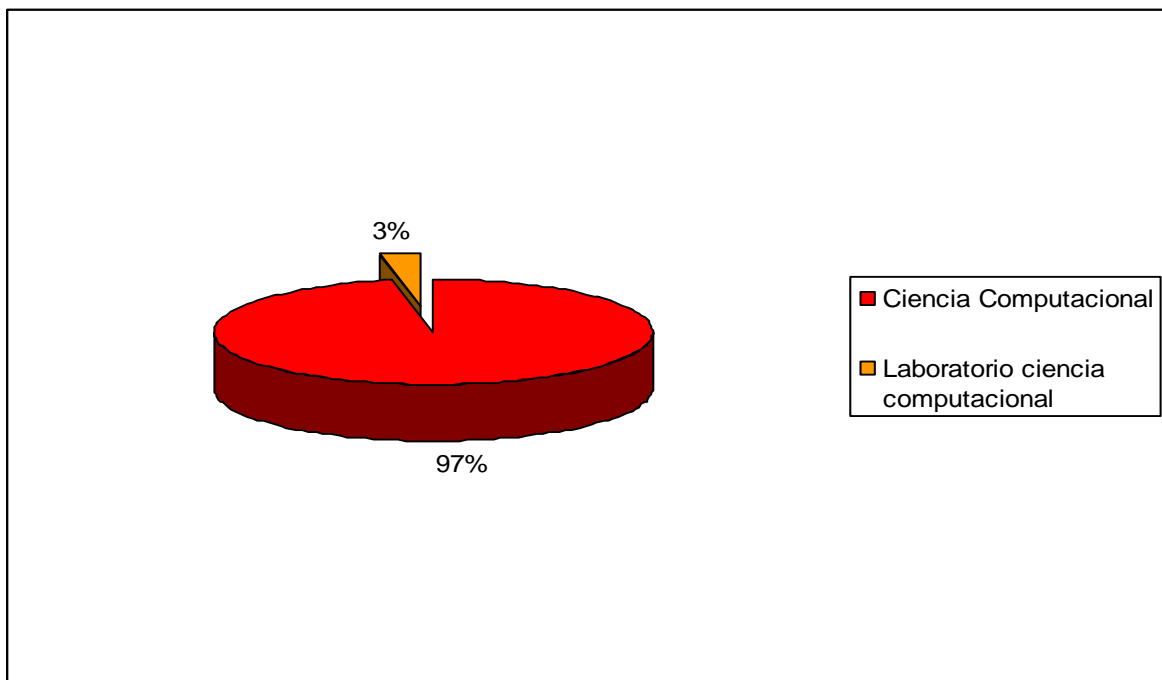
Detalle de Laboratorios por área en Ciencia Cognitiva

Porcentaje de laboratorios en Psicología cognitiva



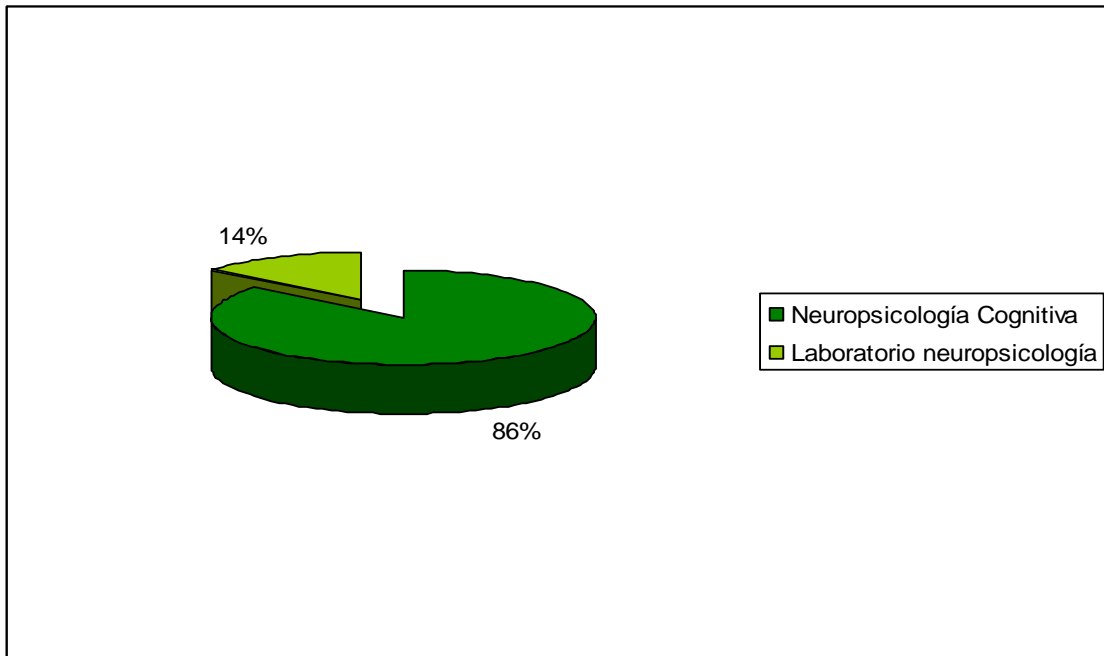
Elaboración propia

Porcentaje de laboratorios en Ciencia Computacional



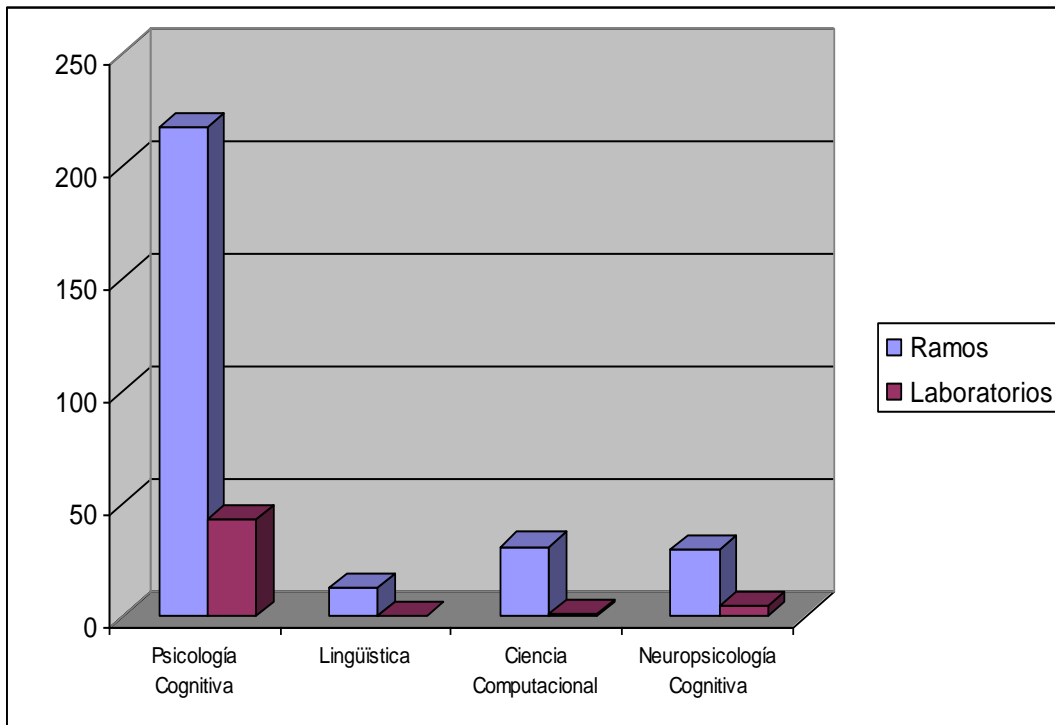
Elaboración propia

Porcentaje de laboratorios en Neuropsicología cognitiva



Elaboración propia

Comparación de Ramos y laboratorios por área



Elaboración propia

Anexo IV

Instituciones revisadas en el estudio

FACULTADES DE PSICOLOGÍA EN UNIVERSIDADES NORTEAMERICANAS	
Alabama, University of, at Birmingham Birmingham, AL	http://www.psy.uab.edu/
Alabama, University of, in Huntsville Huntsville, AL	http://www.uah.edu/colleges/liberal/psychology/
Alabama, University of Tuscaloosa, AL	http://psychology.ua.edu/
Alabama, University of, at Mobile Social and Behavioral Sciences. Mobile AL	http://www.umobile.edu/acad/socialscience.asp
Alabama A&M University Huntsville, AL	http://www.aamu.edu/BehavioralScience/
Alabama State University Social Work only. Montgomery, AL	http://www.alasu.edu/asu/ASUWEB.aspx?ContentID=112&SubUnitID=42
Athens State University Athens, AL	http://www.athens.edu/behavioralsciences/
Auburn University Auburn University AL	http://www.auburn.edu/academic/liberal_arts/psychology/index.html
Auburn University Montgomery Montgomery, AL	http://sciences.aum.edu/pg/welcome.html
Birmingham-Southern College Birmingham, AL	http://www.bsc.edu/academics/social/index.htm
Faulkner University Birmingham, AL	http://www.faulkner.edu/academics/arts_science/behavioral_science/default.cfm
Huntingdon College Birmingham, AL	http://www.huntingdon.edu/academic_programs/psychology
Jacksonville State University Jacksonville, AL	http://www.jsu.edu/depart/psychology/welcome.html
Judson College Marion, AL	http://home.judson.edu/academic/divisions/socsci/psych/psych.html
Miles College Social Work only. Fairfield, AL	http://www.miles.edu/Miles_SBS/SBSHomePage.htm
Montevallo, University of Department of Behavioral and Social Sciences. Montevallo, AL	http://www.montevallo.edu/bss/
North Alabama Florence, AL	http://www2.una.edu/psychology/index.html
Oakwood College Huntsville, AL	http://www.oakwood.edu/psychology/
Samford University Birmingham, AL	http://www.samford.edu/schools/artsci/psychology/index.htm
South Alabama, University of Mobile, AL	http://www.southalabama.edu/psychology/
Southern Christian University Human Development major. Montgomery, AL	http://www.southernchristian.edu/
Spring Hill College Montgomery, AL	http://www.shc.edu/academics/undergrad/socialSciences/concentrations/
Talladega College Talladega, AL	http://www.talladega.edu/academics/deptofpsych.htm
Troy State University Dothan Dothan, AL	http://www.tsud.edu/community/Transfer_Art_2003-04/Psychology_(03-04).htm
Troy State University, Florida & Western Region Fort Walton Beach, FL	http://www.tsufl.edu/handbook/U_psychology.htm
Troy State University, Phenix City Phenix City AL	http://www.tsupc.edu/ug_psychology.htm
Tuskegee University Tuskegee, AL	http://www.tuskegee.edu/Global/story.asp?S=1088051
West Alabama, University of (in association with Columbia Southern University) Orange Beach, AL	http://www.colsouth.edu/uwa/programs/mscepsyc.html
Alaska Pacific University Anchorage, AK	http://www.alaskapacific.edu/undergraduate/psychology/content.htm

University of Alaska Anchorage Anchorage, AK	http://webserver.cts.uaa.alaska.edu/psych/
University of Alaska Fairbanks Fairbanks, AK	http://www.uaf.edu/psych/
Sheldon Jackson College PSY course descriptions. Sitka, AK	http://www.sheldonjackson.edu/725.cfm
Arizona, University of Tucson, AZ	http://psychology.arizona.edu/
Arizona State University Tempe, AZ	http://psych.la.asu.edu/
Arizona State University East 30 miles from Phoenix, AZ	http://www.east.asu.edu/ecollege/appliedpsych/
Arizona State University West Phoenix, AZ	http://www.west.asu.edu/sbs/
Arizona Western College Yuma, AZ	http://www3.azwestern.edu/psy/
Glendale Community College Glendale, AZ	http://www.gc.maricopa.edu/Psyc/
Northcentral University Prescott, AZ	http://www.ncu.edu/university_information/degree_program_details.asp?degree_program_id=21
Northern Arizona University Flagstaff, AZ	http://www.nau.edu/~psych/naupsy.html
Prescott College Prescott, AZ	http://www.prescott.edu/
Arkansas, University of Fayetteville, AR	http://www.uark.edu/depts/psyc/
Arkansas, University of, at Fort Smith Fort Smith, AR	http://www.uafortsmith.edu/Arts/Psychology
Arkansas, University of, at Little Rock Little Rock, AR	http://www.ualr.edu/~psycinfo/index2.html
Arkansas, University of, at Monticello Monticello, AR	http://www.uamont.edu/Social_and_Behavioral/sb/
Arkansas, University of, at Pine Bluff Pine Bluff, AR	http://www.uapb.edu/academics/social_behavioral_sciences/psychology_program.html
Arkansas State University Jonesboro, AR	http://www.clt.astate.edu/psycoun/
Arkansas Tech University Russellville, AR	http://lfa.atu.edu/behavsci/
Central Arkansas, University of Conway, AR	http://coe.uca.edu/psych/index.htm
Harding University Searcy, AR	http://www.harding.edu/psychology/
Henderson State University Arkadelphia, AR	http://www.hsu.edu/dept/psy/index.html
Hendrix College Conway, AR	http://www.hendrix.edu/Psychology/
John Brown University Siloam Springs, AR	http://www.jbu.edu/academics/sbs/psych/index.asp/
Lyon College Batesville, AR	http://www.lyon.edu/webdata/groups/psychology/
Ozarks, University of the Clarksville, AR	http://www.ozarks.edu/academics/sam/psychology.html/
Southern Arkansas University Magnolia, AR	http://peace.saumag.edu/
Williams Baptist College Walnut Ridge AR	http://www.wbcoll.edu/departments/psychology.php/
Alliant International University California School of Professional Psychology, Six California locations	http://www.alliant.edu/cas/psych/index.htm
Alfred Adler Institute of San Francisco Lots of great online articles about Adler.	http://ourworld.compuserve.com/homepages/hstein/
Antioch University at Los Angeles Master of Arts in Clinical Psychology. Los Angeles CA	http://www.antiochla.edu/programs_map.shtml/
Azusa Pacific University Azusa, CA	http://www.apu.edu/educabs/undergraduate/psychology/
Biola University Rosemead School of Psychology. La Mirada, CA	http://www.rosemead.edu/
California Baptist University Riverside, CA	http://www.calbaptist.edu/behavioral_sci/index.htm
California Institute of Integral Studies East-West Psychology. San Francisco, CA	http://www.ciis.edu/
California Institute of Technology Course listing.	http://pr.caltech.edu/catalog/courses/listing/psy.html

Pasadena, CA	
California Lutheran University Thousand Oaks, CA	http://www.clunet.edu/Academic_Programs/Departments/Psychology/psychology/
California Polytechnic State University San Luis Obispo, CA	http://www.calpoly.edu/~psychhd/
California School of Professional Psychology six California locations	http://www.cspp.edu/
California School of Professional Psychology	http://www.cspp.edu/cspp/
California State Polytechnic University, Pomona Pomona, CA	http://www.class.csupomona.edu/bhs/bhs-psy.html
California State University at Bakersfield	http://www.csub.edu/psychology/
California State University at Channel Islands	http://psych.csuci.edu/
California State University at Chico	http://www.csuchico.edu/psy/
California State University at Dominguez Hills	http://www.psychology.csudh.edu/
California State University at Fresno	http://www.csufresno.edu/psych/
California State University at Fullerton	http://psych.fullerton.edu/
California State University at Hayward	http://www.sci.csu Hayward.edu/psychology/
California State University at Long Beach	http://www.csulb.edu/~psych/
California State University at Los Angeles	http://web.calstatela.edu/academic/psych/html/dept menu.htm
California State University at Northridge	http://www.csun.edu/~hfpsy004/
California State University at Sacramento	http://www.csus.edu/psyc/
California State University at San Bernardino	http://psychology.csusb.edu/index10a.htm/
California State University at San Marcos	http://coyote.csusm.edu/A_S/Psychology_Program/
California State University at Stanislaus	http://psyc.csustan.edu/
California, University of, Berkeley	http://ls.berkeley.edu/dept/psychology/
California, University of, at Davis	http://psychology.ucdavis.edu/
California, University of, at Irvine	http://www.psychology.uci.edu/
California, University of, at Los Angeles (UCLA)	http://www.psych.ucla.edu/
California, State University of, at Monterey Bay Course listing.	http://csumb.edu/academic/catalog/courses/psy.html
California, University of, at Riverside	http://www.psych.ucr.edu/
California, University of, at San Diego	http://psy.ucsd.edu/
California, University of, at Santa Barbara	http://www.psych.ucsb.edu/
California, University of, at Santa Cruz	http://psych.ucsc.edu/
California, University of, at Merced	http://www.ucmerced.edu/
California, University of, at Riverside	http://www.ucr.edu/
California, University of, at San Francisco	http://www.ucsf.edu/
Chapman University Orange, CA	http://www.chapman.edu/wilkinson/psych/
Charles R. Drew University of Medicine & Science Los Angeles, CA	http://www.cdrewu.edu/com2002/departments/psychiatry/clinical.asp
Christian Heritage College El Cajon	http://www.christianheritage.edu/academics/departments/psychology/index.htm
Claremont Graduate University School of Behavioral and Organizational Sciences. Claremont, CA	http://www.cgu.edu/sbos/index.html
Claremont McKenna College Claremont, CA	http://psych.academic.claremontmckenna.edu/
Dominican University of California San Rafael, CA	http://www.dominican.edu/academics/Department_Psychology.cfm

Fielding Graduate Institute Santa Barbara, CA	http://www.fielding.edu/psy/index.htm
Fuller Theological Seminary Pasadena CA	http://www.fuller.edu/sop
Golden Gate University Course listings. San Francisco, CA	http://www.ggu.edu/schedule/descriptions.do?subject=PSYCH
Holy Names College List of courses. Oakland, CA	http://www.hnc.edu/academics/psychology.html
Humboldt State University Arcata, CA	http://www.humboldt.edu/~psych/psych.html
Humboldt State University Department of Child Development	http://sorrel.humboldt.edu/~chld/
Institute of Transpersonal Psychology Palo Alto, CA	http://www.itp.edu/
John F. Kennedy University Graduate School of Professional Psychology. Pleasant Hill CA	http://www.jfku.edu/psych/
Judaism, University of Description of major. Bel-Air, CA	http://www.uj.edu/content/ContentUnit.asp?CID=721&u=624&t=0
La Sierra University Riverside CA	http://www.lasierra.edu/psychology/
La Verne, University of La Verne, CA	http://www.ulv.edu/catalog/programs/psy/
Loma Linda University Loma Linda, CA	http://www.llu.edu/llu/grad/psychology/index.html
Loyola Marymount University Los Angeles CA	http://bellarmine.lmu.edu/psychology/
Mills College Oakland CA	http://www.mills.edu/PSYC/psyc.home.html
Modesto Junior College Modesto CA	http://virtual.yosemite.cc.ca.us/psych/
Mount St.Mary's College Los Angeles, CA	http://www.msmc.la.edu/psychology/default.htm
National University San Diego, CA	http://www3.nu.edu/schools/SOE/DOSCP/default.html
New College of California Graduate Program in Psychology. San Francisco, CA	http://www.newcollege.edu/psychology/Default.htm
Notre Dame de Namur University Graduate program. Belmont CA	http://www.ndnu.edu/graduate-programs/mft-macp/index.html
Occidental College Los Angeles, CA	http://www.oxy.edu/departments/psych/index.htm
Pacific, University of the Stockton, CA	http://www.uop.edu/cop/psychology/
Pacific Graduate School of Psychology Palo Alto, CA	http://www.pgsp.edu/
Pacific Union College Angwin, CA	http://www.puc.edu/Departments/Behavioral_Science/
Pacific Oaks College Human Development Dept. Pasadena CA	http://www.pacificoaks.edu/pages/115.asp
Pacifica Graduate Institute Santa Barbara, CA	http://pacifica.edu/dp_psychology.html
Patten University Alameda, CA	http://www.patten.edu/AcademicPrograms_DASBA_Psychology.htm
Pepperdine University	http://seaver.pepperdine.edu/socialscience/academics/psycmaj.htm
Point Loma Nazarene University San Diego CA	http://www.ptloma.edu/Psychology/index.htm
Pomona College Claremont, CA	http://psychology.pomona.edu/
Redlands, University of Redlands, CA	http://www.redlands.edu/x223.xml
San Diego State University	http://www.psychology.sdsu.edu/
San Francisco, University of	http://artsci.usfca.edu/servlet/DeptWelcome?deptID=18
San Francisco State University	http://www.sfsu.edu/~puboff/programs/undergrad/psych.htm
San Jose State University	http://www.psych.sjsu.edu/
Santa Clara University Santa Clara, CA	http://www.scu.edu/SCU/Departments/Psychology/

Saybrook Graduate School and Research Center San Francisco, CA	http://www.saybrook.edu/
Scripps College Claremont, CA	http://www.scrippscol.edu/~dept/psych/www/index.htm
Sonoma State University Rohnert Park CA	http://www.sonoma.edu/psychology/
Southern California, University of Los Angeles	http://www.usc.edu/schools/college/academics/psychology.html
Saint Mary's College of California Moraga, CA, regional centers in Moraga/Rheem, Oakland, Fairfield, San Jose and Sacramento	http://www.stmarys-ca.edu/academics/undergraduate/programs_by_name/academics.php?Department=Psychology
Stanford University Palo Alto, CA	http://www-psych.stanford.edu/
Vanguard University of Southern California Costa Mesa, CA	http://www.vanguard.edu/psychology/
Westmont College Santa Barbara	http://www.westmont.edu/_academics/pages/departments/psychology/pages/
Whittier College Whittier, CA	http://www.whittier.edu/psychology/psych.htm
Woodbury University Burbank, CA	http://www.woodbury.edu/nav3Left.aspx?pgID=1040
Adams State College Alamosa, CO	http://psych.adams.edu/
Colorado Christian University Psychology major. Lakewood, CO	http://www.ccu.edu/undergrad/majors/psychology.htm
Colorado College Colorado Springs, CO	http://www.cc.colorado.edu/Dept/PY/
Colorado State University Fort Collins, CO	http://www.colostate.edu/Depts/Psychology/
Colorado State University at Pueblo Pueblo, CO	http://chass.colostate-pueblo.edu/psych/
Colorado, University of, at Boulder Boulder, CO	http://psych-www.colorado.edu/
Colorado, University of, at Colorado Springs Colorado Springs, CO	http://www.uccs.edu/~psycholo/index.html
Colorado, University of, at Denver Psychology major. Denver, CO	http://thunder1.cudenver.edu/psych/bapsych.htm
Colorado, University of, Health Sciences Center Division of Psychology. Denver, CO	http://www.uchsc.edu/sm/psych/divpsy/faculty.htm
Denver, University of Denver, CO	http://www.du.edu/psychology
Denver, University of Graduate School of Professional Psychology Denver, CO	http://www.du.edu/gsp/
Fort Lewis College Fort Lewis, CO	http://www.fortlewis.edu/acad-aff/educ/psych/index.html
Fort Lewis College Durango, CO	http://www.fortlewis.edu/academics/programs/psychology.asp
Mesa State College Grand Junction, CO	http://www.mesastate.edu/schools/shss/sbs/psy/psy.htm
Metropolitan State College of Denver Denver, CO	http://www.mscd.edu/~psych/
Naropa Institute Contemplative Psychology. Boulder, CO	http://www.naropa.edu/
Northern Colorado, University of Division of Professional Psychology	http://www.unco.edu/coe/ppsyc/coun_program.htm
Regis University Denver, CO	http://www.regis.edu/regis.asp?sctn=apg&p1=ut&p2=py
Western State College of Colorado Gunnison, CO	http://www.western.edu/psychology/
Central Connecticut State University New Britain, CT	http://www.psychology.ccsu.edu/
Connecticut College New London, CT	http://camel.conncoll.edu/ccacad/psychology/

Connecticut, University of Storrs, CT	http://www.ucc.uconn.edu/~wwwpsyc/
Connecticut, University of Educational Psychology	http://www.epsy.uconn.edu/
Eastern Connecticut State University Willimantic, CT	http://www.ecsu.ctstateu.edu/depts/psych/psy.htm
Fairfield University Fairfield, CT	http://www.fairfield.edu/academic/artsci/majors/psycholo/ugpyhome.htm
Hartford, University of West Hartford, CT	http://uhaweb.hartford.edu/psych/
New Haven, University of West Haven, CT	http://www.newhaven.edu/departments/psych.htm
Quinnipiac College Description of Major. Hamden, CT	http://www.quinnipiac.edu/
Sacred Heart University Fairfield, CT	http://psychology.sacredheart.edu/
Southern Connecticut State University New Haven, CT	http://www.southernct.edu/undergrad/schas/PSY/
St. Joseph College West Hartford, CT	http://www.sjc.edu/content.cfm/pageid/2951/
Teikyo Post University Waterbury, CT	http://www.teikyopost.edu/academics/programs/psychology.shtml
Trinity College Hartford, CT	http://www.trincoll.edu/depts/psyc/
Wesleyan University Middletown, CT	http://www.wesleyan.edu/psyc/
Western Connecticut State University Danbury, CT	http://www.wcsu.edu/psychology/program.asp
Yale University New Haven, CT	http://www.yale.edu/psychology/
Delaware, University of Newark, DE	http://www.psych.udel.edu/
Delaware State University North Cover, DE	http://www.dsc.edu/schools/arts_sciences/psych/index.php
Wesley College Dover, DE	http://www.wesley.edu/academics/liberal_arts/psychology.html
Wilmington College Wilmington, also New Castle, Dover, Georgetown, DE	http://www.wilmcoll.edu/behavioralscience/psychology.html
American University, The Washington D.C.	http://www.american.edu/academic.depts/cas/psych/psychology.html
Catholic University of America Washington, DC	http://psychology.cua.edu/
District of Columbia, University of Washington, DC	http://www.universityofdc.org/master.php?sid=12
Gallaudet University Washington, DC	http://depts.gallaudet.edu/psychology/
George Washington University Washington, DC	http://www.gwu.edu/~psycdept/
George Washington University Department of Counseling/Human and Organizational Studies. Washington, DC	http://www.gwu.edu/~chaos/
Georgetown University Washington, DC	http://www.georgetown.edu/departments/psychology/
George Washington University Washington, DC	http://www.gwu.edu/
George Washington University at Mount Vernon	http://www.mvc.gwu.edu/
Howard University Washington, DC	http://wwwFOUNDERS.howard.edu/psychology-dept/index.htm
Southeastern University Child Development associate degree. Washington, DC	http://www.seu.edu/gen/academic/childdev/default.htm
Trinity College Washington, DC	http://www.trinitydc.edu/academics/catalog_98/psych.html
Barry University Miami Shores, FL	http://www.barry.edu/psychology/Default.htm
Bethune-Cookman College Daytona Beach, FL	http://www.cookman.edu/SocialSciences/Psychology/Default.html
Carlos Albizu University-Miami Miami, FL	http://sju.albizu.edu/student/stuAcadConc.asp?cboConc=20

Central Florida, University of Orlando, FL	http://pegasus.cc.ucf.edu/~psych/
Eckerd College St. Petersburg, FL	http://www.eckerd.edu/academics/bes/psy/
Embry-Riddle Aeronautical University Human Factors. Daytona Beach, FL	http://www.erau.edu/db/degrees/b-humanfactors.html
Flagler College St. Augustine, FL	http://www.flagler.edu/academics/d_sbs.html
Florida, University of Gainesville, FL	http://www.psych.ufl.edu/
Florida Agricultural & Mechanical University Tallahassee, FL	http://www.famu.edu/acad/colleges/cas/psychology/
Florida Atlantic University Boca Raton, FL	http://www.science.fau.edu/psychology/
Florida Gulf Coast University Fort Myers, FL	http://www.fgcu.edu/cas/Psychology/
Florida Institute of Technology Melbourne, FL	http://www.fit.edu/AcadRes/psych/
Florida International University Miami, FL	http://w3.fiu.edu/psych/default.htm
Florida Southern College Lakeland, FL	http://www.flsouthern.edu/psy/index.htm
Florida State University: Panama City Campus Panama City, FL	http://www.pc.fsu.edu/index.cfm?P1=Undergraduate&P2=48
Florida State University Tallahassee, FL	http://www.psy.fsu.edu/
Jacksonville University Jacksonville, FL	http://www.ju.edu/academics/undergrad_psychology.asp
Miami, University of Miami, FL	http://www.psy.miami.edu/
North Florida, University of Jacksonville, FL	http://www.unf.edu/coas/psychology/
Nova Southeastern University Center for Psychological Studies. Ft. Lauderdale, FL	http://www.cps.nova.edu/
Palm Beach Atlantic College Education & Behavioral Studies. West Palm Beach, FL	http://www.pba.edu/Academic/welcome.cfm?SchoolID=4
Rollins College Winter Park, FL	http://www.rollins.edu/studentrecords/Curriculum/psychology.html
Saint Leo College Saint Leo, FL	http://www.saintleo.edu/SaintLeo/Templates/Inner.aspx?durki=521&pid=521
South Florida, University of Tampa, FL	http://www.cas.usf.edu/psychology/index.html
Southeastern College Lakeland, FL	http://www.secollege.edu/Majors/Psychology.htm
Stetson University DeLand, FL	http://www.stetson.edu/artsci/psychology/
Tampa, University of	http://www.ut.edu/academics/undergraduate/areasofstudy/psychology.html
Troy State University-Florida Region Fort Walton Beach, FL	http://www.warner.edu/academics/socialscience/psych.asp
Warner Southern College Psychology Major courses. Lake Wales, FL	http://uwf.edu/psych/about/
West Florida, University of Pensacola, FL	
Agnes Scott College Decatur, GA	http://www.scottlan.edu/academics/p_psychology.asp
Albany State University Albany, GA	http://asuweb.asurams.edu/artsci/P,S,&SW/index.html
Armstrong Atlantic State University Savannah, GA	http://www.psych.armstrong.edu/
Augusta State University Augusta, GA	http://www.aug.edu/psychology/
Berry College Psychology Major FAQ. Mount Berry, GA	http://www.berry.edu/academics/majors.asp?major=psychology
Brenau University Gainesville, GA	http://www.brenau.edu/shs/psychology/
Clark Atlanta University Atlanta, GA	http://www.cau.edu/acad_prog/psychology/psy_right.html

Clayton College & State University Morrow, GA	http://a-s.clayton.edu/psyc&hmsv/default.html
Columbus State University Columbus GA	http://psysoc.colstate.edu/
Covenant College Lookout Mountain, GA	http://www.covenant.edu/academics/trad/programs/psychology/
Dalton State College Decatur, GA	http://www.daltonstate.edu/sosci/division/programs/psychology.htm
Emmanuel College Franklin Springs, GA	http://www.emmanuelcollege.edu/academic/psychology/
Emory University Atlanta, GA	http://www.emory.edu/PSYCH/
Fort Valley State University Fort Valley, GA	http://www.fvsu.edu/coase/behavior_sciences.asp
Georgia College & State University Milledgeville, GA	http://www.gcsu.edu/acad_affairs/coll_artsci/psy/
Georgia Institute of Technology Atlanta, GA	http://www.gatech.edu/psychology/
Georgia Southern University Statesboro, GA	http://www2.gasou.edu/psychology/
Georgia Southwestern State University Americus, GA	http://www.gsw.edu/~psych/
Georgia State University Atlanta, GA	http://www.gsu.edu/~wwwpsy/index.htm
Georgia, University of Athens, GA	http://www.uga.edu/psychology/
Kennesaw State University	http://www.kennesaw.edu/psychology/index.htm
LaGrange College LaGrange, GA	http://www.lagrange.edu/
Mercer University Macon, GA	http://www.mercer.edu/psychology/Psychology.htm
Middle Georgia College Cochran, GA	http://www.mgc.peachnet.edu/
Morehouse College Atlanta, GA	http://www.morehouse.edu/academics/scimat/psychology/
North Georgia College & State University Dahlonega, GA	http://www.ngcsu.edu/Academic/Arts_Let/Psych/psychology/index.html
Oglethorpe University Atlanta, GA	
Paine College Augusta, GA	http://www.paine.edu/SOCIAL%20SCIENCES.htm
Piedmont College Demorest, GA	http://www.piedmont.edu/psy/index.html
Reinhardt College Psych Major Description. Waleska, GA	http://www.reinhardt.edu/
Savannah State University Faculty page. Savannah, GA	http://www.savstate.edu/class/Behav/faculty.htm
Shorter College Rome, GA	http://www.shorter.edu/academics/ac_schools_deptpsych.asp
Spelman College Atlanta, GA	http://www.spelman.edu/psychology/index.html
Thomas University Thomasville, GA	http://www.thomasu.edu/psych.htm
Valdosta State University Description of major. Valdosta, GA	http://chiron.valdosta.edu/dbrihl/PsychUndergradHandout.html
Wesleyan College Macon, GA	http://www.wesleyancollege.edu/academics/departments/psychology/index.html
West Georgia, State University of Carrollton, GA	http://www.westga.edu/~psydept/
Brigham Young University-Hawaii Laie, HI	http://w3.byuh.edu/studentlife/scholarship/psychology.htm
Chaminade University Psychology program description. Honolulu, HI	http://www.chaminade.edu/catalog/pdf/BehavioralSciences.pdf
Hawaii Pacific University Psychology program description. Honolulu, HI	http://web1.hpu.edu/images/factSheet_Psychology_Oct2002.pdf
Hawaii, University of, at Hilo Hilo, HI	http://www.uhh.hawaii.edu/academics/cas/socsci/psychology.php

Hawaii, University of Honolulu and Manoa, HI	http://www.hawaii.edu/psychology/
Albertson College of Idaho Caldwell, ID	http://www.albertson.edu/psychology/
Boise State University Boise, ID	http://psych.boisestate.edu/
Brigham Young University-Idaho Rexburg, ID	http://www.byui.edu/Psychology/
Idaho, University of Moscow, ID	http://www.class.uidaho.edu/psych/
Idaho State University Pocatello, ID	http://www.isu.edu/departments/psych/
Lewis-Clark State College Lewiston, ID	http://www.lcsc.edu/psychology/
Northwest Nazarene College Nampa, ID	http://www.nnu.edu/academics/schools/psychologyandsociology/index.html
Adler School of Professional Psychology Chicago, IL	http://www.adler.edu/
Augustana College at Illinois Rock Island IL	http://www.augustana.edu/academ/psychology/Index.htm
Aurora University Aurora, IL	http://www.aurora.edu/cas/psych/index.htm
Barat College of DePaul University Psychology Program. Chicago, IL	http://barat.depaul.edu/acad_under/psychology.asp
Benedictine University Lisle, IL	http://www.ben.edu/programs/arts_sciences/psychology.asp
Blackburn College Carlinville, IL	http://www.blackburn.edu/psychology.asp
Bradley University Peoria, IL	http://www.bradley.edu/academics/las/psy/index.html
Chicago, University of Chicago, IL	http://psychology.uchicago.edu/
Chicago School of Professional Psychology Chicago, IL	http://www.csopp.edu/
Chicago State University Chicago, IL	http://www.csu.edu/Psychology/
Concordia University-River Forest River Forest, IL	http://www.curf.edu/academics/college_of_arts_and_sciences/departments/psychology/index.asp
DePaul University Chicago IL	http://condor.depaul.edu/~psych/
Dominican University Psych Major. Chicago, IL	http://www.dom.edu/rcas/majors.asp?program_id=1&schnav_id=2109&tschnav_id=1025
DuPage College of Chicago IL	http://www.cod.edu/dept/psych/
Eastern Illinois University Charleston, IL	http://www.eiu.edu/~psych/
Elmhurst College Elmhurst, IL	http://elmhurst.edu/psychology/
Erikson Institute Graduate School in Child Development. Chicago, IL	http://www.erikson.edu/
Eureka College Eureka, IL	http://www.eureka.edu/emp/dalfiume/psychologyindex.htm
Greenville College Greenville, IL	http://www.greenville.edu/academics/departments/psychology/psy-rel.shtml
Illinois College Jacksonville, IL	http://www.ic.edu/AcademicDepartments/psych.htm
Illinois Institute of Technology Chicago, IL	http://www.iit.edu/~psych/
Illinois State University Normal, IL	http://www.cas.ilstu.edu/psychology/index.html
Illinois, University of, at Chicago Chicago, IL	http://www.uic.edu/depts/psch/
Illinois, University of, at Springfield Springfield, IL	http://www.uis.edu/psychology/index.html
Illinois, University of, at Urbana-Champaign Champaign, IL	http://stat.psych.uiuc.edu/
Illinois Wesleyan University Bloomington, IL	http://titan.iwu.edu/~psych/
Judson College Psych course list. Elgin, IL	http://acadinfo.judsoncollege.edu/cgi-bin/public/crslist.cgi?dept=PSY%20&schd=schd&cat=UG*&sess=SPR&yr=2004&prog=UNDG

Kendall College Human Services Degree. Evanston, IL	http://www.kendall.edu/human_services_degree.html
Knox College Galesburg, IL	http://www.knox.edu/psychology.xml
Lake Forest College Lake Forest, IL	http://www.lfc.edu/academics/newcatalog/index.php?DeptID=PSYC&page=intro
Lewis University Romeoville, IL	http://www.lewisu.edu/academics/psych/
Loyola University Chicago Chicago, IL	http://www.luc.edu/psychology/
McKendree College Lebanon, IL	http://faculty.mckendree.edu/tami_eggleston/psychology_dept_.htm
McMurray College Jacksonville, IL	http://www.mac.edu/academics/psychology.html
Midwestern University Clinical Psychology Program. Downers Grove, IL	http://www.midwestern.edu/il-psych/
Millikin University Decatur, IL	http://www.millikin.edu/behavioralscience/
Monmouth College Monmouth, IL	http://department.monm.edu/psychology/default.htm
North Central College Naperville, IL	http://www.noctrl.edu/academics/departments/psychology/department_site/psychome.htm
North Park University Chicago, IL	http://www.northpark.edu/acad/psychology/
Northeastern Illinois University Chicago, IL	http://orion.neiu.edu/~deptpsyc/
Northern Illinois University DeKalb, IL	http://www3.niu.edu/psychology/
Northwestern University Evanston IL	http://www.wcas.northwestern.edu/psych/
Quincy University Quincy, IL	http://www.quincy.edu/colleges/programs/psychology/
Rockford College Psychology Program Overview. Rockford, IL	http://www.rockford.edu/about/Psychology.aspx
Roosevelt University Chicago, IL	http://www.roosevelt.edu/cas/sp/default.htm
Rush University Chicago, IL	http://www.rush.edu/rumc/page-R11711.html
Saint Xavier University Chicago, Orland IL	http://www.sxu.edu/psychology/
School of the Art Institute of Chicago MA in Art Therapy. Chicago, IL	http://www.artic.edu/saic/programs/degrees/graduate/maat.html
Southern Illinois University at Carbondale Carbondale, IL	http://www.siu.edu/~psyc/
Southern Illinois University at Edwardsville Edwardsville, IL	http://www.sie.edu/EDUCATION/psychology/index.html
Trinity Christian College Palos Heights, IL	http://www.trnty.edu/depts/psychology/
Trinity International University Deerfield IL	http://www.tiu.edu/psychology/
St.Francis, University of Joliet, IL	http://www.stfrancis.edu/ss/deptprograms.html
Western Illinois University Macomb, IL	http://www.wiu.edu/users/mipsy/PsychDeptDesc.html
Wheaton College Wheaton, IL	http://www.wheaton.edu/psychology/undergrad/overview/index.html
Anderson University Anderson, IN	http://www.anderson.edu/academics/psyc/index.html
Ball State University Muncie IN	http://www.bsu.edu/psychology/asp/default.asp
Butler University Indianapolis, IN	http://www.butler.edu/psychology/
Calumet College of St.Joseph Whiting, IN	http://www.ccsj.edu/academics/programs/psy/
DePauw University Greencastle, IN	http://www.depauw.edu/acad/psychology/psychfaculty.asp
Earlham College Richmond, IN	http://www.earlham.edu/~psyc/
Evansville, University of Evansville, IN	http://psychology.evansville.edu/

Franklin College Franklin, IN	http://www.franklincollege.edu/psyweb/
Goshen College Goshen, IN	http://www.goshen.edu/psych/
Grace College Winona Lake IN	http://www.grace.edu/college/majors/behavioral_sciences/
Hanover College Hanover, IN	http://psych.hanover.edu/
Huntington College Huntington, IN	http://www.huntington.edu/psych/
Indiana Institute of Technology Fort Wayne	http://www.indtech.edu/Academics/Programs/Bachelors/BAPsychology.html
Indiana State University Terre Haute, IN	http://web.indstate.edu/psych/
Indiana University Bloomington, IN	http://www.indiana.edu/~psych/
Indiana University East Richmond, IN	http://www.indiana.edu/~iuepsyc
Indiana University-South Bend South Bend, IN	http://www.iusb.edu/~psy
Indiana University-Kokomo	http://newsinfo.iu.edu/group/page/normal/110.html
Indiana University-Northwest Gary, IN	http://www.iun.edu/~psy/
Indiana University-Purdue University Columbus Columbus, IN	http://www.columbus.iupui.edu/programs/psychology/
Indiana University-Purdue University Fort Wayne Fort Wayne, IN	http://www.ipfw.edu/psyc/
Indiana University-Purdue University Indianapolis Indianapolis, IN	http://www.psyunix.iupui.edu/
Indiana University-Southeast New Albany, IN	http://www.ius.edu/psychology/
Indiana Wesleyan University Marion, IN	http://cas.indwes.edu/Behavioral_Sciences/Psychology/
Indianapolis Indianapolis, IN	http://psych.uindy.edu/index.php
Manchester College North Manchester, IN	http://www.manchester.edu/
Marian College	http://www.marian.edu/academics_areasofstudy.asp?Dept=8&Action=VIEW&ID=27
Notre Dame, University of Notre Dame, IN	http://www.nd.edu/~psych/
Purdue University West Lafayette, IN	http://www.psych.purdue.edu/
Rose-Hulman Institute of Technology Terre Haute, IN	http://www.rose-hulman.edu/Class/hu/HTML/psych/
Saint Francis Fort Wayne, IN	http://www.sf.edu/psychology/
Saint Joseph's College Rensselaer, IN	http://www.saintjoe.edu/academics/psychology/
Saint Mary-of-the-Woods College Saint Mary-of-the-Woods IN	http://www.smwc.edu/acad/sbs_dept/psych/
Saint Mary's College Notre Dame, IN	http://www.saintmarys.edu/~psych/
Southern Indiana, University of Evansville, IN	http://www.usi.edu/libarts/psychology/
Taylor University Upland, IN	http://www.taylor.edu/academics/acaddepts/psychology/
Tri-State University Angola, IN	http://www.tristate.edu/CPS/index.htm
Valparaiso University Valparaiso, IN	http://www.valpo.edu/psych/
Wabash College Crawfordsville, IN	http://www.wabash.edu/academics/psychology/
Briar Cliff College Sioux City, IA	http://www.briarcliff.edu/prostudents/majors/psychology.html
Buena Vista University Major Requirements. Storm Lake, IA	http://www.bvu.edu/academics/socscience/psychology/
Central College Pella, IA	http://www.central.edu/academics/programs/popup/psychology.html
Clarke College Dubuque	http://www.clarke.edu/academics/departments/psyc

	hology/index.htm
Coe College Cedar Rapids, IA	http://www.public.coe.edu/departments/Psychology/
Cornell College Mount Vernon, IA	http://www.cornellcollege.edu/psychology/
Dordt College Sioux Center, IA	http://www.dordt.edu/academics/departments/psychology/?css=1
Drake University Des Moines, IA	http://www.drake.edu/artsci/psy/
Dubuque, University of Dubuque, IA	http://www.dbq.edu/academics/psychcurric/psych2.cfm
Graceland College Psychology Major. Lamoni, IA	http://www.graceland.edu/show.cfm?durki=510
Grand View College Des Moines, IA	http://www.gvc.edu/academics/psych_soc/
Grinnell College Grinnell, IA	http://www.grinnell.edu/academic/psychology/
Iowa, University of Iowa City, IA	http://www.psychology.uiowa.edu/
Iowa State University Ames, IA	http://www.psychology.iastate.edu/
Iowa Wesleyan College Mt. Pleasant, IA	http://www.iwc.edu/pro_stu/majors/psych.htm
Loras College Dubuque, IA	http://depts.loras.edu/academics/catalog/dept/Psychology.html
Luther College Decorah, IA	http://psych.luther.edu/
Morningside College Sioux City, IA	http://www.morningside.edu/
Mount Mercy College Cedar Rapids, IA	http://www2.mtmercy.edu/academicsdir/psychology/psychologyhome.html
Northern Iowa, University of Cedar Falls, IA	http://www.uni.edu/psych/
Northwestern College of Iowa Oregon City, IA	http://www.nwciowa.edu/view/overview/psych.asp
Simpson College Indianola, IA	http://www.simpson.edu/academics/department.jsp?SectionId=22
St. Ambrose University Davenport, IA	http://web.sau.edu/psychology/
Upper Iowa University Fayette, IA	http://www.uiu.edu/
Waldorf College Forest City, IA	http://www.waldorf.edu/academics/psych/index.htm
Wartburg College Social Science majors, including Psychology. Waverly, IA	http://www.wartburg.edu/02-04catalog/soc_sci/Mmreqs.html
William Penn College Psych course listing. Oskaloosa, IA	http://www.wmpenn.edu/academics/divisions/sbsciences/index.html
Baker University Baldwin City, KS	http://www.bakeru.edu/departments/psychology/academic_psychology.htm
Barclay College Haviland, KS	http://www.barclaycollege.edu/Advantage/psych.htm
Benedictine College Atchison, KS	http://www.benedictine.edu/students.asp?pgID=569&dept_id=20&showText=f
Bethany College Lindsborg, KS	http://www.bethanylb.edu/academics/areas_of%20study/psychology/index.html
Bethel College North Newton KS	http://www.bethelks.edu/natsci/NewFiles/psychologyhome.html
Emporia State University Emporia, KS	http://www.emporia.edu/psyspe/
Fort Hays State University Hays, KS	http://www.fhsu.edu/psych/
Friends University Wichita	http://www.friends.edu/academics/degree_detail.asp?id=20
Kansas, University of Lawrence, KS	http://www.psych.ukans.edu/
Kansas State University Manhattan, KS	http://www.ksu.edu/psych/
Kansas Wesleyan University Salina, KS	http://www.kwu.edu/psychology/index.htm
McPherson College McPherson, KS	http://www.mcpherson.edu/behavioralscience/

Mid-America Nazarene College Olathe, KS	http://www.mnu.edu/behav_sci/psych/
Pittsburg State University Pittsburg, KS	http://www.pittstate.edu/psych/
Saint Mary, University of Leavenworth, KS	http://www.stmary.edu/extranet/psychug/
Southwestern College Winfield, KS	http://www.sckans.edu/psychology/
Sterling College Sterling, KS	http://www.sterling.edu/academics/bs/
Tabor College Hillsboro, KS	http://www.tabor.edu/academics/undergrad_dept.php?id=22
Washburn University Topeka, KS	http://www.wuacc.edu/cas/psychology/index.html
*Wichita State University Wichita, KS	http://psychology.wichita.edu/
Asbury College Wilmore KY	http://www.asbury.edu/Academics/Psychology/index.cfm
Baldwin-Wallace College Berea OH	http://www.bw.edu/academics/psy/
Bellarmino College Louisville, KY	http://www.bellarmino.edu/cas/departments/psychology/index.asp
Berea College Berea, KY	http://www.berea.edu/PSY/PSY.home.html
Brescia University Owensboro, KY	http://www.brescia.edu/academics/social/psychology.htm
Centre College Danville, KY	http://www.centre.edu/web/academic/majors/psychology.html
Cumberland College Williamsburg, KY	http://www.cumberlandcollege.edu/academics/departments/psychology/
Eastern Kentucky University Richmond, KY	http://www.psychology.eku.edu/
Georgetown College Georgetown, KY	http://spider.georgetowncollege.edu/psychology/
Kentucky Christian College Grayson, KY	http://campus.kcc.edu/~behavioralscience/
Kentucky State University Frankfort, KY	http://www.kysu.edu/colleges_schools/cassis/bss/psychology.cfm
Kentucky, University of Lexington, KY	http://www.uky.edu/ArtsSciences/Psychology/
Kentucky, University of, at Lexington Department of Educational and Counseling Psychology. Lexington, KY	http://www.uky.edu/Education/edphead.html
Kentucky Wesleyan College Owensboro, KY	http://www.kwc.edu/academic/psych/home.htm
Lindsey Wilson College Columbia, KY	http://www.lindsey.edu/index.cgi?id=1831
Louisville, University of Louisville, KY	http://www.louisville.edu/a-s/psychology/
Mid-Continent College Psychology and Counseling major. Mayfield, KY	http://midcontinent.edu/traditional/academics/bcas/majorsps.php
Midway College Midway, KY	http://www.midway.edu/degreeprograms/math/psychology.html
Morehead State University Morehead, KY	http://www.morehead-st.edu/colleges/science/psych/
Murray State University Murray, KY	http://www.murraystate.edu/chfa/psychology/psychome.htm
Northern Kentucky University Highland Heights, KY	http://www.nku.edu/~psych/
Pikeville College Pikeville, KY	http://academics.pc.edu/catalog/programs/psychology.htm
Spalding University Louisville, KY	http://www.spalding.edu/frame.asp?pg=/university/sh/psychology/home.asp?id=419
Sullivan University	http://www.sullivan.edu/
Thomas More College Crestview Hills, KY	http://www.thomasmore.edu/academics/study/psychology.asp
Transylvania University Lexington, KY	http://homepages.transy.edu/~psychology/

Union College Barbourville, KY	http://mars.unionky.edu/psychology/
Western Kentucky University Bowling Green, KY	http://edtech.cebs.wku.edu/~psych/
Centenary College of Louisiana Shreveport, LA	http://www.centenary.edu/psychology/
Dillard University New Orleans, LA	http://dived.dillard.edu/
Grambling State University Grambling, LA	http://www.gram.edu/Colleges%20&%20Schools/Liberal%20Arts/Psych/index.htm
Lafayette Lafayette, LA	http://www.ull.edu/Academic/LiberalArts/PSYC/
Louisiana, University of, at Monroe Monroe, LA	http://www.ulm.edu/education/psychology/
Louisiana College Pineville, LA	http://www.lacollege.edu/humanbehavior/index.html
Louisiana College Pineville, LA	http://www.lacollege.edu/humanbehavior/hbehav_req.html
Louisiana State University Baton Rouge, LA	http://www.psych.lsu.edu/psychology.html
Louisiana State University Health Sciences Center Neuroscience Center. New Orleans, LA.	http://www.medschool.lsuhscc.edu/neuroscience/
Louisiana Tech University Ruston, LA	http://www.latech.edu/tech/education/psychology/
Loyola University New Orleans New Orleans, LA	http://cas.loyno.edu/psychology/
McNeese State University Lake Charles, LA	http://www.mcneese.edu/colleges/ed/deptpsy/index.asp
New Orleans, University of New Orleans, LA	http://www.uno.edu/~psyc/
Nicholls State University Natchitoches, LA	http://www.nsula.edu/psychology/
Northwestern State University of Louisiana Natchitoches, LA	
Our Lady of Holy Cross College	http://www.ololcollege.edu/Behavioral_Sciences_rev02.html
Our Lady of the Lake College Baton Rouge, LA	http://www.ololcollege.edu/
Southeastern Louisiana University Hammond, LA	http://www.selu.edu/
Southern University & A&M College Baton Rouge, LA	http://www.subr.edu/science/psychology.pdf
Southern University at New Orleans New Orleans, LA	http://www.suno.edu/academics/psychology/overview.htm/
Southern University at Shreveport Shreveport, LA	http://www.susla.edu/html/academics/behavior/behavior.htm/academics/psychology/overview.htm/
Tulane University New Orleans, LA	http://www.tulane.edu/~psych/psychome.html
Xavier University of Louisiana New Orleans, LA	http://www.xula.edu/Academic/as_college/psychol_dept/psycholhome.html
Bates College Lewiston, Maine	http://www.bates.edu/acad/depts/psychology/
Bowdoin College Brunswick ME	http://academic.bowdoin.edu/psychology/
Colby College Waterville, ME	http://www.colby.edu/psychology/
College of the Atlantic One major: Human Ecology. Bar Harbor, ME	http://www.coa.edu/
Husson College Bangor, ME	http://depts.husson.edu/psych/
Maine, University of, at Augusta Requirements, Bachelor of Science, Mental Health and Human Services. Augusta, ME	http://www.uma.maine.edu/n&ss/Checksheets/BSMentalHealth&HumanServices-Bangor.pdf
Maine, University of, at Farmington Farmington, ME	http://www.umf.maine.edu/academics/dept_psych.php?location=academics
Maine, University of, at Fort Kent Fort Kent, ME	http://www.umfk.maine.edu/academics/programs/behsoc/academics/beh/
Maine, University of, at Machias Machias, ME	http://www.umm.maine.edu/majors/beh/index.shtml

Maine, University of Orono, ME	http://www.hutchinsoncenter.umaine.edu/psychology/index.html
Maine, University of, at Presque Isle Presque Isle, ME	http://www.umpi.maine.edu/programs/pgms/behp.htm
New England, University of Biddeford, ME	http://www.une.edu/cas/psych/index.html
Southern Maine, University of Portland, ME	http://www.usm.maine.edu/~psy/
St. Joseph's College Standish, ME	http://www.sjcme.edu/majors/psychology_description.html?l1=1&l2=15&l3=0&l4=0
Thomas College Waterville, ME	http://www.thomas.edu/catalog/psychology.htm
Baltimore, University of Division of Applied Psychology and Quantitative Methods, Baltimore, MD	http://www.ubalt.edu/dapqm
Bowie State University Bowie, MD	http://www.bowiestate.edu/bowieweb/acadres/Psychology/Psych%20Splash.htm
Chesapeake College Early Childhood Development program. Wye Mills, MD	http://www.chesapeake.edu/sched_cat/proglist.asp?pickcos=Early+Childhood+Development%7E
College of Notre Dame of Maryland Baltimore, MD	http://www.ndm.edu/academics/departments/nd_aca_psychSoc.cfm
Columbia Union College Takoma Park, MD	http://www.cuc.edu/academic/departments/psychology/index.html
Coppin State College Baltimore, MD	http://www.coppin.edu/psyc/psyc.asp
Frostburg State University Frostburg, MD	http://www.frostburg.edu/dept/psyc/
Goucher College Baltimore, MD	http://www.goucher.edu/academics/template.cfm?page_id=55&dep_ID=56
Hood College Frederick, MD	http://www.hood.edu/academic/psychology/
Johns Hopkins University Baltimore, MD	http://www.psy.jhu.edu/
Loyola College in Maryland Baltimore, MD	http://www.loyola.edu/psychology/
Maryland, University of, at Baltimore County Baltimore, MD	http://www.umbc.edu/psyc/
Maryland, University of College Park, MD	http://www.bsos.umd.edu/psyc/
Maryland, University of, Computer Vision Lab College Park MD	http://www.cfar.umd.edu:80/cvl/
Maryland, University of, School of Medicine Center for School Mental Health Assistance. Baltimore, MD	http://csmha.umaryland.edu/who.html
Maryland, University of, University College Adelphi	http://www.umuc.edu/prog/ugp/majors/psyc.shtml
McDaniel College Westminster, MD	http://www.mcdaniel.edu/academics/psychology/psych.shtml
Morgan State University Baltimore MD	http://www.morgan.edu/academics/Liberal-Arts/Psych/New/index.htm
Mount Saint Mary's College Emmitsburg, MD	http://www.msmary.edu/college/html/undergraduate/psychology/psychology_programs.htm
St. Mary's College of Maryland St. Mary's, MD	http://www.smcm.edu/academics/Psyc/
Salisbury University Salisbury, MD	http://fulton.salisbury.edu/~psychology/welcome.htm
Towson State University Towson, MD	http://www.towson.edu/~petri/psy_hpg.html
Uniformed Services University of the Health Sciences Bethesda, MD	http://www.usuhs.mil/mps/Psychology/clin-programs_1.html
Washington College Chestertown, MD	http://www.washcoll.edu/wc/prospective/academic/catalog/_psyc.html
Villa Julie College Stevenson, MD	http://www.vjc.edu/academics/psychology/index.aspx?id=2531

American International College Springfield, MA	http://www.aic.edu/pages/343.html
Amherst College Amherst, MA	http://www.amherst.edu/~psych/
Anna Maria College Paxton, MA	http://www.annamaria.edu/Academics/Undergraduate/Human_Development_and_Human_Services/Degree_Programs/Psychology/index.htm
Assumption College Worcester, MA	http://www.assumption.edu/programs/psychology/
Atlantic Union College South Lancaster, MA	http://www.atlanticuc.edu/acad.educpsych.php
Bay Path College Longmeadow, MA	http://www.baypath.edu/academics_psych.htm
Becker College Worcester, MA	http://www.beckercollege.edu/academic/acadprohuman.htm
Bentley College Waltham, MA	http://ecampus.bentley.edu/dept/bps/
Boston College Boston, MA	http://www.bc.edu/bc_org/avp/cas/psych/psych.html
Boston University Boston, MA	http://www.bu.edu/psych/
Brandeis University Waltham, MA	http://www.brandeis.edu/departments/psych/
Clark University Worcester, MA	http://www.clarku.edu/~psydept/
Curry College Psychology major. Milton, MA	http://www.curry.edu/academics/undergraduates/degree_programs/majors.htm
Eastern Nazarene College Quincy, MA	http://www.enc.edu/undergraduate_program/psychology_degrees.html
Elms College Chicopee, MA	http://www.elms.edu/academics/undergraduate/ss_psychology.htm
Emerson College Communications Sciences and Disorders. Boston, MA	http://www.emerson.edu/communication_disorders/index.cfm
Emmanuel College Boston, MA	http://www.emmanuel.edu/academic/departments/psychology/default.asp
Endicott College Beverly, MA	http://www.endicott.edu/academic/psychology/index.htm
Fitchburg State College Fitchburg, MA	http://www.fsc.edu/behsci/
Framingham State College Framingham, MA	http://www.framingham.edu/psych.htm
Gordon College Wenham, MA	http://www.gordon.edu/academics/psychology/
Hampshire College Amherst, MA	http://www.hampshire.edu/cms/index.php?id=2909
Harvard University Cambridge, MA	http://wjh-www.harvard.edu/psych/
Holy Cross Worcester, MA	http://www.holycross.edu/departments/psychology/website/index.html
Lesley College Counseling and School Psychology. Cambridge, MA	http://www.lesley.edu/gsass/30cpp.html
Massachusetts Amherst, University of Amherst, MA	http://www.umass.edu/psychology/
Massachusetts Boston, University of Boston, MA	http://psych.umb.edu/
Massachusetts College of Liberal Arts North Adams, MA	http://www.mcla.mass.edu/Academics/Majors_Departments/Psychology/
Massachusetts Dartmouth, University of North Dartmouth, MA	http://www.umassd.edu/cas/psychology/welcome.cfm
Massachusetts Institute of Technology Brain and Cognitive Sciences. Cambridge, MA	http://web.mit.edu/bcs/index.shtml
Massachusetts Lowell, University of Lowell, MA	http://www.uml.edu/dept/psychology/
Massachusetts School of Professional Psychology Boston, MA	http://www.mspp.edu/
Merrimack College North Andover, MA	http://www.merrimack.edu/bin/mcdepartment.cgi?department=Psychology_Department
Mount Holyoke College Department of Psychology	http://www.mtholyoke.edu/acad/psych/

and Education. South Hadley, MA	
Mount Ida College Newton, MA	http://www.mountida.edu/sp.cfm?pageid=345
Newbury College Psych Major. Brookline, MA	http://www.newbury.edu/academics/schools/arts_science_tech/majors/psychology.shtml
Nichols College Dudley, MA	http://www.nichols.edu/generalpsychology.htm
Northeastern University Boston, MA	http://www.psych.neu.edu/
Pine Manor College Chestnut Hill, MA	http://community.pmc.edu/psychology/
Regis College Weston MA	http://regisnet.regiscollege.edu/psychology/
Salem State College Salem, MA	http://www.salemstate.edu/psychology/
Simmons College Boston, MA	http://www.simmons.edu/academics/undergraduate/psychology/
Simon's Rock College of Bard Psychology Courses. Great Barrington, MA	http://www.simons-rock.edu/
Smith College Northampton, MA	http://www.science.smith.edu/departments/PSYCH/
Springfield College Springfield, MA	http://www.spfldcol.edu/homepage/dept.nsf/D02DEA1C0FC6F99D45256BD800296E8C/DEC249EA6EC9AC3E45256C63002C6516?OpenDocument
Suffolk University Boston, MA	http://www.cas.suffolk.edu/psych/ndonovan/psych.htm
Tufts University Medford, MA	http://ase.tufts.edu/psychology/
Wellesley College Wellesley, MA	http://www.wellesley.edu/Psychology/Psych/homepage.html
Western New England College Springfield, MA	http://www1.wnec.edu/artsandsciences/index.cfm?selection=doc.547
Westfield State College Westfield MA	http://www1.wsc.ma.edu/psychology/
Wheaton College Norton, MA	http://www.wheatoncollege.edu/Academic/AcademicDept/Psychology/
Wheelock College Human Development Major. Boston, MA	http://www.wheelock.edu/
Williams College Williamstown, MA	http://www.williams.edu:803/Psychology/
Worcester Polytechnic Institute Worcester, MA	http://www.wpi.edu/
Worcester State College Worcester, MA	http://www.worcester.edu/academics/psychology/index.htm
Albion College Albion, MI	http://www.albion.edu/psychology/
Adrian College Adrian, MI	http://www.adrian.edu/academics/psychology.html
Albion College Albion, MI	
Alma College Alma MI	http://academics.alma.edu/psychology/
Andrews University Berrien Springs MI	http://www.andrews.edu/BHSC/
Aquinas College Grand Rapids, MI	http://www.aquinas.edu/departments/psychology/
Calvin College Grand Rapids, MI	http://www.calvin.edu/academic/psych/
Central Michigan University Mt. Pleasant, MI	http://www.chsbs.cmich.edu/Psychology/
Concordia College-Ann Arbor	http://www.cuaa.edu/
Delta College University Center MI	http://www.delta.edu/socsci/PSYindex.html
Detroit Mercy, University of Detroit, MI	http://libarts.udmercy.edu/dep/pyc/index.html
Eastern Michigan University Ypsilanti, MI	http://www.emich.edu/public/psych/index.htm
Ferris State University Big Rapids, MI	http://www.ferris.edu/htmls/fsucatl/coursecatalog/programs.cfm?program_id=29
Grand Valley State University Allendale, MI	http://www.gvsu.edu/psych/

Hillsdale College Hillsdale, MI	http://www.hillsdale.edu/academics/psychology.asp
Hope College Holland, MI	http://www.hope.edu/academic/psychology/
Kalamazoo College Kalamazoo, MI	http://www.kzoo.edu/psych/
Lake Superior State University Sault Ste. Marie, MI	http://www.lssu.edu/academics/arts_letters_ss/social-sciences/psychology.html
Lawrence Technological University Southfield, MI	http://www.ltu.edu/arts_sciences/psychology/index.asp
Madonna University Livonia, MI	http://www.madonna.edu/pages/psychology.cfm
Marygrove College Detroit, MI	http://www.marygrove.edu/undergraduate/psychology/
Michigan, University of, at Ann Arbor	http://www.umich.edu/~psycdept/
Michigan, University of, at Dearborn	http://www.umd.umich.edu/dept/acad/casl/behsci/psych/
Michigan, University of, at Flint	http://www.flint.umich.edu/resources/fast_facts/psych.php
Michigan State University East Lansing, MI	http://psychology.msu.edu/
Michigan State University Cognitive Science program. East Lansing, MI	http://cogsci.msu.edu/
Michigan Technological University Houghton, MI	http://www.psych.mtu.edu/
Northern Michigan University Marquette, MI	http://www.nmu.edu/departments/psych.htm
Northwood University Midland, MI	http://www.northwood.edu/
Oakland University Rochester, MI	http://www.oakland.edu/psych/
Olivet College Psych major. Olivet, MI	http://www.olivetcollege.edu/departments/soc_sc/psych.htm
Rochester College Rochester Hills, MI	http://www.rc.edu/prospect_stu/ps_academ_psyc.htm
Saginaw Valley State University University Center, MI	http://www.svsu.edu/psychology/
Siena Heights University Adrian, MI	http://www.sienahts.edu/acdiv.html
Spring Arbor University Spring Arbor, MI	http://www.arbor.edu/index.jsp?pageID=483
Wayne State University Detroit, MI	http://sun.science.wayne.edu/~psych/
Western Michigan University Kalamazoo, MI	http://www.wmich.edu/
William Tyndale College Farmington Hills, MI	http://www.williamtyndale.edu/academics/degreeprograms/ba/psy.php
Adler Graduate School Hopkins, MN	http://www.alfredadler.edu/
Augsburg College Minneapolis MN	http://www.augsburg.edu/psych
Bemidji State University Bemidji MN	http://www.bemidjistate.edu/Psychology/
Bethany Lutheran College Mankato MN	http://www.blc.edu/academics/majors/psychology/
Bethel College and Seminary St. Paul, MN	http://www.bethel.edu/college/dept/psychology/
Capella University Online only. Physical facility is in Minneapolis, MN	http://www.capella.edu/reborn/html/schools/psychology/counseling_list.aspx
Carleton College Northfield, MN	http://www.acad.carleton.edu/curricular/PSYC/psychweb/
Concordia College Moorhead MN	http://www.cord.edu/dept/psych/
Concordia University St. Paul, MN	http://www.csp.edu/psychology/Psyc_pages/Psychology_Page.htm
Crossroads College Psych minor. Rochester, MN	http://www.crossroadscollege.edu/Academic_Programs/psychology_minor.htm
Crown College St. Bonifacius, MN	http://www.crown.edu/CAP/New/PS%20Program.ht

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Gustavus Adolphus College St. Peter, MN	http://www.gustavus.edu/oncampus/academics/psych/h/psych.cfm
Hamline University St. Paul, MN	http://web.hamline.edu/cla/academics/psychology/
Macalester college St. Paul, MN	http://www.macalester.edu/~psych/
Metropolitan State University St. Paul, Minneapolis, MN	http://www.metrostate.edu/cps/psych/index.html
Minnesota, University of Minneapolis and St. Paul, MN	http://www.psych.umn.edu/
Minnesota, University of, Duluth Duluth, MN	http://www.d.umn.edu/psychology/
Minnesota, University of, Morris Morris, MN	http://www.mrs.umn.edu/academic/psychology/
Minnesota State University, Mankato Mankato, MN	http://www.mankato.msus.edu/dept/psych/psych.html
Minnesota State University, Moorhead Moorhead, MN	http://www.mnstate.edu/psych/
Northwestern College Minneapolis, MN	http://www.nwc.edu/academic/pdf/dept_psy.pdf
Southwest Minnesota State University Marshall MN	http://www.southwest.msus.edu/program/index.cfm?programid=78&program=PSYC
St. Benedict College, St. John's University St. Joseph, MN and Collegeville, MN	http://www.users.csbsju.edu/~psych/
St. Cloud State St. Cloud, MN	http://www.stcloudstate.edu/~psy
St. Mary's University of Minnesota Winona, Twin Cities, MN	http://www.smumn.edu/sitepages/pid71.php
St. Olaf college Northfield, MN	http://www.stolaf.edu/depts/psych/
St. Catherine, College of Twin Cities, MN	http://minerva.stkate.edu/psychology.nsf
St. Scholastica, College of Duluth, MN	http://admissions.css.edu/factsheets/psychology.shtml
St. Thomas, University of, in Minnesota St. Paul, MN	http://www.stthomas.edu/psy/
Walden University PhD in Professional Psychology (online). Minneapolis MN (Main office)	http://www.waldenu.edu/acad-prog/psycphd/index.html
Winona State University Winona, MN	http://www.winona.edu/psychology/
Alcorn State University Alcorn State, MS	http://www.alcorn.edu/academic/academ/ed.htm
Belhaven College Jackson, MS	http://www.belhaven.edu/Academics/Divisions/Ministry/Psychology/psych.htm
Blue Mountain College Blue Mountain, MS	http://www.bmc.edu/academicinformation2.html
Delta State University Cleveland, MS	http://ntweb.deltastate.edu/psychol/
Jackson State University Jackson, MS	http://ccaix.jsums.edu/~psycdept/
Millsaps College Jackson, MS	http://www.millsaps.edu/psych/
Mississippi, University of University, MS	http://www.olemiss.edu/depts/psychology/
Mississippi College Clinton, MS	http://www.mc.edu/campus/academics/PSY/
Mississippi State University Mississippi State, MS	http://www.msstate.edu/Dept/Psychology/psych.html
Mississippi University for Women Psych major. Columbus, MS	http://www.muw.edu/hs/
Southern Mississippi, University of Hattiesburg, MS	http://www-dept.usm.edu/~psy/dept/home.htm
Tougaloo College Tougaloo, MS	http://www.tougaloo.edu/matriarch/OnePiecePage.asp?PageID=175&PageName=DivSocSciPsychol
Avila College MS in Counseling Psychology. Kansas City, MO	http://www.avila.edu/departments/gradpsych/faculty.htm

Central Methodist College Fayette MO	http://www.cmc.edu/psych/
Central Missouri State University Warrensburg, MO	http://www.cmsu.edu/academic/psyc__hp.html
Columbia College Columbia, MO	http://www.ccis.edu/departments/psychology/
Culver-Stockton College Canton, MO	http://www.culver.edu/academics/artsandsciences/psychology/psyche.htm
Drury University Springfield, MO	http://www.drury.edu/section/section.cfm?sid=179
Evangel University Psychology program. Springfield, MO	http://www.evangel.edu/General/Catalog/Behavioral Science/Psychology.asp
Fontbonne College Psych major. St. Louis, MO	http://www.fontbonne.edu:8080/catalog/undergrad/prss_maj.html
Forest Institute of Professional Psychology Springfield MO	http://www.forest.edu/
Hannibal-LaGrange College Hannibal, MO	http://www.hlg.edu/Catalog/html/behavioral.htm
Lincoln University Jefferson City, MO	http://www.lincolnu.edu/~psych/
Lindenwood University St. Charles. MO	http://www.lindenwood.edu/academics/divisions/sciepsychology.html
Maryville University of St. Louis St. Louis, MO	http://www.maryville.edu/academics/lp/PsychSoc/psycholo2.htm
Missouri Southern State University Joplin, MO	http://www.mssu.edu/psych/home.htm
Missouri Valley College Major courses. Marshall, MO	http://www.moval.edu/academics/majors_minors/psychology_major.asp
Missouri Western State College St. Joseph, MO	http://www.mwsc.edu/psychology/
Missouri, University of, at Columbia Columbia, MO	http://www.missouri.edu/~psywww/
Missouri, University of, at Rolla Rolla, MO	http://www.umar.edu/~psych/
Missouri, University of, at St. Louis St. Louis, MO	http://www.umsl.edu/divisions/artscience/psychology/psychology.html
Northwest Missouri State University Maryville, MO	http://www.nwmissouri.edu/academics/psychology.htm
Park University Parkville, MO	http://captain.park.edu/psychology/
Rockhurst University Kansas City, MO	http://www.rockhurst.edu/academic/psychology/index.asp
Southeast Missouri State University Cape Girardeau, MO	http://www4.semo.edu/psychology/
Southwest Baptist University Bolivar, MO	http://falcon.sbuniv.edu/bsd/psyprog.htm
Southwest Missouri State University Springfield, MO	http://www.smsu.edu/contrib/PSYCH/psychome.html
St. Louis University St. Louis, MO	http://www.slu.edu/colleges/AS/PSY/deptinfo/index.html
Stephens College Columbia, MO	http://www.stephens.edu/academics/programs/psychology/
Truman State University Kirksville, MO	http://psychology.truman.edu/
Washington University in Saint Louis St. Louis, MO	http://www.artsci.wustl.edu/~psych/index.html
Webster University St Louis MO	http://www.webster.edu/depts/artsci/bass/bass.html
Westminster College	http://www.westminster-mo.edu/academics/degrees/majors.asp?ID=27
William Jewell College Liberty, MO	http://www.jewell.edu/~psychology
William Woods University Fulton, MO	http://www.wmwoods.edu/Academics_at_WWU/UndergraduateStudies/Letters_and_Sciences/psychology.html
Carroll College Helena, MT	http://www.carroll.edu/academics/psychology/psych

	ology.php
Great Falls, University of Psych major. Great Falls. MT	http://www.ugf.edu/pdfs/PSYMajor.pdf
Montana, University of Missoula, MT	http://www2.umt.edu/psych/
Montana State University - Billings Billings, MT	http://www.msubitings.edu/psychology/
Montana State University Bozeman, MT	http://www.montana.edu/wwwpy/
Rocky Mountain College Billings, MT	http://academics.rocky.edu/index.php?topgroupid=3&subgroupid=24&groupid=26
Bellevue University Bellevue	http://www.bellevue.edu/degrees/psychology.asp
Chadron State College Chadron, NE	http://www.csc.edu/graduate/CPSW.html
College of Saint Mary Omaha, NE	http://csm.edu/academics__Majors/listing_of_programs/psychology/
Creighton University Omaha, NE	http://puffin.creighton.edu/psy/index.htm
Dana College Blair, NE	http://www.dana.edu/psychology/index.html
Doane College Psych major. Crete, NE	http://www.doane.edu/crete_campus/academics/social_science/psychology.asp
Grace University Psych courses. Omaha, NE	http://www.graceuniversity.edu/catalog/Index_PSY.htm
Hastings College Hastings, NE	http://www.hastings.edu/academic/Catalog/current/majors/psychology.html
Midland Lutheran College Fremont, NE	http://www.mlc.edu/academics/majors/default.asp?major=25/
Nebraska, University of Lincoln, NE	http://www.unl.edu/psypage/
Nebraska, University of, at Kearney Department of Counseling & School Psychology	http://www.unk.edu/acad/psychology/
Nebraska, University of, at Omaha Omaha, NE	http://www.unomaha.edu/~psychweb/
Nebraska Wesleyan University Lincoln, NE	http://www.nebrwesleyan.edu/depts/psyc/
Peru State College Peru, NE	http://www.hpcnet.org/cgi-bin/global/peru_view_frames.cgi?SiteID=314840&top=gt.htm&left=gl.htm
Union College Psychology major. Lincoln, NE	http://www.ucollege.edu/ucscripts/public/template/default.asp?DivID=1&pgID=237
Wayne State College Wayne, NE	http://www.wsc.edu/schools/nss/spcj/academic_programs/psy/
York College Psych major. York, NE	http://www.york.edu/academics/Index.htm
Sierra Nevada College Incline Village, NV	http://www.sierranevada.edu/academic/humanities/psychology.html
University of Nevada Reno	http://www.unr.edu/psych/
University of Nevada, Las Vegas Las Vegas	http://psychology.unlv.edu/
Antioch New England Graduate School Applied Psychology. Keene NH	http://apdept.antiochne.edu/Home/
Antioch New England Graduate School Clinical Psychology. Keene, NH	http://cpdept.antiochne.edu/Home/
Colby-Sawyer College New London, NH	http://www.colby-sawyer.edu/academic/psychology/index.html
Dartmouth College Hanover, NH	http://www.dartmouth.edu/artsci/psych/index.html
Franklin Pierce College Rindge, NH	http://www.fpc.edu/pages/Academics/behavior/psych/psych.html
Keene State College Keene, NH	http://www.keene.edu/programs/psyc/
New England College Henniker, NH	http://www.nec.edu/academics/departments/psychol

	ogy/index.html
New Hampshire, University of Durham, NH	http://www.unh.edu/psychology/index.html
New Hampshire at Manchester, University of Manchester, NH	http://www.unhm.unh.edu/course-catalog/psychology/psyc.html
Plymouth State College Plymouth, NH	http://www.plymouth.edu/thirdtier/department.phtml?department_code=PS
Rivier College Nashua, NH	http://www.rivier.edu/academics/social_sciences/default.asp
Saint Anselm College Manchester, NH	http://www.anselm.edu/internet/psych/psych.html
Southern New Hampshire University Manchester, NH	http://www.snhu.edu/Home_Page/Academics/General_Info/School_of_Liberal_Arts/SLA_Psychology.html
Thomas More College of Liberal Arts Merrimack, NH	http://www.thomasmorecollege.edu/
Bloomfield College Bloomfield, NJ	http://www.bloomfield.edu/sbs/psy1.htm
Caldwell College Caldwell, NJ	http://www.caldwell.edu/academics/psyche.html
Centenary College	http://www.centenarycollege.edu/
Drew University Madison, NJ	http://www.depts.drew.edu/psyc/
Fairleigh Dickinson University Madison, NJ	http://alpha.fdu.edu/psychweb/
Felician College Lodi, NJ	http://www.felician.edu/departments/psychology/
Georgian Court College Lakewood, NJ	http://www.georgian.edu/psychology/index.html
Kean University Union, NJ	http://www.kean.edu/~cahss/acad_dept/psych/
Monmouth University West Long Branch, NJ	http://www.monmouth.edu/academics/deptlinks/psychology.asp
New Jersey, College of Erving, NJ	http://psychology.department.tcnj.edu/
New Jersey Institute of Technology Newark, NJ	http://www.njit.edu/old/catalog/undergraduate/00Fall/81.html
Princeton University Princeton, NJ	http://www.princeton.edu/~psych/
Ramapo College Mahwah, NJ	http://www.ramapo.edu/catalog_03_04/academicPrograms/TAS/psychology.html
Richard Stockton College of New Jersey Pomona, NJ	http://talon.stockton.edu/eyos/page.cfm?siteID=14&pageID=54
Rider University Lawrenceville, NJ	http://www1.rider.edu/~wwwpsy/psydept.html
Rowan University Glassboro, NJ	http://www.rowan.edu/mars/depts/psychology/
Rutgers University - Camden Camden, NJ	http://psychology.camden.rutgers.edu/
Rutgers University, New Brunswick, Piscataway/Busch Campus Piscataway, NJ	http://psych.rutgers.edu/
Rutgers University, Newark Newark, NJ	http://psychology.rutgers.edu/
Saint Elizabeth, College of Morristown, NJ	http://www.cse.edu/cgi-any/chapters.dll/display?sitename=CSE&chaptergroup=Department&Name=Psychology&B1=View+Department+Homepage
Saint Peter's College Jersey City, NJ	http://www.spc.edu/departments/psych/index.shtml
Seton Hall University South Orange, NJ	http://artsci.shu.edu/psychology/
Thomas Edison State College Psych major. Trenton, NJ	http://www.tesc.edu/prospective/undergraduate/degree/ba/ba_psychology.pdf
William Paterson University of New Jersey Wayne, NJ	http://www.wpunj.edu/cohss/psychology/
Eastern New Mexico University Portales, NM	http://www.enmu.edu/academics/undergrad/colleges/las/psych/index.shtml

New Mexico, University of Albuquerque, NM	http://www.unm.edu/~psych/psych_unm.html
New Mexico Highlands University Las Vegas, NM	http://www.nmhu.edu/psychology/default.htm
New Mexico State University Las Cruces, NM and four other locations	http://www-psych.nmsu.edu/home.html
New Mexico Tech Socorro, NM	http://infohost.nmt.edu/~psychd/
Santa Fe, College of Santa Fe, NM	http://www.csf.edu/sf/pages/14.html
Southwest, College of the Psych major. Hobbs, NM, Carlsbad, NM	http://www.csw.edu/Academics/Arts_Science/BS_Psychology.pdf
Western New Mexico University Psych major. Silver City, NM	http://www.wnmu.edu/DgrPlans/Social_Science/Psychology-2003-04.pdf
Western New Mexico University Psychology Club. Silver City, NM	http://www.wnmu.edu/clubs/Psi%20Chi%202/wnmuPsiChi.htm
Adelphi University Garden City, NY	http://academics.adelphi.edu/derner/UG/index.shtml
Alfred University Alfred, NY	http://las.alfred.edu/~psy/
Bank Street College of Education Center for Emotionally Responsive Practice. New York, NY	http://www.bankstreet.edu/ceerp/index.html
Baruch College (City University of New York) New York, NY	http://www.baruch.cuny.edu/slas/departments/psychology/index.html
Bard College Hudson, NY	http://inside.bard.edu/academic/programs/psych/overview/index.shtml
Barnard College Barnard College, Columbia University. New York, NY	http://www.barnard.edu/psych/
Barnard College New York, NY	http://www.columbia.edu/barnard/psych/
Buffalo State College Buffalo, NY	http://www.buffalostate.edu/depts/psychology/
Canisius College Buffalo, NY	http://www2.canisius.edu/canhp/departments/canpsych/info/
City College, CUNY New York, NY	http://www.ccnycuny.edu/psychology/Mastertrack.htm
Clarkson University Potsdam, NY	http://people.clarkson.edu/~psychol/
Colgate University Hamilton, NY	http://departments.colgate.edu/psychology/
Columbia University New York City, NY	http://www.columbia.edu/cu/psychology/
Cornell University Ithaca, NY	http://comp9.psych.cornell.edu/
College of Mount St.Vincent Riverdale, NY	http://www.cmsv.edu/academics/majors_and_programs/psychology/psychology.htm
College of New Rochelle New Rochelle, NY	http://www.cnr.edu/academics/SAS/psychology.html
College of Saint Rose Albany, NY	http://www.strose.edu/Future_Students/Academics/School_of_Math_and_Science/psychology_department.asp
Concordia College-Bronxville Behavioral Sciences major. Bronxville, NY	http://www.concordia.onlinecommunity.com/beh_sci.pdf
Daemen College Amherst, NY	http://www.daemen.edu/academics/psychology/default.html
Dominican College Orangeburg, NY	http://www.dc.edu/liberal/psych.html
Dowling College Oakdale, NY, Shirley, NY	http://www.dowling.edu/academics/bapsyc.shtml
D'Youville College Buffalo, NY	http://www.dyc.edu/academics/liberal_arts/psychology/index.asp
Elmira College Psych major. Elmira, NY	http://www.elmira.edu/academics/am_psychology.shtml
Empire State College Saratoga Springs, NY	http://www.esc.edu/esconline/across_esc/academic.s.nsf/wholeshortlinks2/Psychology+Concentration?o

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Fordham University Bronx, NY	http://www.fordham.edu/general/Undergraduate/Department_Requireme5592.html
Fredonia, College at Fredonia, NY	http://www.fredonia.edu/department/psychology/
Graduate School & University Center, CUNY New York, NY	http://www.gc.cuny.edu/
Hamilton College Clinton, NY	http://www.hamilton.edu/academics/Psych/default.html
Hartwick College Psych major. Oneonta, NY	http://www.hartwick.edu/academic/psyc.html
Hobart & William Smith Colleges Geneva, NY	http://academic.hws.edu/psych/
Hofstra University Hempstead, NY	http://www.hofstra.edu/Academics/HCLAS/Psychology/index_Psychology.cfm
Houghton College Houghton, NY	http://www.houghton.edu/depts/psychology/psynsociohp.htm
Hunter College, CUNY New York, NY	http://maxweber.hunter.cuny.edu/psych/
Hilbert College Hamburg, NY	http://www.hilbert.edu/Academics/psychology/default.asp
Iona College New Rochelle, NY	http://www.iona.edu/academic/arts_sci/departments/psychology/index.htm
Ithaca College Ithaca, NY	http://www.ithaca.edu/hs/psych/psych1/
John Jay College of Criminal Justice (CUNY) Bachelor's in Forensic Psychology. New York, NY	http://www.jjay.cuny.edu/programsundergraduate/progundegradmajo/progundegradmajoforepsyc.asp
Keuka College Keuka Park, NY	http://www.keuka.edu/academic/bass/psychology.htm
Le Moyne College Syracuse, NY	http://www.lemoyne.edu/psychology/psychindex.htm
Lehman College, CUNY Bronx, NY	http://www.lehman.cuny.edu/depts/psychology/
Le Moyne College Syracuse, NY	
Long Island University, Brooklyn Campus Brooklyn, NY	http://www.brooklyn.liu.edu/psych/
Long Island University, C.W. Post Campus Clinical Psychology PhD program. Long Island, NY	http://www.cwpost.liunet.edu/cwis/cwp/clas/psych/doctoral/
Long Island University, Southampton College Southampton, NY	http://www.southampton.liunet.edu/
Long Island University, Westchester Campus Graduate program in school psychology. Purchase, NY	http://www.liu.edu/cwis/west/programs/teaching/psych.html
Marist College Poughkeepsie, NY	http://www.marist.edu/gce/graduate/social_behavioral.html
Medger Evers College, CUNY Brooklyn NY	http://www.mec.cuny.edu/academic_affairs/psychology/psych_home.htm
Manhattan College Riverdale, NY	http://www.manhattan.edu/arts/psyc/
Manhattanville College Purchase, NY	http://faculty.mville.edu/psych/
Marymount College Terrytown Terrytown, NY	http://www.marymt.edu/academics/psych/index.html
Marymount Manhattan College New York, NY	http://marymount.mmm.edu/cgi-bin/MySQLdb?MYSQL_VIEW=/study/programs/view.txt&currentdept=1025
Medaille College Buffalo, NY	http://www.medaille.edu/degrees/psychology.html
Mercy College Dobbs Ferry, NY	http://www.mercy.edu/acadivisions/socbehavsci/Psychology.cfm
Molloy College Rockville Centre, NY	http://www.molloy.edu/academic/psychology/index.htm

Mount Saint Mary College Newburgh, NY	http://www.msmc.edu/academics/index.cfm?Path=academics_con&Content=socsci_psych.html&Sidebar=/academics/sidenav_socsci.cfm
Nazareth College Rochester, NY	http://www.naz.edu/dept/psychology/
New York Institute of Technology Old Westbury, Manhattan, Central Islip, NY	http://www.nyit.edu/schools_programs/allied_health/behavioral_sciences.html
New York University New York, NY	http://www.psych.nyu.edu/
Niagara University Niagara University, NY	http://www.niagara.edu/
Old Westbury, SUNY College at Old Westbury, NY	http://www.oldwestbury.edu/
Pace University New York, NY	http://www.pace.edu/dyson/psychology/
Queen's College, CUNY Flushing, NY	http://www.qc.edu/Psychology/
Rensselaer Polytechnic Institute Cognitive science. Troy, NY	http://www.cogsci.rpi.edu/index.shtml
Roberts Wesleyan College Rochester, NY	http://www.roberts.edu/social%20work%20and%20social%20sciences/psychology,%20b.s/index.htm
Rochester Institute of Technology Rochester, NY	http://www.rit.edu/~932www/ugrad_bulletin/colleges/cla/psy.html
Rochester University of Department of Clinical and Social Sciences in Psychology. Rochester NY	http://www.psych.rochester.edu/csp/
Rochester University of Department of Brain and Cognitive Sciences	http://www.bcs.rochester.edu/
Rockefeller University Laboratory of Neurogenetics and Behavior. New York, NY	http://www.rockefeller.edu/labheads/vosshall/research_introduction.php
Sage Colleges Troy, NY	http://www.sage.edu/divisions/psych/
Sarah Lawrence College Bronxville, NY	http://www.slc.edu/undergraduate/index.php?content=curriculum&d=9
St. Bonaventure University St. Bonaventure, NY	http://www.sbu.edu/academics_psychology.html
St. John's University Jamaica, NY	http://www.stjohns.edu/pls/portal30/sjudev.school.home?p_siteid=38&p_navbar=209&p_id=50568
Siena College Loudonville, NY	http://www.siena.edu/psychology/
Skidmore College Saratoga Springs, NY	http://psych.skidmore.edu/index.html
State University of New York at Albany Albany, NY	http://www.albany.edu/psy/index.html
State University of New York at Binghamton Binghamton, NY	http://psychology.binghamton.edu/
State University of New York at Brockport (SUNY at Brockport) Brockport, NY	http://www.brockport.edu/~ucatalog/PSH.HTML
State University of New York at Buffalo (SUNY at Buffalo) Buffalo, NY	http://wings.buffalo.edu/soc-sci/psychology/
State University of New York at Cobleskill Psychology Concentration. Cobleskill, NY	http://www.cobleskill.edu/Academic/LAS/SOSC/PSYC.asp
State University of New York College at Cortland Cortland, NY	http://www.cortland.edu/www/psych/welcome.html
State University of New York at Farmingdale Farmingdale, NY	http://www.farmingdale.edu/
State University of New York at Geneseo Geneseo, NY	http://www.geneseo.edu/~psych/
State University of New York at New Paltz New Paltz, NY	http://www.newpaltz.edu/psychology/
State University of New York at Oneonta Oneonta, NY	http://www.oneonta.edu/~psyweb/INDEX.HTML
State University of New York at Oswego Oswego,	http://www.oswego.edu/~psychol/

NY	
State University of New York at Plattsburgh Plattsburgh, NY	http://www.plattsburgh.edu/academics/psychology/
State University of New York at Potsdam Potsdam, NY	http://www.potsdam.edu/PSYC/PSYChome.html
State University of New York, Purchase Purchase, NY	http://www.ns.purchase.edu/psych/
State University of New York at Stony Brook Stony Brook, NY	http://www.psychology.sunysb.edu/
St. Francis College Brooklyn Heights, NY	http://www.stfranciscollege.edu/Content/ContentGroups/Catalogue/Psychology/Department_Mission.htm
St. John Fisher College Psych major. Rochester, NY	http://www.sjfc.edu/brochures/maj_psych.htm
St. Joseph's College Brooklyn, NY, Suffolk, NY	http://www.sjcny.edu/brooklyn/artscience/programs/majors/psychology/index.html
St. Lawrence University Canton, NY	http://it.stlawu.edu/~psychology/
St. Thomas Aquinas College Psych major. Sparkill NY	http://www.stac.edu/humanities/socialscience/PsychMaj.htm
Staten Island, CUNY Staten Island, NY	http://www.csi.cuny.edu/catalog/undergraduate/departments/psychology.html
Syracuse University Syracuse, NY	http://psychweb.syr.edu/
Teachers College/Columbia University New York, NY	http://www.tc.columbia.edu/departments/counseling.htm
Touro College Psychology major. New York, NY	http://www.touro.edu/las/Degrees/Psychology.asp
Union College Schenectady NY	http://www.union.edu/Academics/Departments/deptView.php?code=PY&year=2003
United States Military Academy West Point, NY	http://www.dean.usma.edu/departments/bsl/
Upstate Medical University, SUNY Psychology Internship Program. Syracuse, NY	http://www.upstate.edu/psych/internship.shtml
Utica College of Syracuse University Utica, NY	http://www.utica.edu/hhs/psych/psychology.htm
Utica/Rome, SUNY Institute of Technology at (SUNYIT) Utica, NY	http://www.sunyit.edu/
Vassar College Biopsychology. Poughkeepsie NY	http://depts.vassar.edu/~psych/
Vassar College Cognitive Science. Poughkeepsie NY	http://depts.vassar.edu/~cogsci/coghome.html
Wagner College Staten Island, New York	http://www.wagner.edu/dept/psychology/
Yeshiva University Graduate School of Psychology New York NY	http://www.yu.edu/fgs/%20
York College, CUNY York College Psychological Society. Jamaica, NY	http://www.angelfire.com/ny3/YCPS/
Appalachian State University Boone NC	http://www.acs.appstate.edu/dept/psych/
Belmont Abbey College Belmont, NC	http://www.belmontabbeycollege.edu/academics/psychology.asp
Bennett College for Women Greensboro, NC	http://www.bennett.edu/psych/psy.htm
Campbell University Buies Creek, NC	http://www.campbell.edu/education/psych/index.html
Catawba College Salisbury, NC	http://www.catawba.edu/dept/psychology/program.htm
Chowan College Murfreesboro, NC	http://www.chowan.edu/acadp/psychology/
Davidson College Davidson, NC	http://www1.davidson.edu/academic/psychology/psych.htm

Duke University Durham, NC	http://www.psych.duke.edu/
East Carolina University Greenville, NC	http://www.artsci.ecu.edu/cas/departments/psyc.html
Elizabeth City State University Elizabeth City NC	http://tep.ecsu.edu/psych/
Elon University Elon, NC	http://www.elon.edu/psychology/
Fayetteville State University Fayetteville, NC	http://www.uncfsu.edu/psychology/
Gardner-Webb University Boiling Springs, NC	http://www.gardner-webb.edu/gwu/main/psych/gwupsych1.html
Greensboro College Greensboro, NC	http://www.gborocollege.edu/academics/departments/psych.html
Guilford College Greensboro, NC	http://www.guilford.edu/Academic/psych.htm
High Point University High Point, NC	http://www.highpoint.edu/academics/behsci/psy/
Johnson C. Smith University Charlotte, NC	http://www.jcsu.edu/psych.html
Lees-McRae College Banner-Elk, NC	http://www.lmc.edu/lmcAcademics/Divisions/BusinessSocialSciences/Psychology.htm
Lenoir-Rhyne College Hickory, NC	http://www.lrc.edu/psy/oldIndex.htm
Livingstone College Salisbury, NC	http://www.livingstone.edu/
Louisburg College Louisburg, NC	http://www.louisburg.edu/
Mars Hill College Mars Hill, NC	http://www.mhc.edu/psychology/
Meredith College Raleigh, NC	http://www.meredith.edu/psych/psych.htm
Methodist College Fayetteville, NC	http://www.methodist.edu/psychology/index.htm
Mount Olive College Mount Olive, NC	http://www.moc.edu/pdf/dept_psych.pdf
North Carolina A&T State University Greensboro, NC	http://www.ncat.edu/~psych/
North Carolina Central University Durham, NC	http://www.nccu.edu/artsci/psychology/psychology.html
North Carolina State University Raleigh, NC	http://www.ncsu.edu/psychology/
North Carolina Wesleyan College Rocky Mount, NC	http://www.ncwc.edu/academic_programs/socialscience/psychology.htm
Peace College Raleigh, NC	http://www.peace.edu/ac_psych.html
North Carolina, University of Chapel Hill, NC	http://www.unc.edu/
North Carolina, University of, at Asheville Asheville, NC	http://www.unca.edu/psychology/
North Carolina, University of, at Charlotte Charlotte, NC	http://www.psych.uncc.edu/index.html
North Carolina, University of, at Greensboro Greensboro NC	http://www.uncg.edu/psy/
North Carolina, University of, at Pembroke Pembroke, NC	http://www.uncp.edu/
North Carolina, University of, at Wilmington Wilmington, NC	http://www.uncwil.edu/psy/
Pfeiffer University Psych major. Misenheimer, NC	http://www.pfeiffer.edu/Departments/deptinfo.cfm?PageID=undergrad&DeptCode=PSYC&Level=Major
Salem College Winston-Salem, NC	http://www.salem.edu/
St. Andrews Presbyterian College Laurinburg, NC	http://www.sapc.edu/academics/psych/academ19.htm
St. Augustine's College Raleigh, NC	http://www.st-aug.edu/
Wake Forest University Winston-Salem, NC	http://psych.wfu.edu/psychology/
Warren Wilson College Psych Courses. Asheville,	http://www.warren-

NC	wilson.edu/catalog/psychology_courses.shtml
Western Carolina University Cullowhee NC	http://www.wcu.edu/ceap/psychology/psychome.htm
Wingate University Wingate, NC	http://www.wingate.edu/academics/psychology/home.asp
Dickinson State University Psych courses. Dickinson, NC	http://www.dsu.nodak.edu/catalog_98/classes/psychology.htm
Jamestown College Jamestown, ND	http://www.jc.edu/scripts/home/academics/psychology.php
Minot State University Minot, ND	http://warp6.cs.misu.nodak.edu/psych/psych1.html
North Dakota, University of Grand Forks, ND	http://www.und.nodak.edu/dept/psychol
North Dakota State University Fargo, ND	http://www.ndsu.nodak.edu/ndsu/psychology/
Trinity Bible College Psychology and Counseling major. Ellendale, ND	http://www.trinitybiblecollege.edu/academics/psychandcounsel.html
University of Mary Bismarck, ND	http://www.umary.edu/AcadInfo/SocBehSci/psychology.asp
Valley City State University Valley City, NC	http://library.vcsu.edu/EduPsych.htm
Antioch College Yellow Springs OH	http://www.antioch-college.edu/Academics/areas/ssc/index.htm
Akron, University of Akron, OH	http://www3.uakron.edu/psychology/
Ashland University Ashland, OH	http://www.ashland.edu/colleges/arts_sci/psych/psych.html
Baldwin-Wallace College Berea, OH	
Bluffton College Bluffton, OH	http://www.bluffton.edu/psy/
Bowling Green State University Bowling Green, OH	http://www.bgsu.edu/departments/psych/
Capital University Columbus, OH	http://www.capital.edu/acad/as/beh/psychology.htm
Case Western Reserve University Cleveland, OH	http://www.cwru.edu/artsci/pscl/index.html
Cedarville University Cedarville, OH	http://www.cedarville.edu/dept/py/index.htm
Central State University Wilberforce, OH	http://www.centralstate.edu/academics/art_sci/psych/dsbs.html
Cincinnati, University of Cincinnati, OH	http://asweb.artsci.uc.edu/psychology/
Cleveland State University Cleveland, OH	http://www.csuohio.edu/psy/index.html
College of Mount St. Joseph Cincinnati, OH	http://www.msj.edu/academics/behs/psych/index.htm
Dayton, University of Dayton, OH	http://www.udayton.edu/~psych/
Defiance College Defiance, OH	http://www.defiance.edu/pages/BASS_majors_psychology.html
Denison University Granville, OH	http://www.denison.edu/psych/
Findlay, University of	http://www.findlay.edu/
Franciscan University of Steubenville Steubenville, OH	http://legacy.franciscan.edu/psychology/index.htm
Franklin University Columbus, OH	http://www.franklin.edu/programs/psych/index_html/vi ew
Heidelberg College Tiffin, OH	http://www.heidelberg.edu/depts/psy/general-track.html
Hiram College Hiram, OH	http://www.hiram.edu/academics/majors/Psychology/index.asp
John Carroll University University Heights, OH	http://www.jcu.edu/psychology/
Kent State University Kent, OH	http://dept.kent.edu/psychology/
Kenyon College Gambier, OH	http://www2.kenyon.edu/depts/psychology/

Lake Erie College Painesville, OH	http://www.lec.edu/
Lourdes College Sylvania, OH	http://www.lourdes.edu/Psychology/index.htm
Malone College Canton, OH	http://www.malone.edu/index.cfm?pid=262
Marietta College Marietta, OH	http://mcnet.marietta.edu/~psyc/
Miami University of Ohio Oxford, OH	http://miavx1.acs.muohio.edu/~psycwis/
Mount St. Joseph, College of Cincinnati, OH	http://www.msj.edu/academics/behs/psych/index.htm
Mount Union College Server down when I checked.	http://www.muc.edu/
Mount Vernon Nazarene College Mount Vernon, OH	http://www.mvnu.edu/academics/natsocsci/psych/psych.html
Muskingum College New Concord, OH	http://muskingum.edu/~psychology/index.htm
Northwestern Ohio, University of Lima, OH	http://www.unoh.edu/
Notre Dame College South Euclid, OH	http://www.notredamecollege.edu/search.html
Oberlin College Oberlin, OH	http://www.oberlin.edu/psych/graphic.html
Ohio Dominican College Columbus, OH	http://www.ohiodominican.edu/catalog_2003/undergraduate/degree_program_info/psychology/index.shtml
Ohio Northern University Ada, OH	http://www.onu.edu/A+S/psychology/
Ohio State University Columbus, OH	http://www.psy.ohio-state.edu/
Ohio Wesleyan University Delaware, OH	http://cc.owu.edu/~psycweb/index.html
Ohio State University - Lima Lima, OH	http://www.lima.ohio-state.edu/academics/psychology/index.htm
Ohio State University - Mansfield Mansfield, OH	http://psych.mansfield.ohio-state.edu/
Ohio State University - Marion Marion, OH	http://www.marpsy.net/
Ohio University Athens, OH	http://www.psych.ohiou.edu/
Otterbein College Westerville, OH	http://www.otterbein.edu/dept/psyc/
Rio Grande, University of Rio Grande, OH	http://www.rio.edu/socialsciences/PSY/Default.htm
Shawnee State University Portsmouth, OH	http://146.85.50.30/academics/educ/aya_integrated_socstudies.html
Tiffin University Tiffin, OH	http://www.tiffin.edu/livepages/202.shtml
Toledo, University of School Psychology. Toledo, OH	http://cmhs.utoledo.edu/Programs/Schl-Psy/school_psych_intro.htm
Union Institute & University Professional Psychology. Cincinnati, OH	http://www.tui.edu/prospective/phd/psy/default.asp?strLink=Bb.3.2
Ursuline College Pepper Pike, OH	http://www.ursuline.edu/acadaff/psychology.htm
Walsh University North Canton, OH	http://www.walsh.edu/maincategory.php?cid=11
Wilberforce University Wilberforce, OH	http://www.wilberforce.edu/opencms/export/bulldog/areas/soc/psychology.htm
Wilmington College Wilmington, OH	http://www.wilmington.edu/psych.htm
Wittenberg University Springfield, OH	http://www4.wittenberg.edu/academics/psyc/
Wooster, The College of Wooster, OH	http://www.wooster.edu/psychology/
Wright State University Dayton, OH	http://www.psych.wright.edu/index.htm
Xavier University at Cincinnati Cincinnati, OH	http://www.xu.edu/psychology_dept/
Youngstown State University Youngstown, OH	http://www.as.yzu.edu/~psyc/
Cameron University Lawton, OK	http://www.cameron.edu/academic/education/psych_human_ecology/index.html
Central Oklahoma, University of Edmond, OK	http://www.educ.ucok.edu/psy/
East Central University Ada, OK	http://www.ecok.edu/dept/psych/

Langston University Langston, OK	http://www.lunet.edu/educ2.html
Northeastern State University Tahlequah, Broken Arrow, Muskogee, Tulsa. OK	http://arapaho.nsuok.edu/~psyc/
Oklahoma, University of Norman, OK	http://www.ou.edu/cas/psychology/
Oklahoma Baptist University Shawnee, OK	http://www.okbu.edu/psychology/index.html
Oklahoma Christian University of Science & Arts Oklahoma City, OK	http://www.oc.edu/academics/default_001.aspx
Oklahoma City University Psych major. Oklahoma City, OK	http://www.youatocu.com/psychologymajor/default.asp
Oklahoma Health Sciences Center Oklahoma City, OK	http://w3.ouhsc.edu/psbs/
Oklahoma State University Stillwater, OK	http://psychology.okstate.edu/
Oklahoma State University - Tulsa campus Tulsa, OK	http://tulsa.okstate.edu/
Oral Roberts University Department of Behavioral Sciences. Tulsa OK	http://www.oru.edu/university/departments/schools/arts/behsci/
Rogers State University Psych minor. Claremore, OK	http://www.rsu.edu/academics/bulletins/bulletin.asp?Y=current&P=minPsychology
Science & Arts of Oklahoma, University of Chickasha	http://www.usao.edu/~usao-psychology/
Southeastern Oklahoma State University Durant, OK	http://www.sosu.edu/departments/psychology/
Southern Nazarene University Bethany, OK	http://www.snu.edu/psychology
Southwestern Oklahoma State University Weatherford, OK	http://www.swosu.edu/depts/psych/
St. Gregory's University Shawnee, OK	http://www.stgregorys.edu/
Tulsa, University of Tulsa, OK	http://www.cas.utulsa.edu/psych/2003update/uoverview2003update.html
Concordia University-Portland Portland, OR	http://www.cu-portland.edu/ctas/socialsci/psych.cfm
Eastern Oregon University La Grande, OR	http://www.eou.edu/psych/
George Fox University Newberg, OR	http://www.georgefox.edu/academics/undergrad/departments/psychology/JURP/index.html
Lewis & Clark College Portland, OR	http://www.lclark.edu/~psych/
Linfield College Linfield, OR	http://www.linfield.edu/psycho/index.html
Marylhurst University Psych major. Marylhurst, OR	http://www.marylhurst.edu/attend/undergrad/psych-content.html
Oregon, University of Eugene OR	http://psychweb.uoregon.edu/
Oregon Health Sciences University Behavioral Neuroscience graduate program. Portland, OR	http://www.ohsu.edu/behneuro/Program.html
Oregon Institute of Technology Applied Psychology. Klamath Falls, Portland, OR	http://www.oit.edu/psy
Oregon State University Corvallis, OR	http://oregonstate.edu/dept/psychology/
Pacific University Forest Grove, OR	http://www.pacificu.edu/academics/as/social/psychology/
Portland, University of Portland, OR	http://www.up.edu/up_sub.asp?cntnt=356&mnu=40&chl=50&lvl=2
Portland State University Portland, OR	http://www.psy.pdx.edu/
Reed College Portland, OR	http://academic.reed.edu/psychology/
Southern Oregon University Ashland, OR	http://www.sou.edu/psych/index.htm
Warner Pacific College Developmental Psychology.	http://www.warnerpacific.edu/academics/department

Portland, OR	s/SocialScience/Program/psych_program.asp
Western Baptist College Salem, OR	http://www.wbc.edu/academics/psychology/index.htm
Western Oregon University Monmouth, OR	http://www.wou.edu/liberalartsscience/socialscience/psych/
Willamette University Salem, OR	http://www.willamette.edu/cla/psychology/
Albright College Reading, PA	http://www.albright.edu/catalog/psych.html
Allegheny College Meadville, PA	http://www.allegheny.edu/academics/psych/
Alvernia College Reading, PA	http://www.alvernia.edu/academics/psych/
Arcadia University Glenside, PA	http://gargoyle.arcadia.edu/psychology/
Bloomsburg University Bloomsburg, PA	http://departments.bloomu.edu/psych/
Bryn Mawr College Bryn Mawr, PA	http://www.brynmawr.edu/psychology/
Bucknell University Lewisburg, PA	http://www.departments.bucknell.edu/psychology/
Cabrini College Radnor, PA	http://www.cabrini.edu/Secondary/Academic/default.asp
California University of Pennsylvania California, PA	http://www.cup.edu/liberalarts/psychology/
Carlow College Pittsburg, PA	http://www.carlow.edu/academic/psychtheology.html
Carnegie Mellon University Pittsburg, PA	http://www.psy.cmu.edu/
Cedar Crest College Allentown, PA	http://www2.cedarcrest.edu/academic/psy/
Chatham College Pittsburg, PA	http://www.chatham.edu/undergraduate/psych/
Cheyney University Cheyney, PA	http://www.cheyney.edu/cheyney.asp?page=Social%20Behavioral%20Sciences%20BA%20Psychology&sec=School%20of%20Arts%20and%20Sciences
Clarion University of Pennsylvania Clarion, PA	http://psy1.clarion.edu/
Delaware Valley College Psych minor. Doylestown, PA	http://www.devalcol.edu/academics/undergrad/psych.html
DeSales University Center Valley, PA	http://www.desales.edu/servlet/RetrievePage?site=Desalesu&page=acadpsychologydept
Dickinson College Carlisle, PA	http://cfserv.dickinson.edu/academics/program.cfm?psychology
Drexel University Philadelphia PA	http://www.psychology.drexel.edu/
Duquesne University Pittsburgh, PA	http://www.psychology.duq.edu/
East Stroudsburg University of Pennsylvania East Stroudsburg, PA	http://www3.esu.edu/academics/psychology.asp
Eastern College St. Davids, PA	http://eastern.edu/academic/trad_undg/sas/depts/psychology/index.html
Edinboro University Edinboro, PA	http://www.edinboro.edu/cwis/psych/Psych_Menu.html
Elizabethtown College Elizabethtown, PA	http://www.etown.edu/psychology/
Franklin & Marshall College Lancaster, PA	http://www.fandm.edu/Departments/Psychology/Psychology.html
Gannon University Erie, PA	http://www.gannon.edu/resource/dept/psych/
Geneva College Beaver Falls, PA	http://www.geneva.edu/academics/undergraduate/psych/index.html
Gettysburg College Gettysburg, PA	http://www.gettysburg.edu/academics/psych/NewPages/index-ra.html
Grove City College Grove City, PA	http://www.gcc.edu/academics/artsletters/psychology/default.htm
Gwynedd Mercy College Gwynedd Valley, PA	http://www.gmc.edu/academics/schools/arts_scienc/e/academics/degrees/psychology.htm

Haverford College in Pennsylvania Haverford, PA	http://www.haverford.edu/psych/
Holy Family University Philadelphia, PA	http://www.holyfamily.edu/school_arts/under_progd_esc4.html
Immaculata College Immaculata, PA	http://www.immaculata.edu/psychology/
Indiana University of Pennsylvania Indiana, PA	http://www.iup.edu/psychology/
Juniata College Huntingdon, PA	http://departments.juniata.edu/psychology/
King's College Wilkes-Barre, PA	http://www.kings.edu/psychology/
Kutztown University Kutztown, PA	http://www.kutztown.edu/academics/liberal_arts/psychology/index.shtml
La Roche College Pittsburgh, PA	http://www.laroche.edu/schools/arts-sciences/DisciplineDetail.asp?DisciplineID=41
Lafayette College Easton, PA	http://www.lafayette.edu/allanr/psych.html
La Salle University Philadelphia PA	http://www.lasalle.edu/~collins/psych/
Lebanon Valley College Annville, PA	http://www.lvc.edu/psychology/programs.aspx
Lehigh University Bethlehem, PA	http://www.lehigh.edu/~inpsy/inpsy.html
Lincoln University Lincoln University, PA	http://www.lincoln.edu/psychology/index.html
Lock Haven University of Pennsylvania Lock Haven PA	http://www.lhup.edu/psychology/index.htm
Lycoming College Williamsport, PA	http://www.lycoming.edu/admiss/dept/psyc.htm
Mansfield University Mansfield, PA	http://www.mnsfld.edu/depts/psycholo/index.html
Marywood University Scranton, PA	http://www.marywood.edu/departments/psychology/psych_dept.htm
Mercyhurst College Erie, PA	http://www.mercyhurst.edu/undergraduate/academic-programs/index.php?pt=psychology
Messiah College Grantham, PA	http://www.messiah.edu/departments/psy/index.shtml
Millersville University of Pennsylvania Millersville, PA	http://muweb.millersville.edu/~psych/
Misericordia Dallas, PA	http://www.miseri.edu/templates/alltemps.cfm?cat_id=291&pg=1
Moravian College Bethlehem, PA	http://www.moravian.edu/academics/departments/psychology/index.htm
Mount Aloysius College Cresson, PA	http://www.mtaloy.edu/psych.htm
Muhlenberg College Allentown, PA	http://www.muhlberg.edu/depts/psychology/
Neumann College Aston PA	http://www.neumann.edu/academics/undergrad/psychology/index.asp
Pennsylvania College of Technology Psych Courses. Williamsport, PA	http://www.pct.edu/courdesc/PYPELC.SHTML
Pennsylvania State University "Penn State" University Park (main campus)	http://www.psu.edu/
Pennsylvania State University - Abington Abington, PA	http://www.abington.psu.edu/academics/psyc.asp
Pennsylvania State University - Altoona Altoona, PA	http://www.aa.psu.edu/psych/
Pennsylvania State University - Beaver Monaca, PA	http://www.br.psu.edu/degrees/apsyc/
Pennsylvania State University - Behrend Erie, PA	http://www.pserie.psu.edu/academic/hss/degrees/psych/index.htm
Pennsylvania State University - Berks/Lehigh Valley Fogelsville, PA	http://www.bklv.psu.edu/academic/apsyc/apsyc.html
Pennsylvania State University - Harrisburg Middletown, PA	http://www.hbg.psu.edu/hbg/programs/undergrad/psyc.html

Pennsylvania State University - McKeesport McKeesport, PA	http://www.mk.psu.edu/academics/ac_sub_apm_ba_ap.htm
Pennsylvania State University - New Kensington Upper Burrell, PA	http://www.nk.psu.edu/psych/current/template_ssi.html
Pennsylvania State University - Schuylkill Middletown, PA	http://www.sl.psu.edu/programs/psyc.html
Pennsylvania, University of Philadelphia, PA	http://www.psych.upenn.edu/
Philadelphia, University of the Sciences in Philadelphia, PA	http://www.usip.edu/majors/psychology.shtml
Philadelphia University Philadelphia, PA	http://www.philau.edu/schools/ssh/Ugrad_Majors/Psychology/Psychology.htm
Pittsburgh, University of Pittsburgh, PA	http://www.pitt.edu/~psych/
Pittsburgh, University of, at Johnstown Johnstown, PA	http://www.pitt.edu/~upjpsych
Pittsburgh, University of, at Bradford Bradford, PA	http://www.upb.pitt.edu/academics/programs/psychology_maj/index.htm
Pittsburgh, University of, at Greensburg Greensburg, PA	http://www.upg.pitt.edu/_Pages/_pg_Academics/_pg_Divisions/pg_Behavioral.htm
Point Park Morris College Pittsburgh, PA	http://www.ppc.edu/hhs/psyc.shtml
Rosemont College Rosemont, PA	http://www.rosemont.edu/root/womens_college/academics/psychology.html
Saint Francis College in Pennsylvania Loretto, PA	http://faculty.sfcpa.edu/sking/
Saint Joseph's University Philadelphia, PA	http://psychology.sju.edu/
Saint Vincent College LaTrobe, PA	http://www.stvincent.edu/academics/psychology.html
Seton Hill University Greensburg, PA	http://www.setonhill.edu/academics/index.cfm?ACID=123&T1=151&T2=318
Shippensburg University of Pennsylvania Shippensburg, PA	http://www.ship.edu/catalog/ug/artspych.html
Slippery Rock University Slippery Rock, PA	http://www.sru.edu/depts/artsci/psych/
Susquehanna University Selinsgrove, PA	http://www.susqu.edu/psychology/
Swarthmore College Swarthmore, PA	http://www.swarthmore.edu/
Temple University Philadelphia PA	http://www.temple.edu/psychology/
Thiel College Greenville, PA	http://www.thiel.edu/academics/psychology/default.htm
Thomas Jefferson University Department of Psychiatry and Human Behavior. Philadelphia, PA	http://www.jefferson.edu/psych/home/index.cfm
Scranton, University of Scranton, PA	http://matrix.scranton.edu/academics/ac_factsheet_psychology.shtml
Ursinus College Collegeville, PA	http://www.ursinus.edu/content.asp?page=AcademicPrograms/psychology.html
Villanova University Villanova, PA	http://www.psychology.villanova.edu/
Washington and Jefferson College Washington, PA	http://www.washjeff.edu/major_psychology.html
Waynesburg College	http://www.waynesburg.edu/
West Chester University West Chester, PA	http://www.wcupa.edu/_ACADEMICS/sch_cas.psy/default.htm
Westminster College New Wilmington, PA	http://www.psych.westminster.edu/
Widener University Chester, PA	http://www.science.widener.edu/ssci/psydepartment.html
Widener University Chester, PA	http://www.widener.edu/

Wilkes University Wilkes-Barre, PA	http://www.wilkes.edu/academics/edpsych/psych/default.asp
Wilson College Chambersburg, PA	http://www.wilson.edu/Academics/programs/behavior/index.htm
York College of Pennsylvania York, PA	http://www.ycp.edu/academics/495.htm
Brown University Providence, RI	http://www.brown.edu/Departments/Psychology/
Bryant College Smithfield, RI	http://web.bryant.edu/~psych/
Providence College Providence, RI	http://www.providence.edu/psy/index.html
Rhode Island, University of Kingston, RI	http://www.uri.edu/artsci/psy/
Rhode Island College Providence, RI	http://www.ric.edu/psychology/tpd.htm
Roger Williams University Bristol, RI	http://www.rwu.edu/Academics/Academic+Programs/Feinstein+College+of+Arts+and+Science/Psychology.htm
Salve Regina University Newport, RI	http://inside.salve.edu/walsh/newpsypages/newpsyhome.html
Anderson College	http://www.anderson-college.edu/
Benedict College Columbia, SC	http://www.benedict.edu/divisions/acadaf/sch-humanities/soc_sci/psy/bc-psy.html
Bob Jones University Greenville, SC	http://www.bju.edu/academics/ubulletin/education/psychology/index
Charleston, College of [South Carolina] Charleston, SC	http://www.cofc.edu/~psycdept/
Charleston Southern University Charleston, SC	http://www.csuniv.edu/Academics/Behavioral/psychmajor.html
Citadel, The Charleston, SC	http://www.citadel.edu/citadel/otherserv/psyc/
Clemson University Clemson, SC	http://www.clemson.edu/psych/
Coastal Carolina University Conway, SC	http://www.coastal.edu/psychology/
Columbia College Columbia, SC	http://www.columbiacollegesc.edu/academics/humanrelations/index.html
Converse College Spartanburg, SC	http://www.converse.edu/Academics/majors/psychologyMain.asp
Erskine College Due West, SC	http://www.erskine.edu/academics/psychology/
Francis Marion University Florence, SC	http://alpha1.fmarion.edu/psych/
Furman University Greenville, SC	http://www.furman.edu/academics/dept/psych.htm
Lander University Greenwood, SC	http://www.lander.edu/psychology/
Limestone College Gaffney, SC	http://www.limestone.edu/sfs/acad/social/psy.htm
Medical University of South Carolina Clinical Psychology Internship. Charleston, SC	http://www.musc.edu/cvc/intern1.html
Newberry College Newberry, SC	http://www.newberry.edu/academics/majors/psychology.asp
North Greenville College	http://www.ngc.edu/
Presbyterian College Clinton, SC	http://www.presby.edu/acad/dept/pysch.htm
Sherman College of Straight Chiropractic	http://www.sherman.edu/
South Carolina, University of Columbia, SC	http://www.cla.sc.edu/PSYC/
South Carolina, University of, at Aiken Aiken, SC	http://www.usca.edu/psychology/psych.html
South Carolina, University of, at Spartanburg Spartanburg, SC	http://www.uscs.edu/academic/colla&s/social/psych/index.htm
South Carolina State University Orangeberg, SC	http://www.scsu.edu/Psy&Soc/
Winthrop University Rock Hill, SC	http://www.winthrop.edu/psychology/

Wofford College Spartanburg, SC	http://www.wofford.edu/psychology/default.asp
Augustana College Sioux Falls, SD	http://www.augie.edu/dept/courses/psychology.html
Black Hills State University Spearfish, SD	http://www.bhsu.edu/artssciences/psychology/index.html
Dakota Wesleyan University Mitchell, SD	http://www.dwu.edu/catalog/courses/psychology.htm
Mount Marty College Yankton, SD	http://www.mtmc.edu/academics/division/psychology/
Northern State University Aberdeen, SD	http://www.northern.edu/soe/psychology/index.html
Oglala Lakota College Human Services degree. Kyle, SD	http://humserv.olc.edu:6080/dept.htm
Sioux Falls, University of	http://www.usiouxfalls.edu/academic/psych/psycholo.html
South Dakota, University of Vermillion, SD	http://www.usd.edu/psyc/
South Dakota State University Brookings, SD	http://www3.sdstate.edu/Academics/CollegeOfArtsAndScience/Psychology/Index.cfm
Austin Peay State University Clarksville, TN	http://www.apsu.edu/psychology/
Belmont University Nashville, TN	http://www.belmont.edu/psychology/
Bethel College McKenzie, TN	http://www.bethel-college.edu/academics/divisions/psymajor.htm
Bryan College Dayton, TN	http://www.bryan.edu/prospect/index.php?location=academic/departments/psychology-main.html
Carson-Newman College Jefferson City, TN	http://www.cn.edu/site/NS_subsites/Psychology/Home_Psychology.html
Christian Brothers University Memphis, TN	http://www.cbu.edu/arts/psych/psycat.html
Crichton College Memphis, TN	http://www.crichton.edu/Academics/education/psychology.htm
Cumberland University Lebanon, TN	http://www.cumberland.edu/academics/science/psych/main.html
East Tennessee State University Johnson City, TN	http://www.etsu.edu/psychology/
Fisk University Nashville, TN	http://www.fisk.edu/index.asp?cat=17&parent=180&pid=376
Johnson Bible College Knoxville, TN	http://www.jbc.edu/library/psychology_%26_counseling.htm
King College Bristol, TN	http://www.king.edu/Academics/SOAS/Psychology/index.htm
Knoxville College Server down	http://www.knoxvillecollege.edu/
Lambuth University Jackson, TN	http://www.lambuth.edu/academics/socialsciences/psychology/index.html
Lee University Cleveland, TN	http://flame.leeuniversity.edu/behavandsocsci/
LeMoyne-Owen College Server down	http://www.lemoyne-owen.edu/
Lincoln Memorial University Harrogate, TN	http://www.lmunet.edu/academics/undergrad/socscience/Psychology/index.htm
Lipscomb University Nashville, TN	http://psychology.lipscomb.edu/
Martin Methodist College Pulaski, TN	http://www.martinmethodist.edu/academics/psychology.html
Maryville College Maryville, TN	http://www.maryvillecollege.edu/academics/catalog/degrees/degree.asp?did=42
Memphis, University of Memphis, TN	http://www.psyc.memphis.edu./psych.htm
Middle Tennessee State University Murfreesboro,	http://www.mtsu.edu/~psycholo/

TN	
Milligan College Milligan College, TN	http://www.milligan.edu/academics/Catalog/psychology.htm
Motlow State Community College Server down. Tullahoma TN	http://www.mscc.cc.tn.us/psy/
Rhodes College Memphis, TN	http://www.rhodes.edu/psych/index.htm
Sewanee: The University of the South Sewanee, TN	http://www.sewanee.edu/Psychology/
Southern Adventist University Collegedale, TN	http://www.southern.edu/?page=academics/departments/education_psychology.php
Southern College Collegedale, TN	http://www.southern.edu/
Tennessee, University of Knoxville, TN	http://web.utk.edu/~jlawler/
Tennessee, University of, at Chattanooga Industrial and Organizational Psychology. Chattanooga, TN	http://cecasun.utc.edu/~psypage/
Tennessee, University of, at Martin Martin, TN	http://www.utm.edu/departments/artsci/ppr/psych/psy.html
Tennessee, University of, Health Science Center Boling Center for Developmental Disabilities. Memphis, TN	http://webster.utmem.edu/bcdd/training/prof_programs/psychology.htm
Tennessee State University Nashville, TN	http://www.tnstate.edu/psyc/default.htm
Tennessee Tech Cookeville, TN	http://plato.ess.tntech.edu/sspp/
Tennessee Temple University Chattanooga, TN	http://www.tntemple.net/files/academics/departments/psychology.htm
Tennessee Wesleyan College Athens, TN	http://www.twcnet.edu/academics/behavior/default.html
Trevecca Nazarene University Nashville, TN	http://www.trevecca.edu/schools/arts.sciences/social.behavioral.sciences/index.html
Union University Jackson, TN	http://www.uu.edu/union/academ/psych/index.htm
Vanderbilt University Nashville, TN	http://sitemason.vanderbilt.edu/psychology
Abilene Christian Abilene, TX	http://www.acu.edu/academics/cas/psychology.html
Angelo State University San Angelo, TX	http://www.angelo.edu/dept/psychology_sociology/
Austin College Sherman, TX	http://artemis.austincollege.edu/acad/psych/
Baylor College of Medicine Residencies and internships. Houston, TX	http://www.bcm.tmc.edu/departments/psychiatry.htm
Baylor University Waco, TX	http://www3.baylor.edu/Psychology/
Concordia University Austin Austin, TX	http://www.concordia.edu/html/academic/liberal_arts/behavioral_science.htm
Dallas, University of Irving, TX	http://www.udallas.edu/psychology/
Dallas Baptist University Dallas, TX	http://www.dbu.edu/humanities/psychology.asp
East Texas Baptist University Marshall, TX	http://www.etbu.edu/Academics/Semester+by+Semester+Plans/School+of+Natural+and+Social+Sciences/Behavioral+Sciences/default.htm
Hardin-Simmons University Abilene, TX	http://www.hsutx.edu/academics/psychology/index.html
Houston, University of Houston, TX	http://www.uh.edu/academics/catalog/las/las_degree_psyc.html
Houston, University of Department of Educational Psychology. Houston, TX	http://www.coe.uh.edu/departments/epsy.cfm
Houston, University of - Downtown campus Houston, TX	http://www.uhd.edu/academic/colleges/humanities/sos/psychology.htm
Houston, University of - Victoria Victoria, TX	http://www.uhv.edu/pro/selfstudy/psych.htm

Houston Baptist University Houston, TX	http://www.hbu.edu/Pages/acad/H2GGpsyc.html
Houston Community College System - Southwest College Stafford, TX	http://swc2.hccs.cc.tx.us/psych/
Howard Payne University Brownwood, TX	http://www.hputx.edu/Academic/Psych.HTM
Incarnate Word, University of the San Antonio, TX	http://www.uiw.edu/degreeplans/degreeprofilepdfs/psychologydegreeprofile.pdf
Lamar University Beaumont, TX	http://dept.lamar.edu/artssciences/psychology/pl.html
LeTourneau University Longview TX	http://www.letu.edu/opencms/opencms/future-students/ft-undergrad/academics/psychology/index.html
Lubbock Christian University Lubbock, TX	http://www.lcu.edu/psych.asp
Mary Hardin-Baylor, University of Belton, TX	http://www2.umhb.edu/catalog/departments_view.php?departments_id=119
McMurry University Abilene, TX	http://www.mcm.edu/academic/depts/psychsoc/psychoho.htm
Midwestern State University Wichita Falls, TX	http://libarts.mwsu.edu/psychology/index.asp
North Texas, University of Denton, TX	http://www.psyc.unt.edu/
North Texas, University of, Health Science Center Division of Health Psychology (pdf). Fort Worth, TX	http://www.hsc.unt.edu/departments/familymed/documents/newsletter/news20040227.pdf
Our Lady of the Lake University San Antonio, TX	http://www.ollusa.edu/academic/secs/psychology/
Prairie View A&M University Prairie View, TX	http://acad.pvamu.edu/content/juv_just/psychology.html
Rice University Houston, TX	http://www.ruf.rice.edu/~psyc/
Sam Houston State University Huntsville, TX	http://www.shsu.edu/~psy_www/index2.htm
Schreiner College Kerrville, TX	http://www.schreiner.edu/ACADEMICS/PSYCHOLOGY.html
Southern Methodist University Dallas, TX	http://www.smu.edu/psychology/
Southwest Texas State University	http://www.psych.swt.edu/
Southwestern Adventist University Keene, TX	http://ed.swau.edu/
Southwestern Assemblies of God University "Psychology coming soon." Waxahachie, TX	http://www.sagu.edu/acad-depts/
Southwestern University Georgetown, TX	http://www.southwestern.edu/~giuliant/psychology.html
St. Edward's University Austin, TX	http://www.stedwards.edu/bss/psycdpg.htm
St. Mary's University San Antonio, TX	http://www.stmarytx.edu/acad/psychology/
St. Thomas, University of Houston, TX	http://www.stthom.edu/psychology/
Stephen F. Austin State University Nacogdoches, TX	http://www.sfasu.edu/sfapsych/front.html
Sul Ross State University Alpine, TX	http://www.sulross.edu/pages/722.asp
Texas A&M University College Station, TX	http://psychweb.tamu.edu/
Texas A&M University at Commerce Commerce, TX	http://www7.tamu-commerce.edu/psychology/
Texas A&M University at Corpus Christi Corpus Christi, TX	http://www.tamucc.edu/~psychweb/
Texas A&M University at Kingsville Kingsville, TX	http://www.tamuk.edu/psycsoci/
Tarleton State University Stephenville, TX	http://www.tarleton.edu/~dpce/
Texas Christian University Fort Worth, TX	http://www.psy.tcu.edu/
Texas Tech University Lubbock, TX	http://www.depts.ttu.edu/psy/
Texas Woman's University Denton, TX	http://www.twu.edu/as/psyphil/spcc/

Texas, University of, at Arlington Arlington, TX	http://www.uta.edu/psychology/
Texas, University of, at Austin Austin, TX	http://www.psy.utexas.edu/
Texas, University of, at Brownsville	http://unix.utb.edu/~cla/behsci.html
Texas, University of, at Dallas Richardson, TX	http://www.utdallas.edu/dept/hd/
Texas, University of, at El Paso El Paso, TX	http://www.utep.edu/~psych/welcome.html
Texas, University of, at Pan American Edinburg, TX	http://www.panam.edu/dept/gsprogram/
Texas, University of, at Permian Basin Odessa, TX	http://www.utpb.edu/artsci/psyc/psyc.htm
Texas, University of, at San Antonio San Antonio, TX	http://colfa.utsa.edu/psych/index.html
Texas, University of, Pan-American campus Psychology & Anthropology	http://www.panam.edu/dept/psych-anth/psyindex.html
Texas Christian University Fort Worth, TX	http://www.psy.tcu.edu/frogban.jpg
Texas Lutheran University Seguin, TX	http://www.tlu.edu/academics/psychology/summary.html
Texas Southern University Houston, TX	http://www.tsu.edu/academics/arts/program/psychology.asp
Texas State University-San Marcos San Marcos, TX	http://www.psych.txstate.edu/index2.shtml
Texas Tech Health Sciences Center International Pain Institute. Lubbock, TX	http://www.ttuhsc.edu/som/anesthesiology/anesinstitute/index.html
Texas Tech University Lubbock, TX	
Texas Wesleyan University Fort Worth, TX	http://www.txwesleyan.edu/
Texas Woman's University Denton, TX	http://www.twu.edu/as/psyphil/INDEX.HTM
Trinity University San Antonio, TX	http://www.trinity.edu/departments/psychology/index.html
Texas, University of, at Tyler Tyler, TX	http://www.uttyler.edu/psychology/
Texas, University of, Health Science Center at Houston Psychology Residency Program. Houston, TX	http://www.uth.tmc.edu/schools/med/psychiatry/msi/psychology/psychologyres.htm
Texas, University of, Health Science Center at San Antonio Psychology training in clinical psychology. San Antonio, TX	http://www.uthscsa.edu/
Texas, University of, Medical Branch at Galveston Postdoctoral Training in Clinical Psychology. Galveston, TX	http://www.utmb.edu/
Texas, University of, Southwestern Medical Center at Dallas Graduate Program in Clinical Psychology. Dallas, TX	http://www3.utsouthwestern.edu/
Wayland Baptist University Plainview, TX	http://www.wbu.edu/b/b13/prog.htm
West Texas A&M University Canyon, TX	http://www.wtamu.edu/academic/catalog/01-02/grad/ess/beh.htm
Brigham Young University Provo, UT	http://www.byu.edu/~psychweb
College of Eastern Utah Price, Utah	http://www.ceu.edu/
Southern Utah University Cedar City, UT	http://www.suu.edu/hss/psychology/
Utah, University of Salt Lake City, UT	http://www.psych.utah.edu/frontpage/index.html
Utah State University Logan, UT	http://www.coe.usu.edu/psyc/
<>Orem, UT	http://www.uvsc.edu/besc/
Weber State University Ogden, UT	http://departments.weber.edu/psychology/
Westminster College Salt Lake City, UT	http://www.westminstercollege.edu/psychology/
Bennington College Bennington	http://www.bennington.edu/education/interdisciplinary

	y/courses/psychology.htm
Burlington College Burlington, VT	http://www.burlcol.edu/c_1_b_5.htm
Castleton State College Castleton	http://www.csc.vsc.edu/psych/index.htm
Champlain College Burlington, VT	http://www.champlain.edu/
Goddard College Diverse psychology-related degrees. Plainfield, VT	http://www.goddard.edu/academic/
Green Mountain College Poultney, VT	http://www.greenmtn.edu/learning/catalog/behavioral_science.asp
Johnson State College Johnson, VT	http://www.johnsonstatecollege.edu/academics/559.html
Lyndon State College Lyndonville, VT	http://www.lyndonstate.edu/intranet/academics/acaddept/psy/
Marlboro College Marlboro, VT	http://www.marlboro.edu/academics/study/psychology/
Middlebury College Middlebury, VT	http://www.middlebury.edu/~psych/
Norwich University Northfield, VT	http://www.norwich.edu/socsci/psychology/
Southern Vermont College Bennington, VT	http://www.svc.edu/academics/divisions/psychology.html
St. Michael's College Celchester, VT	http://www.smcvt.edu/_noside.asp?SiteAreaID=334&Level=1
St. Joseph, College of Rutland, VT	http://www.csj.edu/acad-psyhus.html
Trinity College of Vermont (closed September 2000)	http://www.trinityvt.edu/
Vermont, University of Burlington, VT	http://www.uvm.edu/~psych/PsychAtUVM/Department.html
Averett College Danville, VA	http://www.averett.edu/html/psychology.html
Bridgewater College Bridgewater, VA	http://www.bridgewater.edu/departments/psychology/psychology.html
Christendom College Front Royal, VA	http://www.christendom.edu/
Christopher Newport University Newport News, VA	http://www.cnu.edu/psych/
William and Mary, College of Williamsburg, VA	http://www.wm.edu/PSYC/index.html
Eastern Mennonite University Harrisonburg, VA	http://www.emu.edu/psychology/
Eastern Virginia Medical School Psychiatry and behavioral sciences. Norfolk, VA	http://www.evms.edu/psychiatry/index.html
Emory & Henry College Emory, VA	http://www.ehc.edu/cgi-bin/MySQLdb?MYSQL_VIEW=/academics/view.txt&currentdept=35
Ferrum College Ferrum, VA	http://www.ferrum.edu/majors/psycholo.htm
George Mason University Fairfax, VA	http://cas.gmu.edu/undergraduate_students/minors/psychology/index.html
George Washington University-Virginia Campus Center for the Study of Learning. Ashburn, VA	http://chaos.va.gwu.edu/cslprog/csl.html
Hampden-Sydney College Hampden Sydney, VA	http://www.hsc.edu/fac/psychology/
Hampton University Hampton, VA	http://www.hamptonu.edu/arts_edu/soc_behav/psychology/
Hollins University Roanoke, VA	http://www.hollins.edu/
James Madison University Harrisonburg, VA	http://www.psyc.jmu.edu/
Liberty University Lynchburg, VA	http://www.liberty.edu/Academics/Arts-Sciences/Psychology/index.cfm?PID=192
Longwood College Farmville, VA	http://web.longwood.edu/catalog/2001/Psychology.htm

Lynchburg College	http://www.lynchburg.edu/public/academic/psych/index.htm
Mary Baldwin College Staunton, VA	http://www.mbc.edu/academic/departments/psyc.asp
Mary Washington College Fredericksburg, VA	http://www.mwc.edu/psyc/index.php
Marymount University Arlington, VA	http://www.marymount.edu/academic/sehs/ps/
Norfolk State University Norfolk, VA	http://www.nsu.edu/schools/liberalarts/psychology/programs.html
Old Dominion University Norfolk, VA	http://www.psychology.odu.edu/psych.htm
Radford University Radford, VA	http://www.runet.edu/~psyc-web/
Randolph-Macon College Ashland, VA	http://www.rmc.edu/directory/academics/psyc/index.asp
Randolph-Macon Woman's College Lynchburg, VA	http://www.rmwc.edu/academics/majors/psychology.asp
Regent University Virginia Beach, VA	http://www.regent.edu/acad/schcou/
Richmond, University of University of Richmond, VA	http://www.urich.edu/~psych/
Roanoke College Salem, VA	http://www2.roanoke.edu/psych
Shenandoah University Winchester, VA	http://www.su.edu/academic.cfm?program=Psychology
Sweet Briar College Sweet Briar, VA	http://www.psychology.sbc.edu/
Virginia, University of Charlottesville, VA	http://www.virginia.edu/psychology/
Virginia, University of, College at Wise Psych major. Wise, VA	http://www.wise.virginia.edu/socibeh_sciences/degrees.html
Virginia Commonwealth University Richmond, VA	http://www.has.vcu.edu/psy/index.html
Virginia Intermont College Bristol, VA	http://www.vic.edu/academics/degrees/social_sciences/psychology/index.shtml
Virginia Military Institute Lexington, VA	http://www.vmi.edu/departments.asp?durki=1310
Virginia State University Petersburg, VA	http://www.vsu.edu/psych.html
Virginia Tech (Virginia Polytechnic Institute and State University) Blacksburg, VA	http://www.psyc.vt.edu/
Virginia Union University Social Sciences (pdf). Richmond, VA	http://www.vuu.edu/academics/socialsciences.pdf
Virginia Wesleyan College Norfolk, VA	http://www.vwc.edu/academics/programs/psych.htm
Washington & Lee University Lexington, VA	http://thecollege.wlu.edu/departments/department.asp?departmentname=psychology
William and Mary, College of	http://thecollege.wlu.edu/departments/department.asp?departmentname=psychology
Antioch University-Seattle	http://www.seattleantioch.edu/
Bastyr University Health Psychology. Kenmore, WA	http://www.bastyr.edu/academic/counseling/curriculum.asp?track=1
Big Bend Community College Moses Lake, WA	http://www.bbcc.ctc.edu/psych/
Central Washington University Ellensburg, WA	http://www.cwu.edu/~psych/
City University Bellevue, WA	http://www.cityu.edu/
Eastern Washington University Cheney, WA	http://www.ewu.edu/csbs/depts/psyc/programs.html
Gonzaga University Spokane, WA	http://www.gonzaga.edu/Academics/Colleges+and+Schools/College+of+Arts+and+Sciences/Psychology/default.htm
Heritage College Education and Psychology. Toppenish, WA	http://www.heritage.edu/acadprog/divisionedpsych.htm
Northwest College Kirkland, WA	http://www.nwcollege.edu/catalog/programs/psychm

	aj.html
Pacific Lutheran University Tacoma, WA	http://www.plu.edu/print/catalog/psyc.html
Puget Sound, University of Tacoma, WA	http://www.ups.edu/psychology/home.htm
Seattle Pacific University Seattle, WA	http://www.spu.edu/depts/pfc/psychology/
Seattle University Seattle, WA	http://www.seattleu.edu/artsci/psychology/
St. Martin's College Lacey, WA	http://www.stmartin.edu/social_science/psychology/index.htm
Washington, University of Seattle, WA	http://web.psych.washington.edu/
Washington, University of - Tacoma campus Tacoma, WA	http://www.tacoma.washington.edu/ias/academics/ba/psychology.cfm
Walla Walla College College Place, WA	http://www.wwc.edu/academics/departments/education/
Washington State University Pullman, WA	http://www.wsu.edu/psychology/
Washington State University: Tri-Cities campus Educational Leadership and Counseling Psychology. Richland, WA	http://www.tricity.wsu.edu/
Washington State University: Vancouver campus Vancouver, WA	http://www.vancouver.wsu.edu/programs/psych/home.html
Western Washington University Bellingham, WA	http://www.ac.wvu.edu/~psych/
Whitman College Walla Walla, WA	http://www.whitman.edu/psychology/history.html
Whitworth College Spokane, WA	http://www.whitworth.edu/Academic/Department/Psychology/Index.asp
Alderson-Broadus College Philippi, WV	http://blue.ab.edu/Psychology.HTML
Bethany College Bethany, WV	http://www.bethanywv.edu/academics/departments/psychology.htm
Bluefield College Bluefield, VA	http://www.bluefield.edu/index.php?template=view_academic_programs&category=Psychology
Charleston, University of Charleston WV	http://www.ucwv.edu/eagle/academics/majors/psychology.cfm
Fairmont State College Fairmont, WV	http://www.fscwv.edu/schools/socsci/psychology/
Glennville State College Glennville, WV	http://www.glennville.wvnet.edu/academics/divisions/SocialSciences/Degrees/BehSciCrimJustice_BS.asp
Marshall University Huntington, WV	http://www.marshall.edu/psych/
Mountain State University Beckley, WV	http://www.mountainstate.edu/majors/onlinecatalogs/undergrad/programs/ISpsychology.aspx
Ohio Valley College Course list. Vienna, WV	http://www.ovc.edu/base.cfm?page_id=337
Salem International University Salem, WV	http://www.salemiu.edu/academics/courses/courses_list/psycourses.shtml
Shepherd College Shepherdstown, WV	http://www.shepherd.edu/college/psychology.html
West Liberty State College West Liberty, WV	http://www.wlsc.edu/users/DPSOCSCI/sbs_home.html
West Virginia State College Institute, WV	http://www.wvsc.edu/academics/dept/psych/
West Virginia University Morgantown, WV	http://www.as.wvu.edu/psyc/
West Virginia University Institute of Technology Montgomery, WV	http://www.wvutech.edu/psychology/
West Virginia Wesleyan College Buckhannon, WV	http://www.wvwc.edu/aca/psy/psyfront.htm
Wheeling Jesuit University Wheeling, WV	http://www.wju.edu/academics/departments/psych/
Alverno College Milwaukee, WI	http://www.alverno.edu/academics/psychology.html

Beloit College Beloit, WI	http://www.beloit.edu/~academic/fields/majors/psyc-over.html
Cardinal Stritch College MA in Clinical Psychology. Milwaukee, WI	http://www.stritch.edu/
Carroll College Waukesha, WI	http://www2.cc.edu/academics/academics_dept_psychology.html
Carthage College Kenosha, WI	http://www.carthage.edu/dept/psychology/
Concordia University-Wisconsin Mequon, WI	http://www.cuw.edu/psychology/default.htm
Edgewood College Madison, WI	http://www.edgewood.edu/directories/psychology_dept.htm
Lawrence University Appleton, WI	http://www.lawrence.edu/academics/psyc/
Marian College Fond du Lac, WI	http://www.mariancollege.edu/Academics/AcademicDivisions/SocialBehavioralSciences/psychology.htm
Marquette University Milwaukee, WI	http://www.marquette.edu/psyc/
Medical College of Wisconsin Pediatric psychology. Milwaukee, WI	http://www.mcw.edu/peds/psych/
Mount Mary College Milwaukee, WI	http://www.mtmary.edu/behavioral.htm
Northland College Ashland, WI	http://www.northland.edu/academics/psy.asp
Ripon College Ripon, WI	http://www.ripon.edu/academics/Psychology
Silver Lake College Manitowoc, WI	http://www.sl.edu/socscience/Default.htm
St. Norbert College De Pere, WI	http://www.snc.edu/psych/
Viterbo College La Crosse, WI	http://www.viterbo.edu/academic/ug/sls/majors/psych/index.htm
Wisconsin - Eau Claire, University of Eau Claire, WI	http://psyc.uwec.edu/
Wisconsin - Green Bay, University of Green Bay, WI	http://www.uwgb.edu/humdev/psych.htm
Wisconsin - Lacrosse, University of La Crosse, WI	http://www.uwlax.edu/LS/Psych/psychhp.htm
Wisconsin - Madison, University of Madison, WI	http://psych.wisc.edu/
Wisconsin - Milwaukee, University of Milwaukee, WI	http://www.uwm.edu/Dept/Psychology/
Wisconsin - Oshkosh, University of Oshkosh, WI	http://www.uwosh.edu/departments/psychology/
Wisconsin - Parkside, University of Kenosha, WI	http://www.uwp.edu/academic/psychology/
Wisconsin - Platteville, University of Platteville, WI	http://www.uwplatt.edu/~psychology/
Wisconsin - River Falls, University of River Falls, WI	http://www.uwrf.edu/psych/welcome.html
Wisconsin - Stevens Point, University of Stevens Point, WI	http://www.uwsp.edu/psych/psycdept.htm
Wisconsin - Stout, University of Menomonie, WI	http://www.uwstout.edu/chd/psych/
Wisconsin - Superior, University of Superior, WI	http://www.uwsuper.edu/acaddept/human-behav.shtml
Wisconsin - Whitewater, University of Whitewater, WI	http://www.uww.edu/factsheets/psychology.html
Wisconsin Lutheran College Milwaukee, WI	http://www.wlc.edu/academics/psy/psy_dept.html
Wisconsin School of Professional Psychology Milwaukee, WI	http://www.wspp.edu/
Casper College Associate degrees. Casper, WY	http://www.caspercollege.edu/admissions/catalog/degrees.asp?Type=79
Eastern Wyoming College Associate degree. Torrington, WY	http://ewc.wy.edu/catalog/programs/psychology.html
Northwest College Associate degree. Powell, WY	http://www.northwestcollege.edu/academics/Programs/psych.htm
Wyoming, University of Laramie, WY	http://www.uwyo.edu/psychology/

FACULTADES DE PSICOLOGÍA EN UNIVERSIDADES ESPAÑOLAS	
Facultad de Psicología Universidad Autónoma de Madrid	http://www.uam.es/estructura/facultades/Psicologia/paginas/
Facultad de Psicología Universidad Autónoma de Barcelona	http://www.uab.es/c-psico.htm
Facultad de Psicología Universidad de Barcelona	http://www.ub.es/psicolog/facultat.htm
Facultad de Psicología Universidad Complutense de Madrid	http://www.ucm.es/info/Psi/
Facultad de Psicología Universidad de Granada	http://www.ugr.es/fac_psi.htm
Facultad de Psicología Universidad de las Islas Baleares	http://www.uib.es/depart/dpsweb/indice.html
Facultad de Psicología Universidad de Málaga	http://www.uma.es/
Facultad de Psicología Universidad de Murcia	http://www.um.es/~facpsi
Facultad de Psicología Universidad Nacional de Educación a Distancia	http://www.uned.es/aplicaciones/cgi-bin/pag_fac.cgi?cod_fac=02
Facultad de Psicología Universidad de Oviedo	http://www3.uniovi.es/Vicest/Estudios/Centros/psicologia.html
Facultad de Psicología Universidad Pontificia de Comillas	http://www.upco.es/pag/ps.htm
Facultad de Psicología y Pedagogía Blanquerra. Universidad Ramón Llul	http://www.url.es/web_blq/fpp.htm
Facultad de Psicología Universidad de Santiago	http://www.usc.es/~psred
Facultad de Psicología de la Universidad SEK de Segovia	http://www.usek.es/
Facultad de Psicología Universidad de Valencia	http://albufera.fpsico.uv.es/
Facultad de Psicología Universidad de La Laguna	http://www.ull.es/
Facultad de Psicología Universidad de Deusto	http://www.fice.deusto.es/
Licenciatura en Psicología de la UOC	http://www.uoc.edu/
Autonoma, University of, at Barcelona Barcelona	http://seneca.uab.es/psicologia/
Illes Balears, University of Balearic Islands	http://www.uib.es/facultat/psicologia/index2.html
Murcia, University of Murcia	http://www.um.es/~facpsi/
Oviedo University	http://www.uniovi.es/UniOvi/Apartados/Departamento/Psicologia/metodos/ingles.html
Salamanca, University of Salamanca	http://psicologia.usal.es/
Santiago, University of Santiago de Compostela	http://www.usc.es/~psred/
Valencia, University of València	http://www.uv.es/psibas

Anexo V

Protocolos de recolección de datos

Protocolo de recolección, Asignaturas

Nombre de La Universidad:

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos

Protocolo de recolección, Investigación

Nombre de La Universidad:

Investigaciones relacionadas	Descripción (breve)

Anexo VI

Protocolos de recolección de datos sobre asignaturas

Alabama

Nombre de La Universidad: University of Alabama at Birmingham (UAB)

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
53. Brain, Mind and Behavior.- : PY 101. 3 hours.	How the brain functions during dreaming, visual perception, aggression, learning and memory, sex and language. Other topics include left vs. right hemisphere specializations, recovery after brain damage, and the neurological basis of illnesses such as schizophrenia, autism and Parkinson's disease. Class will include 5 hours of newly revised videos. Preq: PY 101. 3 hours.	. 3 hours.	PY 101 Introduction to Psychology
303. Introduction to Cognitive Science.- Preq:	Introduction to the exciting new discipline of cognitive science -- the interdisciplinary study of mind and intelligence. This course draws on a number of disciplines involved in unraveling the mysteries of the mind and intelligent life.	3 hours.	PY 101 Introduction to Psychology or Permission of instructor.
363. Cognitive Psychology.-	Human cognitive functioning. Selective attention, information processing, models of learning, memory, perception, and freehand structured through processes.	3 hours.	PY 101 Introduction to Psychology
375. Philosophy of Mind.- Preq	(Also PHL 375.) Mind; its	3 hours.	One previous PHL course or

	nature, forms, and functions. Consciousness, self-consciousness, action, belief, desire, rationality, personal identity; problems such as mind-body, psychological explanation and freedom of will		permission of instructor.
380. Perception	Contemporary theory and empirical research in sensory coding of perceptual information. Sensory transduction, physiology, and anatomy of the sensory systems, and psychophysical measurement techniques. Topics include visual perception, hearing and speech, smell and taste	. 3 hours.	Preq: PY 101 Introduction to Psychology
411. Cognitive Development	The development of memory, perception, learning, and thinking in children.	3 hours.	Preq: PY 212 Developmental Psychology and and PY 315, or Permission of Psychology Advisor
414. Perceptual Development.-	Changes in sensory capacities in all modalities from birth to old-age. Life-span development of higher-level perceptual processes, including development of perceptual constancies, and intermodal perception	3 hours.	Preq: PY 212 Developmental Psychology and PY 315 Methods in Psychological Research, or Permission of Psychology Advisor.
450. Acquisition of Language	Communication development in infancy, development of speech perception and production,	.-. 3 hours.	Preq: PY 212 Developmental Psychology and PY 315 Methods in Psychological Research, or

	grammatical and semantic development, acquisition of literacy, individual differences and cross-cultural variation in language acquisition, and use of language in social context		Permission of Psychology Advisor
461. Research Seminar in Cognitive Science.-	Current research, theories, and controversies in cognitive science. Seminar topic changes each semester	1-3 hours.	Preq: Cognitive Science minor or PY 315Methods in Psychological Research, or Permission of Psychology Advisor.
463. Cognitive Neuroscience.	An interdisciplinary study of higher-order cognitive functions in humans. Data from functional brain imaging, neurology, neuroanatomy, and neurophysiology will be used in studying such topics as human perception, language, learning, and memory	3 hours.	Preq: PY 315 Methods in Psychological Research and either PY 353Behavioral Neuroscience , PY 363Cognitive Psychology or PY 380 Perception , or Permission of Psychology Advisor
480. Sensory Processing in Perception	Neural coding underlying perception. Emphasis on understanding sequence of transformation in sensory processing hierarchy from receptors to complex cortical areas, their relation to cognitive functioning, and recent progress in machine vision and perception	.-. 3 hours.	Preq: PY 315Methods in Psychological Research and either PY 353 Behavioral Neuroscience 363 Cognitive Psychology or PY 380 Perception , or Permission of Psychology Advisor

Arizona

Nombre de La Universidad: Arizona, University of Tucson, AZ

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
PSYC 201 -- Introduction to Linguistics	Fundamentals of linguistics; phonetics, phonology, morphology, syntax, semantics and language acquisition; provides basis for further study in the field. Identical to: LING 201; LING is home department. Usually offered: Fall, Spring.	(3 units)	
PSYC 325 -- Cognitive Psychology . Usually offered: Fall, Spring, Summer.	Introduction to the experimental analysis of the information processing systems underlying human cognition, language and memory.	(3 units)	Prerequisite(s): PSYC 101 or INDV 101
PSYC 326 -- Human Memory	Introduction to scientific study of human memory including structures and processes, memory failures, acquisition and retention of knowledge, memory development, and memory disorders.	(3 units)	Prerequisite(s): PSYC 101 or INDV 101. Usually offered: Fall, Spring.
PSYC 329 -- Sensation and Perception	Introduction to research concerning how we perceive the external world through our senses of vision, audition, smell, taste and touch, with an emphasis on vision.	(3 units)	Prerequisite(s): PSYC 101 or INDV 101. Usually offered: Fall, Spring.
PSYC 340 -- Introduction to Cognitive Development Description:	Introduction to the development of cognition, intelligence and language from conception to adolescence.	(3 units)	PSYC 101 or INDV 101.

<p>SYC 346 -- Minds, Brains and Computers department. Usually offered: Fall.</p>	<p>An introduction to cognitive science; current issues relating to minds as computers, neuroscience, vision and language.</p>	<p>(3 units)</p>	<p>Prerequisite(s): two courses from Tier One, Individuals and Societies (INDV 101, 102, 103, 104). Approved as: General Education Tier Two - Individuals and Societies. May be repeated: for credit 1 time (maximum 2 enrollments). Identical to: PHIL 346; PHIL is home</p>
<p>PSYC 358 -- Psychology of Consciousness</p>	<p>Introduction to theory and research on both normal and altered states of consciousness, from a natural science and cognitive psychology viewpoint. Topics reviewed include philosophical foundations, brain systems and consciousness, introspection, sleep and dreaming, hypnosis, meditation, and psychedelic drugs.</p>	<p>(3 units)</p>	<p>Prerequisite(s): PSYC 290A or PSYC 290B. Identical to: AISS 358. Usually offered: Spring.</p>
<p>PSYC 376 -- Human Factors: User Interface Design</p>	<p>This course provides basic training in the optimal design of the user interface to human-machine systems, particularly human-computer systems. This course will also provide the student with an understanding of User Interface Design as an important career opportunity within Psychology.</p>	<p>(3 units)</p>	<p>Prerequisite(s): PSYC 101 or INDV 101. Usually offered: Fall, Spring, Summer.</p>
<p>SYC 402 -- Brain and Cognition</p>	<p>Introduction to the field of</p>	<p>(3 units)</p>	<p>Prerequisite(s): PSYC 230,</p>

	cognitive neuroscience: the study of brain mechanisms of attention, memory and language.		PSYC 302. Usually offered: Fall, Spring.
PSYC 406 -- Neural Encoding, Memory, and Computation in the Mammalian Brain	Description: Theoretical principles and biological mechanisms by which information is represented, categorized, stored, and recalled in specific central nervous system (CNS) circuits in the course of adaptive behavior.	(3 units)	Prerequisite(s): PSYC 230. May be convened with: PSYC 506. Usually offered: Fall.
PSYC 415 -- The Design of the Mind: Genes, Adaptation, and Behavior	Basic mechanisms of behavioral evolution, genetics, and natural selection, as well as other factors impinging on the evolutionary process. Part II: Historical approaches that converge upon the broadly defined research program of behavioral evolution, theoretical perspectives, and empirical contributions made by each of these approaches, and current controversies in the field, framed as a single integrated area of study in which multiple approaches and perspectives can contribute to a comprehensive understanding. This is a Writing Emphasis Course.	(3 units)	Prerequisite(s): satisfaction of the Mid-Career Writing Assessment (MCWA) or the former upper-division writing proficiency requirement (UDWPE); PSYC 230, PSYC 240, PSYC 340. Identical to: FSHD 415. May be convened with: PSYC 515. Usually offered: Fall.

PSYC 426 -- Advanced Human Memory	Examines the processing systems that underlie human learning, memory and cognition; emphasizing cognitive, neuroscientific and computational approaches to research and theory. This is a Writing Emphasis Course.	(3 units)	Prerequisite(s): satisfaction of the Mid-Career Writing Assessment (MCWA) or the former upper-division writing proficiency requirement (UDWPE); PSYC 290A or PSYC 290B; PSYC 326. May be convened with: PSYC 526. Usually offered: Fall.
PSYC 429 -- Advanced Perception	A special topics course. Sample topics include; perception of space, theories of object recognition, evolutionary constraints, learning, attention, visual cognition, and theories of perception. This is a Writing Emphasis Course.	(3 units)	Prerequisite(s): satisfaction of the Mid-Career Writing Assessment (MCWA) or the former upper-division writing. May be repeated: for credit 2 times (maximum 3 enrollments). Usually offered: Fall.
PSYC 432 -- Psychology of Language	Introduction to language processing. The psychological processes involved in the comprehension and production of sounds, words, and sentences. Other topics may include language breakdown and acquisition, brain and language, and bilingual processing.	(3 units)	Prerequisite(s): LING 201 or PSYC 101. Identical to: LING 432; LING is home department. May be convened with: PSYC 532. Usually offered: Spring.
PSYC 438 -- Computational Linguistics	Fundamentals of formal language theory; syntactic and semantic processing; the place of world knowledge in natural language processing.	(3 units)	Prerequisite(s): LING 388 or a course in one of the following: formal languages, syntax, data structures, or compilers. Identical to: LING 438; LING is

			home department. May be convened with: PSYC 538. Usually offered: Fall
PSYC 440 -- Advanced Cognitive Development	Examination of major theories and research findings in cognitive development, with emphasis on infant cognition and conceptual development through childhood. Topics include concept representation and development, naive theories of the world and knowledge restructuring. Topics will vary.	(3 units)	Prerequisite(s): PSYC 230. May be repeated: for credit 1 time (maximum 2 enrollments). May be convened with: PSYC 540. Usually offered: Spring.
PSYC 441 -- Language Acquisition .	Principles and processes of first language acquisition described in relation to children's social and cognitive development; first language acquisition processes compared and contrasted to child and adult second language acquisition and language disorders	(3 units)	Prerequisite(s): SP H 340. Identical to: SP H 441; SP H is home department. May be convened with: PSYC 541. Usually offered: Spring.
SYC 442 -- Knowledge and Cognition	Issues in philosophy and psychology of knowledge, with emphasis on cognitive mechanisms. Perception, memory, concepts, mental representation, problem-solving, reasoning and rationality.	(3 units)	Prerequisite(s): two philosophy courses. Identical to: PHIL 442; PHIL is home department. Usually offered: Fall.
PSYC 445 -- Neural Network Models	Hands-on introduction to artificial neural networks. The	(3 units)	Prerequisite(s): PSYC 290A or PSYC290B; PSYC 325 or PSYC

	basic principles and tools required to develop neural models, and/or to effectively apply technology.		346 or PSYC 402, college-level algebra skills; probability/statistics, computer familiarity either with Unix PCC, or Mac. Identical to: PHIL 445. May be convened with: PSYC 545. Usually offered: Spring.
PSYC 455 -- Philosophy and Artificial Intelligence	Interdisciplinary problems lying at the interface of philosophy and artificial intelligence.	(3 units)	Identical to: PHIL 455; PHIL is home department. May be convened with: PSYC 555. Usually offered: Fall, Spring.
PSYC 468 -- Speech Perception	General overview of the field of speech perception. Topics include: role of contextual factor in the processing of speech, developmental issues in speech perception, perception of foreign language speech sounds, the recognition of speech by computers and animals, implications for hearing-impaired populations and models of speech perception	(3 units)	Identical to: SP H 468; SP H is home department. May be convened with: PSYC 568. Usually offered: Spring.
PSYC 470 -- Foundations of Artificial Intelligence	General introductory course in Artificial Intelligence (AI). Discussion of AI and its relationship to cognitive psychology, philosophy, math, and computer science. Focus	(3 units)	Prerequisite(s): C SC 127B or C SC 227 or equivalent; C SC 344 or equivalent

	on underlying concepts rather than the engineering and applied aspects of AI. For advanced undergraduate and graduate students coming from a variety of disciplines.		
SYC 476 -- Environmental Cognition	Recent advances in the area of environmental cognition, with an emphasis on cognitive aspects of environmental psychology. This is a Writing Emphasis Course.	(3 units)	Prerequisite(s): satisfaction of the Mid-Career Writing Assessment (MCWA) or the former upper-division writing proficiency requirement (UDWPE); PSYC 290A or PSYC 290B; 6 units of upper-division psychology or consent of instructor. May be repeated: for credit 1 time (maximum 2 enrollments).
PSYC 496F -- Cognitive Psychology	Investigation of research and ideas on a specialized topic within cognitive psychology, including the psychology of language, visual perception and memory, decision, and learning. The discussion and exchange of scholarly information in a small group setting, papers and student presentations. This is a writing emphasis course.	(3 units)	Prerequisite(s): PSYC 290A or PSYC 290B. May be repeated: for credit 1 time (maximum 2 enrollments). Identical to: LING 496F. May be convened with: PSYC 596F.

Nombre de La Universidad: : Arizona State University Tempe, AZ

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
PGS 304 Effective Thinking	A Understanding and improving	(3)	Prerequisites: MAT 119 or PSY

	your intellectual and behavioral skills; information analysis, inference, logic, problem solving, and decision making.		230 or equivalent. General studies: L.
GS 441 Cognitive Development	Experimental and theoretical literature in child development and behavior.	(3)	Prerequisite: PGS 341 or instructor approval. General Studies: L/SB.
PGS 450 Social Perception and Cognitive..	A critical analysis of human social perception and social cognition. Topics include attribution, inference, memory, attention, impression formation, stereotype change, Lecture, discussion.	(3)	Prerequisites: PGS 101, 350. General Studies: L
PSY 323 Sensation and Perception..	Underlying processes of vision, audition, and the other senses. Application of current research and theory in a laboratory environment.	(3)	Prerequisite: PSY 290
PSY 324 Memory and Cognition.	Processes underlying information storage and retrieval, including different kinds of memory, forgetting, depth of processing, and control processes.	(3)	Prerequisite: PSY 290
PSY 434 Cognitive Psychology.	The human organism as a processor of information, from perception to cognition. Abstract concepts, semantic memory, attention, and mental imagery.	3)	Prerequisite: PSY 324 or instructor approval. General Studies: L.
PSY 437 Human Factors.	Emphasis on human factors in technology systems. Specific topics include systems	(3)	Prerequisites: PSY 290 and upper division standing or instructor approval. General

	development, systems analysis in techniques, displays, and controls.		Studies: L.
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California

Nombre de La Universidad: UCLA

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
85. Introduction to Cognitive Science	Lecture, three hours. Exploration of computer metaphor of mind as an information-processing system, focusing especially on perception, knowledge representation, and thought based on research in cognitive psychology, neuropsychology, and artificial intelligence. Many examples from visual information processing.	4	
119R. Neurobiology of Visual Cognition.	Review of some recent advances in understanding of neurobiology of visual cognition. Topics include how is visual information processed by brain to generate actions? How do we recognize objects? How do we perceive emotions displayed by other subjects? P/NP or letter grading.	4	115. Principles of Behavioral Neuroscience
119S. Neural Basis of Learning and Computing with Neurons.	Introduction to neural basis of learning and memory.	4	115. Principles of Behavioral Neuroscience

	Examination of current theories of what happens in brain when we learn and acquire new information. Introduction to how brain may use neural networks for learning and pattern recognition. How neural networks perform computations. P/NP or letter grading.		
120A. Cognitive Psychology	Survey of cognitive psychology: how people acquire, represent, transform, and use verbal and nonverbal information. Perception, attention, imagery, memory, representation of knowledge, language, action, decision making, thinking. P/NP or letter grading.	4	10. Introductory Psychology 100A. Psychological Statistics
120B. Sensation and Perception.	Acquisition of information about physical world through basic sensory mechanisms and perceptual processes. Perception of objects, surfaces, space, motion, and events. Connections between information, computations, and biological mechanisms in vision, audition, and other systems. P/NP or letter grading.	4	10. Introductory Psychology 100A. Psychological Statistics
121. Laboratory in Cognitive Psychology	Laboratory experience with methods and phenomena from research on human perception, memory, and cognition. P/NP or	4	10. Introductory Psychology 100A. Psychological Statistics 100B. Research Methods in Psychology

	letter grading.		120A. Cognitive Psychology 120B. Sensation and Perception.
122. Language and Communication	Introduction to psychology of language and communication; verbal and nonverbal channels; interlinguistic and intralinguistic variation; animal communication; biological bases of language; production and comprehension of speech and writing; relation to perception, memory, and thought; conversational interaction; language development	4	10. Introductory Psychology
123. Psycholinguistics	Current theory and research in psycholinguistics: survey of language acquisition, language perception, and language production; language physiology and pathology; problems of representation, sequencing, and timing in language and other cognitive skills; errors in speech production and perception.	4	
124A. Advanced Topics in Sensation and Perception	Contemporary research and theory about visual and auditory perception. Topics include physiological mechanisms, psychophysical studies and models, and computational approaches. P/NP or letter grading.	4	10. Introductory Psychology 100A. Psychological Statistics 100B. Research Methods in Psychology 120A. Cognitive Psychology 120B. Sensation and Perception.

124B. Visual Information Processing	Exploration of issues in visual information, such as storage and representation of visual information in memory, pattern recognition, nature and role of attention in visual processing, word and picture recognition, object perception, and imagery. Possible consideration of developmental aspects. P/NP or letter grading.	4	10. Introductory Psychology 100A. Psychological Statistics 100B. Research Methods in Psychology 120A. Cognitive Psychology 120B. Sensation and Perception.
124C. Human Memory	Analysis of recent research on basic processes and structural components that comprise the human memory system. Discussion topics include practical implications of such research for instruction, marketing, and witness testimony. P/NP or letter grading.	4	120A. Cognitive Psychology 120B. Sensation and Perception.
124E. Language and Cognition	Recent theories of language and cognition; nature of categories, feedback, and error detection in language and cognition; modularity; ambiguity; knowledge acquisition; processes and representations underlying perception, production, attention, and awareness in language and cognition. P/NP or letter grading.	4	10. Introductory Psychology 120A. Cognitive Psychology 120B. Sensation and Perception.
124F. Thinking	Analysis of experimental studies	4	120A. Cognitive Psychology

	of human categorization, reasonings, decision making, problem solving, creativity, and related topics. P/NP or letter grading.		120B. Sensation and Perception.
186A. Cognitive Science Laboratory: Introduction to Theory and Simulation	Models in several psychological domains (e.g., visual perception, categorization, reasoning, and problem solving). Types of models include semantic networks, search, production systems, connectionist networks, and mathematical models. Lectures and discussions interwoven with computer simulations written in common LISP.	4	10. Introductory Psychology 85. Introduction to Cognitive Science 100A. Psychological Statistics 100B. Research Methods in Psychology Program in Computing 15
186B. Cognitive Science Laboratory: Neural Networks	Lectures and laboratory work in neural network modeling of perception and cognition. Specific topics include essential neurophysiology, basic architectures, learning, and programming techniques. Principles illustrated and discussed in context of models of specific perceptual and cognitive processes. Simulations written in PASCAL. P/NP or letter grading.	4	10. Introductory Psychology 85. Introduction to Cognitive Science 100A. Psychological Statistics 100B. Research Methods in Psychology Program in Computing 10A, 10B (or PASCAL)
186C. Cognitive Science Laboratory: Psychophysical Theories and Methods	Lectures and laboratory work that examine perceptual measurement procedures	4	10. Introductory Psychology 85. Introduction to Cognitive Science

	(psychophysical methods) and cognitive processing and decision models on which procedures are based, with particular emphasis on signal detection theory and its applications. Letter grading.		100A. Psychological Statistics 100B. Research Methods in Psychology
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Nombre de La Universidad: Universidad de San Diego

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
105 Computer Analysis of Behavioral Science Data	Students will learn to enter data on a computer and to use statistics programs (for example, SPSS) to perform the kinds of analyses introduced in basic statistics courses (for example, central tendency, variation, correlation, t-tests, analysis of variance and chi square). More advanced statistical procedures (for example, multiple regression, partial correlation, and analysis of covariance) will be introduced. Previous experience with computers is not required	3	60 Statistics
134 Human Memory	A scientific approach to the traditional study of human memory, including structural concepts (memory stores), and process concepts (encoding,	3	1 Introductory Psychology 30 Research Methods in Psychology

	organization, retrieval). More recent approaches, including neural networks and concepts related to ecological validity are also explored.		
135 Research Methods/Laboratory in Human Memory	This course integrates an in-depth exploration of selected human memory topics with an emphasis on experimental research methods. Readings of original research, active participation in laboratory replications, and complete research report preparation and write-ups will accompany each topic. The course will culminate with the preparation of an original research project.	3	30 Research Methods in Psychology 60 Statistics 134 Human Memory
136 Cognitive Psychology	Study of how people process information. Topics include: perception; attention; memory; imagery; language; concept formation; and problem solving. Both basic and applied issues will be addressed. Recent advances in neural network models will be introduced.	3	1 Introductory Psychology 30 Research Methods in Psychology
137 Research Methods/Laboratory in Cognitive Psychology	This course integrates an in-depth exploration of selected topics with an emphasis on experimental research methods. Readings in original research, active participation in	3	30 Research Methods in Psychology 60 Statistics 136 Cognitive Psychology

	laboratory replications, complete research report preparation, and write-ups will accompany each topic. The course will culminate in the preparation of an original research project.		
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Nombre de La Universidad: UC Santa Barbara

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
107. Introduction to Perception	An introductory course in perception open to students in all majors. A variety of demonstrations are used to allow the student to experience the phenomena of perception. Current hypotheses and theories concerning the underlying psychological and biological processes are described.	4	1. General Psychology
108. Introduction to Cognitive Psychology	An elementary course in such topics as pattern recognition and attention, memory, language, reasoning, and problem solving.	4	1. General Psychology
110A. Perception: Vision	This course is an overview of visual perception. It covers a wide range of phenomena from the detection of simple stimuli to the identification of objects and events. Human performance,	4	1. General Psychology 5. Introductory Statistics 7. Introduction to Experimental Psychology

	psychological theories, and biology will be considered.		
110B. Perception: Audition	An overview of auditory perception covering topics such as the physics of sound, psycho-physical methods, the structure and function of the ear and auditory pathway, detection and discrimination, masking, pitch perception, musical scales, 3-D localization, and speech perception.	4	1.General Psychology 5. Introductory Statistics 7. Introduction to Experimental Psychology
110C. Perception: Chemical Senses	An overview of odor and taste perception. Topics include the chemistry of odors and foods, the structure and function of the olfactory and gustatory pathways, detection and identification, memory, animal and human pheromones, and influences on emotion and health.	4	1.General Psychology 5. Introductory Statistics 7. Introduction to Experimental Psychology
110L. Laboratory in Perception	A laboratory course that emphasizes experimental methods and data analysis techniques relevant to the study of sensation and perception.	4	1.General Psychology 5. Introductory Statistics 7. Introduction to Experimental Psychology 110A. Perception: Vision 110B. Perception: Audition 110C. Perception: Chemical Senses
117. Human Memory	Principles of human memory. How knowledge is represented internally. Cognitive processes	4	1.General Psychology 5. Introductory Statistics 7. Introduction to Experimental

	involved in remembering. Examination of different memory systems.		Psychology
117L. Laboratory in Human Memory and Cognition	Methods, techniques, and typical experimental research in human memory and cognition.	5	1.General Psychology 5. Introductory Statistics 7. Introduction to Experimental Psychology 117. Human Memory
123. Cognitive Neuroscience	Examination of the neurological basis of cognition. Material is drawn from research in psychology, clinical neurology, and the neurosciences with brain injured and healthy humans as well as non-human subjects. Topics covered include memory, language, and perception.	4	1.General Psychology 5. Introductory Statistics 7. Introduction to Experimental Psychology 106. Brain and Behavior 111. Basic Concepts in Biopsychology
111L. Laboratory in Biopsychology	A study of the techniques and experimentation in biopsychology.	5	1.General Psychology 5. Introductory Statistics 7. Introduction to Experimental Psychology 111. Basic Concepts in Biopsychology
128. Human Thinking and Problem Solving	An examination of theories and supporting evidence regarding the nature of human thought processes.	4	1.General Psychology 5. Introductory Statistics 7. Introduction to Experimental Psychology
155. Evolution and Cognition	Explores ways in which the human mind can be seen as a collection of devices designed by evolution to solve adaptive problems faced by our hunter-	4	1.General Psychology 5. Introductory Statistics 7. Introduction to Experimental Psychology

	gatherer ancestors. Topics may include cooperation, mating, sibling jealousy, coalitional aggression, etc.		
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Colorado

Nombre de La Universidad: Regis University Denver, CO

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
PY 381 LEARNING AND MEMORY. .	Introduces basic concepts, methods and results of experimental analysis of learning and memory in humans and nonhuman animals. Includes classical and operant conditioning, discrimination learning processes underlying encoding, storage, and retrieval of information in memory, and other cognitive processes	(3.00)	Prerequisite(s): PY 250 PY 250 GENERAL PSYCHOLOGY or PY 251GEN PSYCHOLOGY NEUROSCIENCE . Corequisite(s): PY 382
PY 382 LEARNING & MEMORY LABORATORY	Involves laboratory experiments with animal and human subjects and the preparation of reports on these experiments.	(2.00)	Corequisite(s): PY 381
PY 454 COGNITIVE PSYCHOLOGY	Focuses on psychological processes such as attention, memory, concept formation, problem solving and language. Examines current research data, theories and applications. RC	(3.00)	Prerequisite(s): PY 250 or PY 251. SPS Prerequisite(s): PY 250. RC Co-Requisite(s): PY 455 (Optional).
PY 455 COGNITIVE	Involves laboratory experiments	(1.00).	Corequisite(s): PY 454

PSYCHOLOGY LAB.	with human subjects exploring basic cognitive processes, such as memory and problem solving.		
PY 482 SENSATION AND PERCEPTION.) Introduces the physiological and psychological processes underlying basic sensory and perceptual relationships established for the different sense modalities and experience. Emphasizes psychophysical theoretical interpretations of the sensory data. Prerequisite	(3.00	(s): PY 250 or PY 251

Conneticut

Nombre de La Universidad: Trinity College Hartford, CT

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
[352. Artificial Intelligence]—	A study of basic principles and research methods in artificial intelligence. The course exposes students to selected topics in the field, including pattern recognition, problem solving, theorem proving, knowledge representation, and natural language understanding by computers. The course will draw on recent advances made by cognitive scientists in each of these applications. Students are		Prerequisite: Computer Science 215L or permission of the instructor.

	<p>expected to study the theoretical background of an application. They will also complete several programming and simulation assignments during the semester.</p>		
255. Cognitive Psychology—	<p>The study of knowledge and how people use it, for example, in recall and recognition, question answering, reading, writing, and problem solving. It examines individual differences, e.g. between good and poor readers, and application of theories in cognition to "real world" tasks such as computer programming. The course takes an interdisciplinary approach emphasizing the continuing influence of philosophy, linguistics and computer science on the study of cognition. Laboratory exercises are designed to illustrate some of the topics considered in class.)</p>		<p>Prerequisite: Psychology 101. Enrollment limited. (1 1/4 course credits with optional laboratory)—(Fall 2000, McGrath</p>
365. Cognitive Neuroscience—	<p>This course examines the way in which brain function influences mental processes and overt action. We will consider a range of cognitive functions primarily from the perspective of neuroscience and draw on such related disciplines as cognitive</p>		<p>Psychology 255 or 261 or 356 or Neuroscience 201. Enrollment limited.—Raskin</p>

	<p>psychology and computational analysis as needed. The functions to be reviewed include perception, attention, memory, language, and thinking.</p> <p>Prerequisite:</p>		
401-08. Senior Seminar: Human Memory—	<p>This seminar investigates important approaches to memory and diverse types of memory. Our point of departure will be the "Art of Memory," which refers to a broad set of institutions about memory held by scholars from antiquity to the advent of psychological research: Ebbinghaus, Freud, Binet, and Bartlett. With this grounding, we shall embark on a review of major contemporary frameworks of memory and forgetting, including theories advanced by scholars in psychobiology, cognitive psychology, and artificial intelligence. The seminar concludes with an examination of practical aspects of memory as far as they illuminate theoretical issues. These include memory improvement, amnesia, and eyewitness testimony.</p>		<p>Permission of instructor. Enrollment limited. (1 course credit)—Haberlandt</p>
[401-11. Senior Seminar: Consciousness	<p>This seminar will be organized around two books: the</p>		<p>Prerequisite: Permission of the instructor signed by the</p>

	<p>psychologist Julian Jaynes's book <i>The Origins of Consciousness in the Breakdown of the Bicameral Mind</i> and the philosopher Daniel Dennett's book <i>Consciousness Explained</i>. All students will be expected to achieve an understanding of the theories of these two men at a level commensurate with their senior psychology major status, and each student will contribute to the others' understanding of the theories by making a significant written and oral presentations in one of the fields with which the theories intersect. These fields include neurophysiology, learning, memory, narratization, mental illness, hypnosis, and some selected social psychology issues, especially the social psychology of religion and authority.</p>		<p>department secretary. Enrollment limited.—Higgins</p>
<p>[220. Introduction to Cognitive Science</p>	<p>A survey of the new sciences of the mind. We will discuss the nature of representation, perception, and cognition, and the prospects for an empirical science of the human mind. Disciplines illuminating these issues include philosophy,</p>		<p>Prerequisite: Students enrolling in Psychology 220 must also enroll in Psychology 371L with permission of the instructor. Enrollment limited.</p>

	cognitive psychology, artificial intelligence, linguistics, and neuroscience.		
256. Learning and Memory	A survey of traditional learning theory and current approaches to human and animal learning and memory. The course considers the acquisition and retention of skills such as reading, arithmetic, and scientific reasoning. The laboratory exercises illustrate some of the topics presented in the class lectures.		Prerequisite: Psychology 101. Enrollment limited. (1 1/4 course credits with optional laboratory)—Haberlandt (Fall 2000-McGrath)
356L. Cognitive Science	[An interdisciplinary study of a variety of subjects, including learning, memory, perception, and cognitive psychology. Some specific topics are language learning, expert systems, inferences, and planning. These topics will be approached using methods from psychology, artificial intelligence, and linguistics. Prerequisite:		Psychology 255 or 293 or a Computer Science course. Enrollment limited. (1 1/4 course credits)
[371L. Cognitive Science (Laboratory)	The mind is a computer: this is the guiding idea of much recent cognitive science, philosophy of mind, and cognitive neuroscience. Through a series of laboratory exercises, we will explore what this idea means, and whether it might be true. The exploration begins with the		Prerequisite: Students enrolling in Psychology 220 must also enroll in this mandatory laboratory

	<p>classical Turing machine, the basis for modern digital computation, and moves toward an increasingly detailed consideration of the inner workings of our brains as we perceive, think, and feel. Most of the exercises will be based on computer simulations, which students can modify in order to develop models of mind and conduct simulation experiments. (No previous experience with computer programming is required.) This is the laboratory component of Philosophy/Psychology 220, Introduction to Cognitive Science, and Philosophy 374, Minds and Brains..</p>		
<p>395. Cognitive and Social Development</p>	<p>This course will explore cognitive and social development within a general developmental framework. It will elaborate and critically evaluate Piaget's theory of cognition development and examine how research in areas such as memory, perception, intelligence testing, education, language, morality, social cognition, and sex-role development can be related to Piaget's work.</p>		<p>Prerequisite: Psychology 295. Enrollment limited.— Anselmi</p>

Columbia

Nombre de La Universidad: Catholic University of America Washington, DC

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
PSY 222: Psychology and Technology	Explores the role of psychology in our increasingly technological world. Focuses primarily on information/computer technology, but biomedical is considered as well. Approaches issues from several perspectives: the social history of technology; the influence of technology on psychology; how cognitive psychology has helped make technology technology more "user friendly"; and the psychological impact of technology. Lectures cover issues such as privacy, communication, information overload, genetic intervention, and software personal agents.	3 Credits	
PSY 240: The Aging Mind	This is a survey of the many ways in which mental function changes in healthy aging. Topics include perspectives on lifespan development; the aging brain; changes in perception, learning, memory, language and problem solving; the role of lifestyle	3 Credits	

	<p>factors (exercise, diet), genetics, and the environment; dementia and age-related memory loss as well as compensation for loss. The primary focus is on reviewing our scientific understanding of these issues, but the practical implications of this knowledge for life in an increasingly aging world are also considered. No prerequisites</p>		
PSY 371: Sensation & Perception	<p>Investigation of research and theory of how we experience the objects and events in our environment through our senses. Topics include psychophysics, vision, audition, speech perception, and the chemical senses.</p>	3 Credits	
PSY 373: Cognitive & Behavior Therapy	<p>An empirical approach to clinical psychology emphasizing behavior therapy, cognitive therapy, and psychotherapy research. Considers theory, techniques, and effectiveness of a variety of interventions, including contingency management, systematic desensitization, assertiveness training, rational-emotive therapy, and cognitive restructuring.</p>	3 Credits	
PSY 376: Cognitive Psychology	<p>Explores the psychological</p>	3 Credits	

	mechanisms underlying human memory, language and thought. Lectures and readings focus on theoretical and experimental issues in learning, memory, attentional processes, psycholinguistics, and problem solving.		
PSY 403: Psychology of Memory	Experimental course addresses how we remember things and why we forget. Topics include amnesia, eyewitness memory, memory tricks, and aging, as well as some of the fundamental models of human memory. Approach is cognitive and neuropsychological. Prerequisites: 201; junior or senior standing or one other course in psychology.	3 Credits	
PSY 444: Mind, Brain & Machine	An examination of current theories of mind and their relationship to developments in neuroscience and computer science. Readings focus on the theoretical relations among these disciplines and ways in which empirical data can be brought to bear on philosophical issues. Current biological and computer models of mental processes.	3 Credits	
PSY 471: Laboratory in	Optional laboratory in sensation	1 Credits	Prerequisites: 322 Introductory

Sensation and Perception	and perception to accompany 371. For psychology majors only		Statistics and 350 General Research Methods in Psychology; concurrent registration in 371
PSY 473: Laboratory in Cognitive and Behavior Therapy	Optional laboratory in cognitive and behavior therapy to accompany 373. For psychology majors only.	1 Credits	Prerequisites: 322 and 350; concurrent registration in 373
PSY 476: Laboratory in Cognitive Psychology	Optional laboratory in cognitive psychology to accompany 376. For psychology majors	1 Credits	Prerequisites: 322 and 350; concurrent registration in 376

Florida

Nombre de La Universidad: University of Florida

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
EXP 3104 Sensory Processes	An introductory survey of the human senses and their role in perception, considering how we sense the physical environment and what factors influence our perception of it. An optional laboratory course, EXP 4174C, may be taken concurrently with this course.		
EXP 4174C Laboratory In Sensory Processes	Students collect, analyze and evaluate data on specific problems related to sensory and perceptual abilities.		
EXP 3604 Introduction To Cognitive Psychology	An introductory survey of human cognitive abilities,		

	including perceptual and motor skills, attention, learning and memory, language, and thinking, and the methods used to study these abilities. An optional laboratory course, EXP 4934C, may be taken concurrently with this course.		
EXP 4504 Human Memory	Contemporary theories and data on human memory, with emphasis on the information processing approach.		
EXP 4635 Thinking	Examination of human reasoning, problem solving, judgment and decision making.		
EXP 4934C Laboratory In Cognitive Psychology	contemporary laboratory techniques used in the study of human memory, thinking, information processing, and perceptual processes.		

Nombre de La Universidad: Florida State University

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
EXP 3202. Sensation and Perception	The role of the senses in behavior and the perceptual organization of sensory information.	3	EXP 3000. Approaches to the Study of Behavior
EXP 3202L. Sensation and Perception Laboratory		1	EXP 3000. Approaches to the Study of Behavior
PSB 2000. Introduction to Brain and Behavior	A study of the basic principles of brain functions and how they relate to animal and human	3	

	behavior		
PSB 3004. Physiological Psychology	hours in biology; or permission of instructor. Corequisite: PSB 3004L. Current problems, theories, and techniques in physiological psychology with emphasis on central nervous system mechanisms.	3	PSY 2012. General Psychology
PSB 3004L. Physiological Psychology Laboratory		1	
EXP 3404. Human Memory and Learning	Course introduces issues related to human memory and learning. Theories of memory, including memory systems, capacity and duration of memory, and basic memorial processes. Applied issues include disorders of memory (e.g., Alzheimer's disease), repressed memories and memory improvement.	3	EXP 3000. Approaches to the Study of Behavior EXP 3000L. Approaches to the Study of Behavior Laboratory
EXP 3503. Cognitive Psychology	Contemporary approaches to human learning, memory, and higher mental processes.	3	EXP 3000. Approaches to the Study of Behavior EXP 3000L. Approaches to the Study of Behavior Laboratory
EXP 3503L. Cognitive Psychology Laboratory		1	EXP 3000. Approaches to the Study of Behavior EXP 3000L. Approaches to the Study of Behavior Laboratory
EXP 4640. Psychology of Language	This course will focus on the mental processes involved in language use (e.g., speech, comprehension, conversation,	3	EXP 3000L. Approaches to the Study of Behavior Laboratory

	and writing). EXP 3000 is required for psychology majors. Majors from relevant areas such as language, communications, philosophy, computer science and education should contact the instructor for permission to take the course.		
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Indiana

Nombre de La Universidad: University of Notre Dame

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
PSY 344: Exploratory and Graphical Data Analysis, Steve Boker	The process by which psychological knowledge advances involves a cycle of theory development, experimental design and hypothesis testing. But after the hypothesis test either does or doesn't reject a null hypothesis, where does the idea for the next experiment come from? Exploratory data analysis completes this research cycle by helping to form and change new theories. After the planned hypothesis testing for an experiment is finished, exploratory data analysis can look for patterns in these data that may have been missed by		PSY 341: Experimental Psychology I PSY 342: Experimental PSY II

	<p>the original hypothesis tests. A second use of exploratory data analysis is in diagnostics for hypothesis tests. There are many reasons why a hypothesis test might fail. There are even times when a hypothesis test will reject the null for an unexpected reason. By becoming familiar with data through exploratory methods, the informed researcher can understand what went wrong (or what went right for the wrong reason). This class is recommended for advanced students who are interested in getting the most from their data.</p>		
<p>PSY 356A & B: Learning and Memory, G. A. Radvansky</p>	<p>This course is a survey of the theories and methods involved in learning and memory from both biological and cognitive perspectives. Topics include classical and instrumental conditioning, theories of human memory, and artificial intelligence. Emphasis is on the integration of learning and memory across many domains.</p>		
<p>PSY 357A & B: Sensation and Perception, William Dawson</p>	<p>Theories, data, and experimental methods pertaining to the ways in which the energies of the external</p>		

	<p>world become part of basic psychological experience. The general principles of sensory processing are illustrated by considering in detail the external physical energies, internal biological codes, and regular psychological states involved in vision.</p>		
<p>PSY 359A & B: Cognitive Psychology</p>	<p>This course surveys basic research and theory in Cognitive Psychology. Topics include cognitive neuroscience, learning, perception, attention, memory, language, categorization, problem solving, and creativity. The course examines how both computational (mathematical) models and experimental investigations of human performance are used to inform theories about the nature of the mental representations and processing that underlie human cognition. Evaluation is based on class participation, 6-7 written summary reports, 3 quizzes, and a final exam. Recommended text and required supplemental readings.</p>		
<p>PSY 385: Teaching Technology, Charles Crowell</p>	<p>The purpose of this course is to acquaint a limited number of</p>		

	<p>students with the general principles of instructional technology as they are applied through the use of the Personalized System of Instruction or PSI format. Students in this course serve as proctors or learning assistants for the students presently enrolled in Psychology 211A. Therefore, proctors should have a relatively good grasp of the material in a general psychology course. Accordingly, preference generally will be given for enrollment to those having previously taken 211A. Proctors duties include the monitoring and facilitation of student progress in 211A through quiz grading, recordkeeping, and discussion. In addition, assigned readings in the area of instructional technology and a final project will be required. Final grades will be based upon the quality of completion of the assigned tasks. Proctors must be available from 8:00 - 10:00 a.m.</p>		
<p>PSY 388: Computers in Psychology, Charles R. Crowell</p>	<p>This course is intended primarily for CAPP students although</p>		<p>Some background in computers is required, preferably</p>

	<p>others may enroll with permission of the instructor. The course is oriented toward the design and completion of a project in an area such as database management, computer-based learning, or human productivity improvement. Projects are developed in consultation with the instructor.</p>		<p>knowledge of a programming language such as FORTRAN, BASIC, or PASCAL. Experience with microcomputers is beneficial. Weekly meetings with instructor are required. Readings, tutorials, and other exercises are scheduled as needed. An approved project must be identified and completed by the end of the semester.</p>
<p>PSY 401: Advanced Statistics, Scott Maxwell</p>	<p>This course extends Psychology 341 in two respects. First, additional attention is given to the logic of inferential statistics. Special focus is placed on the purpose, strengths, and limitations of hypothesis testing, especially as it is used in psychological research. Second, this course considers statistical analysis of data from more complex data structures than typically covered in Psychology 341. The goal of this part of the course is to heighten students' awareness of the variety of research questions that can be addressed through a wide range of designs and accompanying analyses. The</p>		

	orientation of the entire course focuses much less on the computational aspects of analyzing data than on the conceptual bases of what can be learned from different approaches to data analysis.		
Psy 474: Cognitive and Affective Neuropsychology, Bradley Gibson	This course will survey the biological bases of cognition and emotion. The primary objective of this course will be to understand how human cognitive and affective behaviors are mediated in cortical and subcortical foci in the brain. Particular attention will be paid to cognitive and affective deficits that result from brain trauma and disease.		

Nombre de La Universidad: Purdue University

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
PSY 200: Introduction to Cognitive Psychology	The goal of this course is to acquaint students with the history, philosophy, and research surrounding selected issues in the psychology of cognition. The issues include: learning; visual perception; memory and knowledge; imagery; attention; problem solving and reasoning; decision making; and speech	3	

	and language. For each topic, we will discuss the problems confronting researchers, what we know about the issue, and what remains unknown. Computer laboratory assignments that demonstrate classical experiments in cognitive psychology compliment the course lectures.		
PSY 204: Use of Computers in Psychology	This course will cover several of the major uses of computers in psychology, including statistical analysis, computer-controlled experiments, computer simulation of psychological models, and word processing.	3	PSY 201: Introduction to Quantitative Topics in Psychology
PSY 220: Brain and Behavior: An Introduction	A survey of the relation of brain structure and function to behavior. Topics covered include: sensation and perception; the effect of early experience on the growing brain; learning; motivation; sleep and dreaming; language and thought; abnormal behavior and brain injury.	3	
PSY 310: Sensory and Perceptual Processes	Perception, our awareness of the external world, is influenced by the characteristics of the stimulus, the nature of our sensory nervous system, context, past experience and	3	

	<p>expectancy. In this course we will consider these factors as we examine the workings of each system, the major perceptual phenomena of each system, and the theories proposed to explain these phenomena. Topics to be discussed include the perception of color and pattern, 3-D vision, motion and location, speech and pitch perception, perceptual disorders, and illusions.</p>		
PSY 311: Human Memory	<p>This course provides a survey of theories and research about how humans remember information and why they often forget. Topics include research on amnesia, forgetting, and sensory memory systems as well as on practical issues such as how to improve memory.</p>	3	<p>PSY 201: Introduction to Quantitative Topics in Psychology PSY 203: Introduction to Research Methods in Psychology</p>
PSY 318: Problem Solving and Decision Making	<p>This course integrates topics from the fields of psychology, artificial intelligence, and decision sciences with an emphasis on psychology. The course will cover problem solving, decision making, inference, and categorization. The course will stress both research and practical techniques.</p>	3	
PSY 320: Brain and Behavior:	<p>This Group B fall course deals</p>	3	PSY 201: Introduction to

Sensation and Arousal	with the relation of the physical organization of the brain to certain well-understood aspects of mental life. The course begins by considering the structure and function of the principal units of the brain, namely the various types of nerve cells. Then most of the course is devoted to the brain mechanism which underlie sensation, perception, cognition, and arousal. Specific topics covered include: general principles of neural coding; special principles involved in the coding of space, time, color, and pattern; amnesias and agnosias; effect of infant and adult experience on sensory coding; habituation and selective attention; as well as daily rhythms involved in sleep, dreams, and states of consciousness. This course will be most accessible to students who are familiar with basic concepts of natural science.		Quantitative Topics in Psychology
PSY 321: Brain Research Laboratory: Electrophysiological Techniques	This course provides an introduction to electrophysiological methods. There are lectures on, and demonstrations of, electronic	3	A course in brain and behavior or psychobiology.

	instrumentation used for stimulus control and response recording. Students gain laboratory experience with macro-electrode recording of neural responses evoked in sensory structures, and make oral presentations of results from independent research projects.		
PSY 322: Brain and Behavior: Motivation and Interactive Processes	Neuroanatomical analysis of behavioral functions. Topics include: movement; sexual behavior; maternal behavior; hunger; thirst; emotion; pain; addiction; biological rhythms; memory; evolution of the brain; language; hemispheric specialization; brain damage; brain remodeling during development and aging; correlates of cognitive processing.	3	Six hours of psychology.
PSY 323: Brain Research Laboratory: Anatomical Techniques	This course is an introduction to the methods of neurobehavioral and psychopharmacological research. Students gain laboratory experience in small animal surgery, lesion techniques, direct brain stimulation, behavioral observation, computerized data collection, and histological techniques.	3	A course in brain and behavior or psychobiology.

<p>PSY 324: Introduction to Cognitive Neuroscience</p>	<p>The goal of this course is to acquaint students with the rapidly developing interdisciplinary field of cognitive neuroscience. The beauty of this field is that researchers are beginning to understand for the first time how the brain carries out various complex abilities, such as recognizing faces, producing and understanding speech, forming and retrieving memories of one's experiences, and executing smooth and accurate bodily movements. These advances are due to breakthroughs in neurobiology, brain-imaging techniques, studies with brain-damaged patients, artificial intelligence, and cognitive psychology. In addition to reviewing the history and methodology of cognitive neuroscience, we will cover recent developments in perception, attention, memory, language, motor control, planning and decision-making, and consciousness.</p>	<p>3</p>	
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Massachussets

Nombre de La Universidad: Boston University Boston, MA

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
*CAS PS 222. Perception and Behavior	Why do things look as they do? This question is examined with particular emphasis on experiments that clarify the relative contributions of nature and nurture, and structural and experiential factors. Watanabe	4 cr, either sem. (SS)	Prereq: CAS PS 101 or PS 105.
CAS PS 336 Introduction to Cognitive Psychology	Provides an introduction to basic topics and research issues relevant to cognitive psychology. Emphasis placed on understanding how we perceive, attend, and remember information. Related topics include language, problem solving, and intelligence. Somers.	4 cr, either sem.	Prereq: CAS PS 101
CAS PS 520 Research Methods for Perception and Cognition	Computer-based laboratory instruction in research methods and techniques for perception and cognitive science. Students plan and conduct experiments, and analyze and present data. Somers.	4 cr, 2nd sem.	Prereq: CAS PS 222 and 336 and PS 211 or MA 115/116 or equivalent; or consent of instructor.
CAS PS 524 Remembering the Past-The Psychology of Memory	An examination of human memory across the life span. Data are taken from laboratory studies, everyday contexts, the clinic, as well as modern and ancient literary sources. Topics include cognitive models of	4 cr, 1st sem.	Prereq: two or more 300-level psychology courses or consent of instructor

	memory, individual differences in memory, permanence of memory, and the accuracy of memory in courtroom testimony. Major paper required. Coleman.		
CAS PS 525 Cognitive Science	Theories of human cognition which integrate findings from diverse fields: psychology, philosophy, linguistics, computer science, and neuroscience. Review of interdisciplinary research methodology, including connectionist modeling, and applications to questions on human thinking, problem solving, development, dysfunction, and social behavior. Harris.	4 cr, either sem.	
CAS PS 530 Neural Models of Memory Function	Computational models of neurobiological mechanisms for memory function and spatial navigation, with a particular emphasis on cellular and circuit models of the hippocampus and related cortical structures. Hasselmo.	4 cr, 2nd sem.	Prereq: consent of instructor.
AS PS 546 Cognitive Development	Cognitive development from birth through early adolescence. Relationship of cognition to other traditional areas of psychology (e.g., perception, language, learning, memory, physiology, and	4 cr, 1st sem.	Prereq: CAS PS 241 or PS 243.

	psychopathology). Kelemen.		
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Nombre de La Universidad: Gordon College Wenham, MA

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
PY250 Psychology of Memory	Examination of the organization of cognitive functioning with particular emphasis on human memory and the manner in which information is processed. Studies most prominent features of human knowledge acquisition. Topics include short-term and permanent memories, retention and interference, and memory with and without awareness. The relevance of human memory to contemporary social issues (e.g., child sexual abuse and the recovered memory/false memory controversy) is also discussed.	(4)-	
PY342 Cognitive Psychology	Explores the relationship between cognition and reality focusing on questions of meaning and value. Topics include perceiving, remembering, imagining, language and ecological approaches to psychology. Prerequisites: PY257 and junior standing for majors. Permission	(4)-	

	of instructor for non-majors. (Alternate years. Offered 2003-2004.)		
PY342L Cognition Lab	Demonstrates various phenomena in perception, memory and imagination; major research project required. (Alternate years. Offered 2003-2004.) Lab fee.	(0)-	
PY352 Social Perception and Cognition	Explores at an advanced level research and theory on how people feel, act and think with respect to others. Topics such as cross-cultural psychology, emotion, cognition, intimate relationships and moral dimensions of social interaction are addressed. Laboratory	(4)-	prerequisite: PY257 Research Methods II or permission of instructor. (Alternate years. Not offered 2003-2004.)
PY352L Social Perception and Cognition Lab	Introduces methods of research on social interactions, including field and laboratory experiments, observation (e.g., videotaping), interviewing and use of archival material. Independent research project required. (Alternate years. Not offered 2003-2004.) Lab fee.	(0)-	

Nombre de La Universidad: Smith College Northampton, MA

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
18	Theory and research on current topics in cognition, including	4 credits	Prerequisite: 111 or permission of the instructor. Enrollment

Cognitive Psychology	attention, concept formation, imagery, memory, decision making, and intelligence.		limited to 36.
14 Seminar in Foundations of Behavior	The seminar will focus on questions that emerge from exciting new experimental, ethological and philosophical work on animals. The central topics will be concept formation and categorization, memory, deception, theory of mind, communication, and consciousness.	4 credits	PrereqyusutesL a 200 level class in Psychology, especially recommended from among PSY 218, PPY 224, PSY 211, PSY 215, PPY 209, PPY 213. {N} Offered Fall 2003-2004 Jill G. de Villiers and Peter de Villiers
18 Experiments in Cognitive Psychology	A laboratory-based investigation of aspects of human cognition, on such topics as memory, attention, language processing, and concepts. Students will complete several studies and will learn to design, collect data, and analyze data for an original experiment in cognitive psychology.	4 credits	Prerequisites: 112 and either 218 or COG 200. Enrollment limited to 16. (E)

Michigan

Nombre de La Universidad: Madonna University Livonia, MI

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
PSY3213 Cognitive Psychology	An exploration of historical and contemporary research and theory concerned with cognitive processes including attention,		

	memory, problem-solving, and concept formation.		
PSY3221 Cognitive Psychology Laboratory	Laboratory work emphasizing a presentation of methods of research assessing human attention, memory, and problem-solving processes. Research, design, data analysis, and research report writing are also emphasized.		
PSY3413 Sensation & Perception	Reading and discussion concerning psychophysical methods, sensory physiology, phenomenology of various sensory systems and theories of the perceptual process.		
PSY3421 Sensation and Perception Laboratory	Laboratory work coordinated is designed to increase comprehension of psychology as a laboratory science in general and the experimental study of the perceptual process in particular, emphasis will be placed on the development of skills involved in the design of experiments, data collection, data analysis, reasoning about experimental results and scientific report writing.		

Missouri

Nombre de La Universidad: University of Missouri at Columbia

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
PSYCH 240 COGNITIVE PSYCHOLOGY	This course surveys basic research and theory in cognitive psychology, including the areas of learning and memory, perception, consciousness and attention, language, decision making, reasoning and problem solving. The objective of the course is to produce a general understanding of and appreciation for the nature and complexity of the human mind from the perspective of cognitive psychology. This will include knowledge about the various phenomena investigated by cognitive psychologists, an understanding of the experimental procedures and logic used to study those phenomena, and an appreciation for the theories that attempt to explain them. A mixture of lectures, class demonstrations, class discussions and written assignments will be used in pursuit of these ends.	3	PSYCH 1 GENERAL PSYCHOLOGY
PSYCH 279 HUMAN MEMORY	This undergraduate survey course introduces research on verbal and nonverbal human	3	PSYCH 216 RESEARCH METHODS IN PSYCHOLOGY II

	memory. The course will include a review of amnesia and life-span memory development, with emphasis on a cognitive neuroscience perspective.		
PSYCH 293 PERCEPTION AND THOUGHT	This course covers various aspects of human cognition, which include perception, or the immediate interpretation of sensory stimuli, as well as thought processes such as memory, imagery, reasoning, problem-solving, and the use of language.	3	PSYCH 1 GENERAL PSYCHOLOGY PSYCH 215 RESEARCH METHODS IN PSYCHOLOGY I
PSYCH 379 HUMAN COGNITION LABORATORY	The emphasis in this course is on the scientific understanding of human learning and memory. Readings and discussion will be used as a tutorial on the conduct of research in this field. In addition, students will work in groups to develop and execute a research project of their own design. Students will report their results in class and in an APA format paper.	3	PSYCH 216 RESEARCH METHODS IN PSYCHOLOGY II
PSYCH 380 HUMAN SENSES LABORATORY	The course has two class meetings per week in a lecture format and includes laboratory work. The subjects covered are primarily vision and hearing. There is also a quick survey of taste, smell, and the somatic	3	PSYCH 216 RESEARCH METHODS IN PSYCHOLOGY II

	(body) senses.		
PSYCH 390 COGNITIVE NEUROSCIENCE	This course surveys research on the neural basis of human information processing. Lectures and assigned readings cover applications of techniques from the neurosciences to problems of cognitive psychology. A general introduction to the study of the mind and brain is provided; therefore, no prior coursework in either cognitive psychology or physiological psychology is assumed.	3	PSYCH 216 RESEARCH METHODS IN PSYCHOLOGY II
PSYCH 393 PERCEPTION	An examination of research and theories about how sensory information is interpreted (and sometimes misinterpreted). All senses will be covered, but with greatest emphasis on vision, and to a lesser extent on hearing.	3	PSYCH 216 RESEARCH METHODS IN PSYCHOLOGY II
PSYCH 440 USE OF COMPUTERS IN PSYCHOLOGY	Surveys uses of digital computing systems in psychology and other behavioral sciences. Topics include structuring data bases, language processing, simulation of mental/social processes, online facilities in research.	3	

Montana

Nombre de La Universidad: Montana State University Bozeman, MT

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
PSY 311 SENSATION & PERCEPTION	Basic principles of sensory systems (with emphasis on the visual system), contemporary psychophysical procedures, and principles of perception.		PREREQUISITE: PSY 301. PHYSIOLOGICAL PSYCHOLOGY
PSY 313 SENSATION & PERCEPTION LAB	Laboratory to accompany PSY 311, exploring issues and techniques in sensation and perception.		PREREQUISITE: PSY 221. RESEARCH DESIGN AND ANALYSIS I COREQUISITE: PSY 311
PSY 361 MEMORY AND COGNITION	Theories and evidence concerning human information processing, focusing especially on attention and memory, problem solving, decision making, reasoning, and related topics.		PREREQUISITE: PSY 100 INTRODUCTORY PSYCHOLOGY
PSY 363 MEMORY AND COGNITION LAB	Laboratory to accompany PSY 361, exploring issues and techniques in memory and cognition.		PREREQUISITE: PSY 221. RESEARCH DESIGN AND ANALYSIS I COREQUISITE: PSY 361
PSY 462 PSYCHOLINGUISTICS	Examines the psychological processes that make it possible for humans to learn and acquire language. Emphases on how spoken and written language is understood, how speech is produced, and how language is acquired.		PREREQUISITE: PSY 100 INTRODUCTORY PSYCHOLOGY or PSY 361 and ENGL 236

Nebraska

Nombre de La Universidad: Nebraska, University of Lincoln, NE

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
ES][IS] 263. Introduction to Cognitive Processes	Introduction to the psychological processes involved in pattern recognition, memory, human learning, problem solving, language development, verbal communication, and decision making, as viewed from an information processing standpoint.	(3 cr)	Prereq: PSYC 181. Introduction to Psychology
460/860. Human Memory	Issues in human memory within the context of cognitive psychology: attention; short and long term memory; retrieval processes; semantic memory; how long-term memory is involved in comprehension and knowledge; how emotion affects memory; and the major research paradigms used in the study of memory.	(3 cr)	Prereq: 12 hrs psychology, including PSYC 350. Research Methods and Data Analysis
IS] 463/863. Perception	Analysis and comparison of approaches to the study of current problems in human perception and information processing. Psychophysical judgment, signal detection theory, perception of form and space, and the role of imagery in perception.	(3 cr)	Prereq: 12 hrs psychology, including one 200-level Group 1 course.

IS] 461/861. Learning Processes	Theoretical evaluation of studies of learning, thinking, and perception.	(3 cr)	[Prereq: 12 hrs psychology, including PSYC 268 Learning and Motivation
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Nombre de La Universidad: Nebraska, University of, at Kearney Department of Counseling & School Psychology

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
PSY 312 - Sensation and Perception -	Sensory and perceptual systems are examined in detail.	3 hours	Prereq: PSY 203GS General Psychology Prior completion of PSY 270 Experimental Psychology * is recommended.
SY 312L - Sensation and Perception Laboratory	Sensory and perceptual phenomena are reviewed within a laboratory setting.	- 1 hour	Prereq: PSY 270 Experimental Psychology * Must be taken concurrently with PSY 312 *.
PSY 430/830P - Memory and Cognition	Topics concerning intellectual functioning are reviewed. Emphasis is placed on the information processing approach to the study of mental life. Topics include perception, attention, consciousness, memory, problem solving, and language.. Spring only.	- 3 hours	Prereq: PSY 203GS General Psychology Prior completion of PSY 270 * Experimental Psychology is recommended
PSY 430L - Memory and Cognition Laboratory	The methodology used in the study of cognitive processes is reviewed Spring only.	- 1 hour	Prereq: PSY 270* Experimental Psychology Must be taken concurrently with PSY 430 *.

New Hampshire

Nombre de La Universidad: Dartmouth College

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
Introduction of the Neurosciences	This course provides students with an introduction to the fundamental principles of neuroscience. The course will include sections on cellular and molecular neuroscience, neurophysiology, neuroanatomy, and cognitive neuroscience. Neuroscience is a broad field that is intrinsically interdisciplinary. As a consequence, the course draws on a variety of disciplines, including biochemistry, biology, physiology, pharmacology, (neuro) anatomy and psychology. The course will begin with in depth analysis of basic functions of single nerve cells. We will then consider increasingly more complex neural circuits, which by the end of the course will lead to a analysis of the brain mechanisms that underlie complex goal-oriented behavior.		
Experimental Design,	This course is concerned with		

Methodology, and Data Analysis	the various ways whereby empirical information is obtained and analyzed in psychology. Coverage will include the design of experiments and surveys, their execution, and the statistical tasks required to make sense of the data obtained using these techniques. There will be both lecture and discussion sections; independent projects will be required. The discussions and projects will include everyday applied problems as well as more traditional psychological problems.		
Perception	Our senses are our windows to the world, and the scientific study of the senses is one of the oldest sub-disciplines in experimental psychology. This course introduces students to the fundamental workings of our senses of vision, hearing, touch, taste and smell. The course includes careful consideration of experimental methodology as well as content.		
Physiological Psychology	The course is designed for majors and non-majors, the course provides an introduction to the biological processes		

	<p>underlying behavior. Basic neuroanatomy, cellular physiology, and endocrinology will first be outlined. Such psychological concepts as sensation, learning, and motivation will then be related to neural function and to a variety of physiological correlates.</p>		
<p>Cognition (cross-listed with COG2)</p>	<p>An introduction to the study of thought, memory, language, and attention from the point of view of information processing. In surveying research in cognitive psychology, substantial contact is made with related cognitive sciences, such as artificial intelligence, linguistics, neuroscience, and contemporary philosophy. In the course of examining general principles of cognition, the following topics are discussed: mental imagery; concepts; reasoning; discourse; monetary and courtroom decision making; eye-witness testimony; social attribution and stereotyping; language in chimpanzees; expert systems; the relationship between human and computer intelligence; the neural basis of cognition; the relationship</p>		<p>Psychology 1 or 6 or Computer Science 5.</p>

	between information processing and conscious experience; and the philosophical foundations of cognitive science.		
Issues in Information Processing	Courses with this number consider topics from the areas of perception, memory, cognition, and quantitative models from the point of view of information processing. Material is treated at an intermediate level on a set of issues not covered in Psychology 21 and 28. Selection of issues is left to the discretion of the instructor, but specific emphasis is given to methodology. Enrollment limited.		
Principles of Human Brain Mapping with fMRI	This course is designed to introduce students to the theoretical and practical issues involved in conducting functional magnetic resonance imaging (fMRI) experiments of cognitive and behaviorally-related brain activity. Participants will gain an understanding of the physiological principles underlying the fMRI signal change, as well as the considerations for experimental design. The course will include firsthand exposure to the		

	<p>scanning environment and data collection procedures. Participants will be provided conceptual and hands-on experience with image processing and statistical analysis. At the completion of this course, it is expected that participants will be prepared to critique, design, and conduct fMRI studies; appreciate limitations and potentials of current fMRI methods and techniques; and better understand the broad range of expertise required in an fMRI research program. The course is designed to provide the participant with intensive, hands-on instruction. As a result, enrollment in the course will be limited to 20 people. Knowledge of MR physics, signal processing, or the UNIX/Linux operating system is not a prerequisite.</p>		
Sensory Psychology	<p>All knowledge of the physical world comes to us via our senses. This course explores the capacities and limitations of our sensory systems and the biological mechanisms that determine those capacities.</p>		

	<p>Topics include the transduction of physical stimuli to neural messages and the encoding and decoding of those messages. The laboratory serves to acquaint students with the various methods employed in the study of sensory processes.</p>		
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New Jersey

Nombre de La Universidad: Princeton University

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
210 Formal Methods in the Cognitive Sciences	<u>D. Osherson</u>		
255 Cognitive Psychology	<u>F. Tong</u>		
306 Memory and Cognition	<u>A. Treisman</u>		
321 (WWS 312/PSY 321), The Psychology of Decision Making and Judgment	<u>D. Kahneman & E. Shafir</u>		
403 Functions of Inferior Temporal Cortex: A Case Study in Cognitive Neuroscience	<u>C. Gross</u>		
259ab, Introduction to Cognitive Neuroscience	<u>S. Kastner</u>		
304, Minds of Humans, Minds of Machines	<u>D. Osherson</u>		
310. Psychology of Thinking	<u>P. Johnson-Laird</u>		
322, (PSY/ORF 322), Human Machine Interaction	<u>A. Kornhauser, J. Cooper, P. Johnson-Laird</u>		
330, Introduction to Connectionist Models	<u>K. Norman</u>		

Nombre de La Universidad: Seton Hall University

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
PSYC 1311 Using Computers in Psychology.	Overview of the ways computers are used in psychology and related disciplines. Interfacing computers for purposes of experimental control and monitoring of behavior, statistical analysis, database management, word processing, simulation and applications programming.	3	
PSYC 3213 Perception.	Examination of research literature pertaining to visual and auditory perception. Surveys of psychophysical methods; basic principles of visual acuity, color perception, perception of movement, constancies, development and learning, motivational factors, illusions, eidetic imagery, form identification, sound localization and perception of speech	3	PSYC 1101 Introduction to Psychology.
PSYC 3214 Cognitive Processes.	Examination of theory and research on the mental processes that characterize thought, including attention, perception, memory, language, reasoning and problem solving.	3	

PSYC 3215 Learning.	An evaluation of the historical and contemporary research literature and theoretical issues concerning basic learning principles and processes (includes laboratory).	4	PSYC 1101 Introduction to Psychology.
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New York

Nombre de La Universidad: Alfred University Alfred, NY

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
PSY 313 - Cognitive Processes	An exploration of the psychological organization and functions of the mind. The point of view of people as active processors of information is adopted. Topics include attention, recognition, varieties of memory, psycholinguistics and consciousness. Emphasis is placed on the experimental method and its application to the study of cognitive experiences and activities..	4 hours.	Prerequisite: PSY 100 Introduction to Psychology or permission
PSY 315 - Sensation and Perception	A study of the physiological and psychological processes involved in the immediate experience of sensory stimulation. Topics include sensory systems and coding mechanisms, psychophysical methods, signal detection,	4 hours.	Prerequisite: PSY 100. Introduction to Psychology

	illusions, and complex perceptual processes.		
SY 365 - Cognitive Development	The course examines the theories and research in cognitive development from infancy through adolescence. Piagetian, Vygotskian, and Information-Processing Approaches are explored while examining the development of processes including attention, perception, memory, language, and reasoning.	4 hours.	Prerequisite: PSY 100. Introduction to Psychology
PSY 422 - Cognition and Aging	A lecture and discussion course covering current research and theories of cognitive processes in the older adult. Basic topics include age differences in memory, verbal processes, motor performance, perception, problem solving, and intelligence.	2 hours.	Prerequisite: PSY 100. Introduction to Psychology Recommended PSY 313 Psychological Research and Design or GRO 300 or permission of instructor. (Cross-listed as GRO 422) (Alternate years)

Nombre de La Universidad: Colgate University Hamilton, NY

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
PSYC 252 Language and Thought	Taught by: S.Kelly Language is a distinctive human ability that distances us from the rest of the animal kingdom, including the chimpanzee, with whom we share 98% of our		Prerequisite: PSYC150 General Psychology or 170 Introduction to Brain and Behavior, or permission of instructor.

	<p>genetic inheritance. Although we think of language as primarily serving communication in its advanced form, it is also an important vehicle for thought, with the potential to extend, refine and direct thinking. The interaction of language with other cognitive abilities is the central focus of the course. Students compare the communication systems of other species with human language, examine efforts to teach human language to apes, learn how psycholinguists conceptualize and investigate language-mind relationships, and inquire into the cognitive abilities of the deaf and other language-impaired individuals, as well as of bilinguals. Attention also is given to evolutionary changes in the neural structures implicated in human language and to neural processes constraining the developmental course of language acquisition.</p>		
<p>PSYC 257 Human Mind, Animal Mind</p>	<p>Taught by: R. Braaten</p> <p>This course is an investigation of the origins of the human mind. Comparisons between</p>		<p>Prerequisite: PSYC 150 General Psychology or 170 Introduction to Brain and Behavior, or permission of instructor.</p>

	<p>humans and other animals are made in order to understand both the uniqueness of the human mind and its similarity to the minds of other animals. Four broad questions concerning animal and human mind are addressed: How do species compare in their mental abilities? What is the function of intelligent behavior? What are the evolutionary origins of mind? What are the developmental origins of mind? In laboratory students conduct original research addressing some aspect of one of these four questions. Three lectures and one laboratory per week.</p>		
<p>PSYC 351 Perception and Cognition</p>	<p>Taught by: D.Johnson</p> <p>This course focuses on the sensory and cognitive processes that enable humans to elaborate a mental model of the physical world. The course examines the ways humans internally represent external objects and how events in turn influence their perceptions. Although most of the examples are from the visual modality, the course stresses the unity of the</p>		<p>Prerequisite: PSYC 200 Research Methods in Psychology or permission of instructor.</p>

	senses and the supramodal character of mental schemata. Three lectures and one laboratory per week.		
SYC 358 Cognitive Developmental Psychology	Taught by: R. Braaten This course is a study of cognitive development from the prenatal period through early childhood, with a special focus on infancy. The primary goal of the course is to gain an understanding of the developmental origins of cognition and perception. Topics include the development of perception, learning, memory, concepts, musical abilities, language, counting, and reasoning and problem-solving. Three lectures per week.		Prerequisite: PSYC 200 Research Methods in Psychology or permission of instructor.
PSYC 450 Research Seminar in Experimental/Cognitive Psychology	Taught by: R. Braaten, D. Johnson, S.Kelly This seminar focuses on a specific research topic in the area of human cognition, perception, psycholinguistics, or human or animal learning. The topic varies from term to term. Students are expected to study a topic in depth and to participate in original empirical		Prerequisites: PSYC 200 Research Methods in Psychology, 309 Quantitative Methods in Behavioral Research, and one course from 250 to 259 or from 350 to 359.

	work in this area. Three lectures and one laboratory per week. This course is open to junior and senior psychology concentrators and to others by permission.		
PSYC 455 Seminar in Attention and Memory	<p>Taught by: D. Johnson</p> <p>In this seminar we will read original journal articles and study in depth current theories and empirical findings in human attention and memory from a cognitive perspective. Examples of problems to be addressed include: bottom-up vs. top-down attention allocation, dual-task performance, inhibition and attentional control, attention and working memory, memory for skills, autobiographical and emotional memories, memory impairments, and memory in everyday life (e.g., memory loss with age, Alzheimer's Dementia, Alcoholic Dementia, etc).</p>		Prerequisites: PSYC 200 Research Methods in Psychology and PSYC 250-259, 350-359, or permission of the instructor. Offered in the spring only, in alternate years.

Nombre de La Universidad: Hartwick College Psych major. Oneonta, NY

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
324 Laboratory in Learning and Memory	Research and theory in human and animal processes by which past experience or practice		Prerequisites: Psyc 110 General Psychology and Psyc 200 Psychological Research

	results in relatively permanent changes in behavior; design and execution of experiments.		Methods. (SBA)
28 Laboratory in Cognition	Cognition, or mental activity, involves how we acquire, store, retrieve and use knowledge. The course focuses on what we know about how our mind works. Several types of mental processes are highlighted: perception, memory, imagery, language, concept formation, problem solving, reasoning and decision making. The laboratory component consists of the collection, analysis and reporting of data by students.		Prerequisites: Psyc 110 General Psychology and Psyc 200 Psychological Research Methods. (SBA) Syllabus
334 Human-Computer Interaction	In the first half of this course, students learn to apply psychological theories and methodologies toward making computers easier to learn and simpler to use. In the second half we explore the role of computers in society. Sample topics in this segment include computerized workplaces, ethical and legal issues, privacy, international perspectives, educational applications, the economy, technological risks, philosophical frontiers, etc.		Prerequisite: Psyc 110. General Psychology

Nombre de La Universidad: Hobart & William Smith Colleges Geneva, NY

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
231 Cognitive Psychology	This course is designed to provide you with a general understanding of the principles of cognitive psychology. Cognitive psychology is the branch of psychology concerned with how people acquire, transform, retrieve, use and communicate information. We will discuss the problems and theories associated with these processes as well as the methods that have been implemented to examine them.		Prerequisite: Psych 100 Introduction to Psychology. (Offered annually)
310 Research in Perception and Sensory Processes	Exploration of sensory processing from the real world to perceptual judgements. The emphasis is on visual perception. Some physiology of the visual system is explored, establishing some distinctions between physiology and cognition. The course concludes with some comments on the role of experience in perception. With laboratory.		Prerequisite: Psych 210 Statistics and Research Methods. (Offered annually) Typical reading: R.L. Gregory, Eye and Brain
331 Research in Cognition	An in-depth examination of experimental methodology in the field of cognitive psychology is covered. The use of reaction		Prerequisites: Psych 210 Statistics and Research Methods and 231 Cognitive Psychology. (Offered annually)

	time and accuracy measures is emphasized. Students will conduct a study in a cognitive area of their choice and present it during a classroom poster session.		
375 Topics in Cognitive Psychology	Advanced discussion of higher-order cognitive processes involved in areas such as implicit and explicit memory, memory distortions, language development, and problem solving is conducted. Two substantial term papers are required.		Prerequisite: Psych 231 Cognitive Psychology. (Offered occasionally)

Nombre de La Universidad: New York University New York, NY

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
Perception V89.0022	Carrasco, Landy. Survey of basic facts, theories, and methods of studying sensory and perceptual discrimination, with major emphasis on vision. Representative topics include receptor function and physiology, psychophysics, constancy, adaptation, learning, motivation, set, and attention. Emphasis and selection of	4 points.	

	topics are determined in part by current research developments.		
Cognitive Psychology V89.0029	McElree, Pelli. Introduction to theories and research in some major areas of cognitive psychology including human memory, attention, language production and comprehension, thinking, and reasoning.	4 points.	
Cognitive Neuroscience V89.0025	Curtis, This survey course will examine important and influential research and theory in cognitive neuroscience. Cognitive neuroscience is a relatively new cross-disciplinary field merging approaches from psychology, neuroscience, and neurology to understand the neural basis of cognition. Material covered will include the study of brain-injured patients, neurophysiological research in animals, normal cognitive processes in humans with the use of behavioral and physiological techniques (e.g., fMRI). Topics to be covered include perception, attention, memory, motor control,	4 points.	

	<p>language, and development. The aims of the course are to provide students with a broad understanding of the foundations of Cognitive Neuroscience including dominant theories of the neural underpinnings of a variety of cognitive processes and the research that has led to those theories. In doing so, students will also learn about the goals of Cognitive Neuroscience research and the methods that are being employed to reach these goals.</p>		
Laboratory in Human Cognition V89.0028	<p>Snodgrass.</p> <p>Presents a state-of-the-art introduction to the design and implementation of experiments in cognitive psychology as performed on the Apple Macintosh microcomputer. Experiments are performed in the areas of perception, learning, memory, and decision making. Students carry out independent research projects and learn to write research reports conforming to APA guidelines.</p>	4 points.	Prerequisites: V89.0010 Statistics for the Behavioral Sciences and either V89.0020 Learning, V89.0022 Perception, V89.0026, or V89.0027.
Laboratory in Perception	Carrasco.	4 points.	Prerequisites: V89.0001

V89.0044	This course presents a state-of-the-art introduction to the design and implementation of experiments in perception. By participating in class-designed experiments and by carrying out a research project design by individual or pairs of students, students will learn how to formulate an experimental question, design and conduct an experiment, statistically analyze experimental data using a variety of statistical tests, write up the experiments as research papers, and present a short research talk.		Statistics for the Behavioral Sciences and V89.0010 and V89.0022 or V89.0028 or V89.0026
Psycholinguistics V89.0056	McElree. Examines theories and research concerning the cognitive processes and linguistic representations that enable language comprehension and production. Topics include speech perception, visual processes during reading, word recognition, syntactic processing, and semantic/discourse processing.	4 points.	Prerequisites: V89.0001 Statistics for the Behavioral Sciences and V89.0028.
Seminar in Memory V89.0023	Examination of the conceptual problems involved in	4 points.	Prerequisite: V89.0028

	understanding the retention of information. Reviews research findings addressed to those problems, involving studies with humans and subhumans and with environmental, psychological, and biochemical variables.		
Seminar in Thinking V89.0026	Braine. Systematic consideration of human thought processes, with emphasis on the experimental studies and theoretical interpretations of the major areas of cognition. Topics include thinking in the history of psychology, reasoning and problem solving, memory, intelligence, creativity, language, development of cognitive processes, and pathology of thought and language.	4 points.	Prerequisite: V89.0028 or V89.0034.

Nombre de La Universidad: Rochester Institute of Technology Rochester, NY

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
0514-443 Cognitive Psychology	This course examines how people perceive, learn, represent, remember and use information. Contemporary theory and research are	Class 4, Credit 4	(0514-210) Introduction to Psychology

	<p>surveyed in such areas as attention, pattern and object recognition, memory, knowledge representation, language acquisition and use, reasoning, decision making, problem solving, creativity, and intelligence. Applications in artificial intelligence and human/technology interaction may also be treated. Part of the psychology concentration; the psychology minor; and also may be taken as an elective.</p>		
0514-445 Psychology of Perception	<p>Covers topics of all sense modalities with emphasis on visual perception. Traces what happens to the physical stimulus as our sensory systems analyze it to produce complicated perceptions of the world around us. Many complex perceptual phenomena draw upon explanations at the physiological, psychological and cognitive levels. Professional elective for psychology majors. Part of the psychology concentration; the psychology minor; and also may be taken as an elective.</p>	Class 4, Credit 4	(0514-210 Introduction to Psychology or equivalent)
0514-530 Attention & Pattern Perception	<p>One of the most formidable bottlenecks in human</p>	. Class 4, Credit 4	(0514-210 Introduction to Psychology, 350 Psychological

	<p>information processing is the limitation of attention. This course surveys contemporary theory and research on selective and divided attention with an emphasis on laboratory research and its relevance in such applied areas as display layout and driving. Cross-modal attention and attention for action are covered, as is the relationship between attention and conscious awareness. This course also surveys Gestalt and contemporary cognitive approaches to object recognition. Required information processing track course for psychology majors. May also be taken as an elective</p>		<p>Statistics,400 Experimental Psychology)</p>
<p>0514-531 Language & Problem Solving</p>	<p>Perhaps the most significant cognitive capacity of human beings is their use and understanding of language. This course examines the structure of language and its relationship to thought, and surveys contemporary theory and research on the comprehension and production of spoken and written language. Applications such as artificial speech recognition are discussed. The</p>	<p>Class 4, Credit 4</p>	<p>(0514-210 Introduction to Psychology, 350 Psychological Statistics,400 Experimental Psychology)</p>

	<p>course also surveys the psychological literature on reasoning and problem solving and examines attempts in artificial intelligence to simulate human performance in these areas. Required information processing track course for psychology majors. May also be taken as an elective.</p>		
0514-532 Judgment & Decision-Making	<p>Explores judgement and decision-making processes and focuses on the social and cognitive aspects of complex information processing. Topics include selective perception, memory and hindsight biases, framing effects, heuristics and biases, social influences, group processes and common errors. Required information processing track course for psychology majors. May also be taken as an elective</p>	Class 4, Credit 4	(0514-210 Introduction to Psychology, 350 Psychological Statistics,400 Experimental Psychology)
0514-533 Learning & Memory	<p>This course reviews current research within a larger historical perspective. It presents the multistore or modal model of memory with an in-depth examination of the evidence used to support the model. Baddeley's Working Memory model is presented in</p>	Class 4, Credit 4	(0514-210 Introduction to Psychology, 350 Psychological Statistics,400 Experimental Psychology)

	<p>some detail to illustrate how theorists explain the huge amount of information we have about memory performance. It also includes topics such as memory structures, levels of processing, implicit and explicit memory, schemas, signal detection theory and global memory models. Theories of learning are clearly meaningful for the study of memory. With the new developments in connectionist models of learning, theories of learning again assume importance in scientific study. Required information processing track course for psychology majors. May also be taken as an elective.)</p>		
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Nombre de La Universidad: St. Bonaventure University St. Bonaventure, NY

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
301. Experimentation in Animal Learning and Memory	A lecture and laboratory course emphasizing the techniques and procedures used in studying the lawful behavior patterns of lower organisms. Every Two Years Dr. Lavin	3 credits	Prerequisites-Psychology 101 An Introduction to Psychology and 201 Psychological Research: Methods and Statistics I.
302. Experimentation in Human Memory and Cognition	A laboratory course exploring human memory, information	3 credits	Prerequisites-Psychology 202 Psychological Research:

	processing, and cognitive processes. The course will focus on experimental work, building from simple research to more complex designs, to develop a variety of research skills involved in such research.. Every Two Years Dr. Gelfand		Methods and Statistics II, and either 222Psychology of Learning & Memory* or 422. Cognition*
421. Perception*	Critical analysis of theories, methods of investigation, and data obtained in studies of sensory and perceptual processes, including the nature of physical stimulation, psychophysical methods, form perception, space perception, constancy, spatially coordinated behavior, and attention. Emphasis primarily but not exclusively on visual perception.. Every Two Years Dr. Carpenter	3 credits	Prerequisite-Psychology 101 An Introduction to Psychology
422. Cognition*	How do we think, and how can our thoughts processes be improved? The course will deal with contemporary approaches to the study of higher mental processes, with an emphasis on information processing. Topics will include memory, language, cognitive skills, reasoning, concept learning, and problem solving. Theories and research	3 credits	Prerequisite-Psychology 101 An Introduction to Psychology

	will be considered, along with applications to everyday life.. Every Two Years Dr. Gelfand		
222. Psychology of Learning & Memory	Theories, research, and applications of learning and memory, with evidence from, and applications to, humans and animals. Special emphasis on conditioning principles and behavior modification, and on memory for information. When possible, the principles will be applied to the analysis, control, and remediation of behavior.. Every Two Years Dr. Gelfand or Dr. Lavin	3 credits	Prerequisites-Psychology 101 An Introduction to Psychology

Nombre de La Universidad: Syracuse University Syracuse, NY

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
PSY 321 Introduction to Sensation and Perception	Common properties of sensory and perceptual systems and their physiological bases, emphasizing information processing	3 SI	
PSY 322 Human Information Processing	Means by which humans extract information from the environment. Feature extraction and pattern recognition, mechanisms of selective attention, and encoding and retrieval in short-term and long-term memory.	3 Y	

PSY 331 Laboratory in Sensation and Perception	Techniques and experimental design for research in human sensation and perception. Develop skills in conducting experiments, designing research projects, and writing research reports.		Prereq: PSY 313 Introduction to Research Methodology. Coreq: PSY 321 Introduction to Sensation and Perception
PSY 332 Laboratory in Human Information Processing	Experimental design and techniques for research in human memory and cognition. Students conduct class research studies.	2 Y	Prereq: PSY 205 Foundations of Human Behavior permission of instructor Coreq: PSY 322 Human Information Processing
Y 422 Cognition of Left/Right Brain Function	Evidence for left/right differences in cognitive functions in neurologically normal subjects and split-brain patients, handedness, functions of the corpus callosum, precursors in other species, theories of cerebral lateralization	3 IR	Prereq: PSY 223 Introduction to Biopsychology or 322 Human Information Processing, or permission of instructor
PSY 423 Cognition of Left/Right Brain Function Laboratory	Experimental design and research methodologies for research in cognitive neuropsychology. In-class experiments and final project.	2 IR	Prereq: PSY 422 Cognition of Left/Right Brain Function
Y 437 Cognition and Aging	Research and theory on the effects of aging and individual differences on basic cognitive functions, intelligence, wisdom, and cognitive performance in everyday situations.	3 SI	Prereq: PSY 337 Psychology of Adult Life: Maturity and Old Age or permission of instructor

North Carolina

Nombre de La Universidad: Elon University (North Carolina)

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
PSY 212. LEARNING AND MEMORY	This course addresses models of knowledge acquisition (including classical and operant conditioning and cognitive processes), encoding and storage of information, memory retrieval and forgetting. Prerequisite: PSY 111. Offered fall or spring.		PSY 111. GENERAL PSYCHOLOGY
PSY 312. COGNITIVE PSYCHOLOGY	Cognitive psychology studies how humans represent and process information about the environment in their role as thinkers, planners, language users and problem solvers.		PSY 111. GENERAL PSYCHOLOGY PSY 201. RESEARCH METHODS I
PSY 355. HUMAN PERCEPTION	Study in human perception includes research and theory on the structural and functional characteristics of various perceptual systems, on perceptual phenomena such as depth and color perception and on other related topics		PSY 111. GENERAL PSYCHOLOGY

Nombre de La Universidad: University of North Carolina-Greensboro

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
280 Cognitive Psychology	Survey of scientific theories and research in cognitive		121 General Psychology

	psychology. Topics include human learning, attention, memory, and problem solving.		
483 The Psychology of Thinking	Research and theory on human problem-solving and reasoning. Topics include classification, categorization, decision making, rational thought, and a discussion of awareness in thinking.		280 Cognitive Psychology
483L Psychology of Thinking with Laboratory	Research and theory on human problem-solving and reasoning including laboratory work conducting and participating in experiments about thinking. Topics include classification, categorization, decision making, rational thought, and awareness in thinking.		280 Cognitive Psychology 310 Statistics in Behavioral Science Research 311 Research Methods in Psychology

North Dakota

Nombre de La Universidad: North Dakota State University

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
211 Introduction to Behavior Modification	Basic principles and procedures governing acquisition, maintenance, and change of behavior, emphasizing human applications. Laboratory involves designing, implementing, and reporting an individual project.	3	111 Introduction to Psychology
322 Thinking and Making	Covers the functional uses of	3	111 Introduction to Psychology

Decisions	critical thinking. Focuses on uses in problem solving and decision making. Applications are directed at both personal and professional concerns		
460/660 Sensation and Perception	Explores physical, anatomical, and physiological bases of sensation and perception and their psychophysical measurement. Laboratory experiments complement lectures and demonstrate various experimental techniques and sensory phenomena. 2 lectures and equivalent of 2-hour laboratory.	3	351 Research Methods II
464/664 Attention and Thinking	Examines current behavioral and neuropsychological research and theory in the area of attention and thought processes. Laboratory experiments will demonstrate various attentional phenomena and highlight relevant design issues.	3	
488/688 Human/Computer Interaction	See Computer Science for description.	3	
718 Visual and Cognitive Neuroscience	Fundamentals of current visual and cognitive neuroscience research including detailed survey of ideas, methods, and models used to understand function of the human nervous	3	

	system.		
727 Advanced Topics in Visual Perception	Integrated overview of the field of vision research. Addresses recent developments in the study of the phenomenology, psychophysics, and neural substrates of human visual sensation and perception.	3	460/660 Sensation and Perception
731 Fundamental Processes in Cognition	Explores the underlying architecture of the human cognitive system—how it takes in, processes, stores, and retrieves information.	3	
732 Applied Cognitive Processes	Explores the ways cognitive principles operate in ecologically valid (real-world) situations.	3	
733 Judgment and Decision Making	Explores issues and topics related to judgment and decision making.	3	
735 Neural Networks	See Computer Science for description.	3	

Ohio

Nombre de La Universidad: Ohio State University

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
<u>302 Introduction to the Psychology of Listening and Reading U 4</u>	The recognition of spoken and written words will be traced from their registration by the senses to their storage in memory.		<u>100 General Psychology U 5</u>
<u>309 Human Motor Control and Learning U 3</u>	Experimental analyses of the processes underlying the		

	performance, learning and adaptation of movement skills.		
<u>310 Basic Psychology: Perception U 4</u>	Theory, methods, and physiological correlates of sensory and perceptual processes; emphasis on the relation of behavior to stimulus variation.		<u>100 General Psychology U 5</u>
<u>312 Learning, Memory, and Cognition U 4</u>	An introduction to experimental study of human memory, learning, and cognition.		<u>100 General Psychology U 5</u>
<u>371 Language and the Mind U 5</u>	Introduction to psychological processes for producing and understanding speech, the means by which these processes arise in the child, and their bases in the brain.		
<u>503 Introduction to Cognitive Psychology U G 4</u>	A study of cognitive processes from an information processing perspective; including attention, memory, language representation, reasoning, problem solving, and others.		<u>H320 Introduction to Data Analysis in Psychology U 5</u>
<u>508 Psychology of Judgment and Decision-Making U 5</u>	An overview of current models and empirical research on cognitive processes in human decision-making and judgment under risk or uncertainty.		<u>H320 Introduction to Data Analysis in Psychology U 5</u>
<u>510 Research Methods in Cognitive Psychology U 5</u>	Issues in experimental design; laboratory experiments include topics such as memory, perception, and attention.		
<u>513 Introduction to Cognitive</u>	Examination of the		<u>313 Introduction to</u>

<u>Neuroscience U 4</u>	neuroscientific approach to the study of cognition; primary focus on the psychobiology of memory, attention, language, and spatial orientation.		<u>Psychobiology U 4</u>
<u>603 Visual Perception U G 3</u>	Principles, theories, and methods relevant to the study of visual perception; emphasis on the availability and usefulness of visual information.		<u>310 Basic Psychology: Perception U 4</u>
<u>606 High-Level Vision U G 4</u>	Visual perception of solid shape, models of object recognition, perception of self-motion and of action.		<u>310 Basic Psychology: Perception U 4</u>
<u>612 Introduction to Cognitive Science U G 3</u>	Cognitive science is an interdisciplinary study of the nature of human thought; psychological, philosophical, linguistic, and artificial intelligence approaches to knowledge representation.		
<u>615^ Psycholinguistics U G 5</u>	An introduction to high-level language processing, including word recognition, sentence understanding, and discourse processing.		<u>601 Comparative Psychology U G 3</u>
<u>619^ Visual Information Processing U G 5</u>	Rapid visual decisions: how the visual representation is formed, stored, and interpreted, enabling one to read, drive, and look for and compare visual objects.		<u>100 General Psychology U 5</u>
<u>626 Sensory Psychobiology U G 3</u>	Introduction to neural mechanisms of sensation:		<u>501 Advanced Psychobiology U G 4</u>

	transduction, neuroanatomy, neurochemistry, and neurophysiological coding mechanisms for vision, audition, somatosensation, visceral sensation, balance, taste, and smell.		
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Nombre de La Universidad: Ohio Wesleyan University

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
PSYC 300.1 - Cognitive Psychology Lab	This course will focus on empirical demonstrations of fundamental concepts from cognitive psychology. Students will read primary literature sources, will collect and analyze data to replicate the investigations described, and will write brief reports on their conclusions.		PSYC 110 - INTRODUCTION TO PSYCHOLOGY
PSYC 300.2 - Intelligence: Theory and Assessment	A survey of current and historical theories of intelligence as well as the methods employed to assess intellectual performance. Issues relating to intelligence theory, such as the heritability of IQ, group differences in intelligence, and intelligence at school and at work, will also be discussed.		PSYC 110 - INTRODUCTION TO PSYCHOLOGY
<u>PSYC 346 - SENSATION AND PERCEPTION</u>	The primary focus of this course involves the processes by which		

	<p>organisms acquire and organize sensory and perceptual information. Each sensory system imposes limits on what an organism experiences and can bias its understanding of the world. This course will explore the nature and biological reasons for these limits and biases. Basic research methodologies and data will be discussed for each sensory system. The major emphasis, however, will be on the visual system, which will be used as a prototype for the understanding of the other sensory systems. Major topics emphasized within the visual system will include basic visual processes (anatomy and physiology), color, contrast sensitivity, form perception, depth and size discriminations, movement detection, and the effects of experience on the growth and development of the sensory system. Other sensory systems discussed are audition, touch, temperature, pain, taste and smell. The nature of consciousness, the selective sensitivities of each sensory</p>		
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	system, and the selective attention mechanism will also be explored.		
<u>PSYC 364 - COGNITIVE PSYCHOLOGY</u>	This course begins with a brief history of the study of the mind, followed by an examination of current models of human information processing. Special emphasis is placed on attention processes, memory processes and characteristics, organization of semantic knowledge, comprehension, language, and reasoning and problem solving. Course requirements include midsemester exams, a comprehensive final, and a written assignment. E-mail is employed to continue discussion of course material outside of class hours.		

Pennsylvania

Nombre de La Universidad: Carnegie Mellon University Pittsburg, PA

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
85-100 Introduction to Intelligence in Humans, Animals and Machines	A practical as well as theoretical introductory course aimed at increasing the students learning, problem solving, decision making and critical thinking skills.		

	<p>The course will begin by contrasting between intelligent and instinctive behaviors. It will then examine the roles that perception, learning, curiosity, problem solving, decision making, and language play in enabling humans and other animals to behave intelligently. Special attention will be paid to language in animals and to the nature of creativity. Finally, the course will examine the similarities in and differences between animals (including humans) and machine intelligence.</p>		
<p>85-111 Self-Paced Lisp Lab</p>	<p>Students enrolled in <u>85-213</u>, Human Information Processing and Artificial Intelligence, who are not familiar with LISP are required to take this self-paced LISP-lab. Students who are already familiar with LISP cannot take the lab for extra credit.</p>		
<p>85-211 Cognitive Psychology</p>	<p>This course will examine the cognitive processes underlying perception, mental imagery, short- and long-term memory, language comprehension, decision making, problem solving</p>		

	and skilled performance. Both the theory and the basic experimental findings will be covered in each area and the emphasis will be on the underlying information processing mechanisms.		
85-213 Human Information Processing and Artificial Intelligence	This class will review various results in cognitive psychology (attention, perception, memory, problem solving, language) and use of artificial intelligence techniques to simulate cognitive processes.		
85-310 Research Methods in Cognitive Psychology	This is a course in which students develop the research skills associated with cognitive psychology and cognitive science. Students learn how to design and conduct experiments, and analyze and interpret the data they collect. The course covers a variety of experimental designs, e.g., factorial, Latin Squares. Analyses of response times, qualitative data, and signal detection are also covered. Cognitive modeling will also be discussed. Topics include mental imagery,		85-211 Cognitive Psychology 85-213 Human Information Processing and Artificial Intelligence

	memory, and perception. The class format consists of lectures, discussions and student presentations.		
85-355 Introduction to Cognitive Neuroscience	Cognitive neuroscience is an emerging interdisciplinary field in which psychological, physiological, and computational methodologies are brought to bear in understanding the neural basis of cognitive processes. In this course, we will consider the application of methodologies such as physiological recordings from neurons in awake, behaving animals, functional neuroimaging (PET and fMRI) of normal subjects performing cognitive tasks, behavioral studies of brain-injured patients with selective cognitive deficits, and computational modeling of normal and impaired processing, in understanding cognitive domains such as high-level vision and attention, learning and memory, reading and language, meaning and semantics, and the organization		85-211 Cognitive Psychology 85-219 Biological Foundations of Behavior

	<p>and control of action. In each instance, the emphasis will be on how the application of converging methodologies, particularly those related to brain organization and function, leads to important insights into the nature of cognitive processes that would be difficult to obtain through any one conventional methodology alone.</p>		
<p>85-370 Perception</p>	<p>Perception, broadly defined, is the construction of a representation of the external world. Although we often think of perception as the processing of input to the sense organs, the world conveyed by the senses is ambiguous, and cognitive and sensory systems interact to interpret it. This course examines the mechanisms involved in visual perception, along with consideration of other perceptual systems such as auditory perception, haptic perception (touch) and pain. The course addresses how sensory coding interacts with top-down processes such as</p>		<p>85-102 Introduction to Psychology 85-211 Cognitive Psychology</p>

	selective attention, the use of context, and application of prior knowledge. Additional topics may include perceptual learning and development, object recognition, reading, speech perception, brain imaging studies, and perceptual impairments.		
85-382 Consciousness and Cognition	This course will examine the relationship between cognition and consciousness. One particular focus will be on the issue of how complex the processes that are largely unconsciously controlled may be and another is on the interaction of conscious and non-conscious processes in the control of cognition. We will also very briefly examine relevant ideas about consciousness that arise in other fields such as philosophy of mind and physics. The major topics to be included will be drawn from: the experience and functionality of consciousness, neuroscience approaches to consciousness, perceptual and attentional work on consciousness, cognition in		85-211 Cognitive Psychology 85-213 Human Information Processing and Artificial Intelligence

	<p>altered states of consciousness (in particular, dreaming), implicit memory, and the proceduralization of higher level cognitive processes. The course will consist of our reading and discussing primary research literature from the above areas. There will be a number of short written assignments based on the weekly reading and a term paper.</p>		
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South Carolina

Nombre de La Universidad: Clemson University Clemson, SC

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
PSYCH 333 Cognitive Psychology) Study of higher-order mental processing in humans. Topics include memory, learning of concepts, problem solving, and the psychology of language	3(3,0	. Preq: PSYCH 201 with a C or better or consent of instructor.

<p>PSYCH 334 Laboratory in Cognitive Psychology .</p>	<p>Selected experiments and demonstrations are conducted to reveal phenomena related to human perception, memory, reasoning, problem solving, and high-level mental processes.</p>	<p>1(0,2)</p>	<p>Preq: PSYCH 201 with a C or better and PSYCH 309, or consent of instructor. Coreq: PSYCH 333</p>
<p>PSYCH 422, H422 Sensation and Perception</p>	<p>Study of psychophysical techniques of measurement and sensory and perceptual processes related to vision, hearing, and the other senses</p>	<p>3(3,0)</p>	<p>. Preq: PSYCH 201 with a C or better and one 300-level psychology course, or consent of instructor.</p>

PSYCH 423 Sensation and Perception Laboratory	Selected experiments are conducted to demonstrate the phenomena involved in sensation and perception.	1(0,2)	Preq: PSYCH 309 or consent of instructor.
PSYCH 435 Human Factors Psychology.	Analyses of theoretical issues and research methods related to the interaction between people and machines and human performance. Topics include information processing theory, human control systems and displays, task simulation, perceptual and motor factors limiting human performance	3(3,0)	Preq: PSYCH 201 with a C or better and one 300-level psychology course, or consent of instructor.

Tennessee

Nombre de La Universidad: Vanderbilt college Tennessee

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
214. Perception	Current theory and research in sensation and perception, including an analysis of philosophical and biological issues. Understanding how	3	

	biological organisms acquire, process, and use information about objects and events in the environment. Vision, audition, taste, smell, and touch.		
216. Movement.	Psychological, computational, and neural perspectives on the activities of looking, reaching, grasping, speaking, smiling or frowning, walking and running	3	
222. Learning and Memory.	An analysis of the major theories and research results related to learning and memory.		
225. Cognitive Psychology.	Attention, pattern recognition, knowledge representation, language, reasoning, and human intelligence	3	
226. Thinking and Reasoning.	A survey of research findings, theories, and empirical approaches to understanding how we "think." Deductive reasoning, decision making, categorization, problem solving, and human rationality.		
232. Cognitive Neuroscience.	Introduction to the interdisciplinary field of cognitive neuroscience. How the brain supports cognition, perception, attention, memory, language, thought, action, and consciousness.		
234. Laboratory in Behavioral Neuroscience.	Lectures and accompanying experiments to demonstrate	3	201 neuroscience

	basic neural and endocrine regulation of behavior		
236. The Visual System. (Also listed as Electrical and Computer Engineering 225)	An interdisciplinary approach to how humans see and interpret their visual environment. Topics include the structure of the eye and brain (including optics), the physiology of individual cells and groups of cells, machine vision and models of visual function, visual attention, and mechanisms of complex visual perception. Lectures by faculty from Psychology, Engineering, and Cell Biology.	3	
242. Psychology of Language.	Introduction to psycholinguistics. Topics include the structure of languages, perception of speech, syntactic processing, comprehension, production of speech, acquisition of language by children, hemispheric lateralization, aphasia, and communication by animals.	3	222 o 225
251. How the Mind Works.	Seminar on theory and research in sensory memory, attention and consciousness, pattern recognition, short-term memory, episodic and semantic long-term memory, knowledge representations, reasoning and problem-solving.	3	
253. Laboratory in Cognition.	Applications of experimental	3	208 Principles of Experimental

	methods to the study of human cognition. Attention, short-term memory, long-term memory, implicit memory, knowledge representation.		Design, 209 Quantitative Methods, and either 222, 225, or 278
276. Categories and Concepts.	Categorization and conceptual thought processes examined from perspectives of cognitive psychology, developmental psychology, linguistics, anthropology, philosophy, and neuroscience.	3	
277. Brain Damage and Cognition.	Effects of neurological impairment from stroke, injury, or disease on perception, speech, memory, judgment, and behavior. Relation between brain systems and cognitive systems.	3	
278. Cognitive Science.	Interaction of cognitive psychology, artificial intelligence, neuroscience, and linguistics in explaining knowledge, perception, memory, and learning. Philosophical questions that arise in trying to understand the mind.	3	Prerequisite: 101 general psychology or 115 student seminar, Philosophy 100 or Computer Science 150

Texas

Nombre de La Universidad: Texas Tech University

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
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4323. Perception: Theories and Applications	Survey of methods and findings in perception. Emphasis on demonstrations of perceptual phenomena; theories of visual perception (cognitive and ecological); applications. Topics include illusions, depth, motion.	3	1300. General Psychology
4324. Cognition	Introduction to cognitive psychology, including perception, attention, memory, language, problem-solving, decision-making, and the development of expertise.	3	3401. Research Methods
4344. Cognitive Science	The consideration of multidisciplinary issues from cognitive psychology, artificial intelligence, neuroscience, linguistics, philosophy, and education. Appropriate for majors and nonmajors.	3	
5354. Seminar in Perception: Theories and Applications	Theoretical and applied issues in perception. Emphasis on demonstrations of perceptual phenomena (e.g., illusions, motion perception), theories of visual perception, and discussions of human-factors literature.	3	
5356. Seminar in Cognition	A survey of the research and theory on human mental activities such as attention, memory, concepts, language processing, problem solving,	3	

	and reasoning.		
5357. Seminar in Psycholinguistics	Current models of language, reading, and comprehension with attention to topics such as syntax, prepositional representation, metacognition, decoding, beginning reading instruction, and related computational models..	3	
5379. Human-Computer Interaction	Fundamentals of human-computer interaction including user interface design, usability and usability methods, cognition and user psychology, user-centered design, and understanding how designers think.	3	

Nombre de La Universidad: East Texas State University

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
PSYC 3444 -- Computer Methods in Psychology	This course introduces students to microcomputer operating system and a statistics software package, such as SPSS or SAS. It provides them with the skills necessary to select and perform basic statistical calculations and enables them to interpret the statistical outputs generated. In addition, students will demonstrate the ability to communicate by way of e-mail		

	and access and download materials from sites on the Internet.		
PSYC 3600 -- Cognition	This course is designed to provide an in-depth investigation into the cognitive processes involved in attending, recognizing, remembering, thinking, understanding, and problem-solving. Particular attention is paid to the ingenious techniques created by cognitive psychologists to explore the inner workings of the mind.		
PSYC 3707 -- Behavioral Neuroscience	The purpose of this course is to analyze the functions of the primary structures of the human brain as well as their anatomical locations.		
PSYC 4317/5317 -- Perception	A survey of research on vision, color perception, hearing, pattern perception, depth perception, smell, taste, and developmental perception accompanied by slide and video presentations. A brief review of theories of perception is also provided.		
PSYC 4707 -- Advanced Behavioral Neuroscience	This course will be an intensive investigation of the neurophysiological, anatomical, and chemical aspects of the nervous system and their		

	relation to sensory processes, perception, motivation, learning, emotion, and memory, with a particular focus on reviewing the recent professional literature.		
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Nombre de La Universidad: Trinity University

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
2308 Fundamentals of Cognition	An introduction to the principles of cognitive psychology. Topics include the development of the cognitive paradigm, attention, higher order processes in perception, language, memory, problem-solving and human-computer interaction. Application to other domains in Psychology and disciplines will be discussed.		
2318 The Nature of Language	An introduction to language systems across species. A comparison of perception, learning, memory, retrieval, and production of language systems. A study of the brain structures dedicated to language and the underlying structures that make language possible. The course covers insect, bird, chimpanzee, gorilla, and human language systems, as well as primates' learning in the laboratory and		

	computer languages.		
3330 Sensation and Perception	Study of sensory and perceptual systems. Emphasis is on the relationship of neurophysiological and cognitive principles. Major focus is on vision (visual neurophysiology, spatial vision, form, color, depth and motion) with some discussion of psychophysical methods, audition, speech perception and the chemical senses. Demonstrations and conducting experiments are part of course		1300 Principles of Psychology 2422 Statistics and Methods I
3331 Memory and Cognition	Examination of the fundamental principles of memory and thought, the experimental evidence to support these principles, and the theoretical perspectives used to understand them.		1300 Principles of Psychology 2424 Statistics and Methods II
3333 Simulation of Neural and Cognitive Processes	The interrelations among the study of the mind, the elaboration of brain mechanism, and studies in artificial intelligence. Discussion of modern computers as a model of brain functioning with emphasis on the question of parallel versus serial processing and contemporary approaches to information processing in the		1300 Principles of Psychology 2308 Fundamentals of Cognition

	nervous system. Students will gain experience in modelling these processes on computers.		
4360 Special Topics in Cognitive and Physiological Processes	In depth study of theory and research on a special topic in Cognitive and Physiological Processes. May be repeated on different topics.		

Utah

Nombre de La Universidad: University of Utah

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
3120 Cognitive Psychology	Introduction to an information-processing analysis of cognition. Perception, attention, and memory.	3	1010 General Psychology 3000 Statistical Methods in Psychology 3010 Research Methods in Psychology
3140 Cognitive Neuropsychology	Relationship between brain structures and cognitive function. Analysis of disorders of memory, spatial attention, language, movement, and how they reflect brain processes.	3	1011 General Psychology 3001 Statistical Methods in Psychology 3010 Research Methods in Psychology
3150 Sensation and Perception	Sensory systems and perceptual processes with respect to vision, audition, and other sense modalities. How we see, hear, feel pain and temperature, and in general receive information from the environment; how our	3	1010 General Psychology 3000 Statistical Methods in Psychology 3010 Research Methods in Psychology

	perceptions are affected by expectancy, knowledge, and higher-level organizational factors.		
3190 The Psychology of Language	Perspectives on language from the modern fields of psychology and linguistics; emphasis on shared concerns, such as language acquisition and processing.	3	1011 General Psychology 3001 Statistical Methods in Psychology 3010 Research Methods in Psychology
3712 Neurobiology of Learning and Memory	Theory and research regarding neural plasticity as it relates to various models of learning and memory. Examines neuroanatomical, neurophysiological, and pharmacological evidence from invertebrate and vertebrate species.	3	General Psychology Statistical Methods in Psychology Research Methods in Psychology
4802 Research Experience: Cognitive	Involves participation in ongoing faculty-directed research based on a contract between the student and instructor.	3	
5110 Advanced Comparative Cognition	Laboratory and naturalistic nonhuman animal cognition, with a focus on attention, learning, memory, decision making, and communication, along with comparisons with corresponding human cognitive processes.	4	
5120 Advanced Human	Information processing	4	

Cognition	paradigm applied to areas of psychology, e.g., developmental, social, clinical, and to other disciplines, such as philosophy, education, law.		
5150 Advanced Perception	General theories of perception, their implications, and empirical validation.	3	
5518 The Use of Microcomputers in Psychological Research	Microcomputers have become an essential component of the modern laboratory and knowledge of how to use computers for experimental control and data analysis is now a necessary skill. This course is designed to provide in-depth study of how to design and implement real-time control of typical components of experimental research.	3	

Virginia

Nombre de La Universidad: Washington & Lee University Lexington, VA

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
Psychology 112 - Cognition	An introduction to human information processing, including an examination of perception, attention, memory, problem solving, and language. Fall, Winter		
Psychology 207 - A	Psychology 112 or three credits		Psychology 112 Cognition or

Psychological Approach to Artificial Intelligen	in computer science. An introductory study of cognition by means of an examination of computer models and simulations of knowledge representation, pattern recognition, and problem solving. Not offered in 2004-2005		three credits in computer science.
Psychology 254 - Experimental Psychology: Language and Thought	The empirical and theoretical examination of complex cognitive processes. Topics covered include sentence production and comprehension, language, communication, and problem solving. Not offered in 2004-2005		Psychology 250 Research Design and Analysis
Psychology 351 - Directed Research in Cognition	Permission of the instructor. Directed research on a variety of topics in cognition. May not be repeated. Fall, Winter		
Psychology 352 - Directed Research in Sensation Measurement and Perception	Permission of the instructor. Directed research on a variety of topics in sensation measurement and perception. May not be repeated. Winter		

España

Nombre de La Universidad: Universidad Complutense de Madrid

Ramos Relacionados	Descripción	Carga horaria (creditaje)	Prerrequisitos
Cognición Animal	El estudio de la cognición animal.		

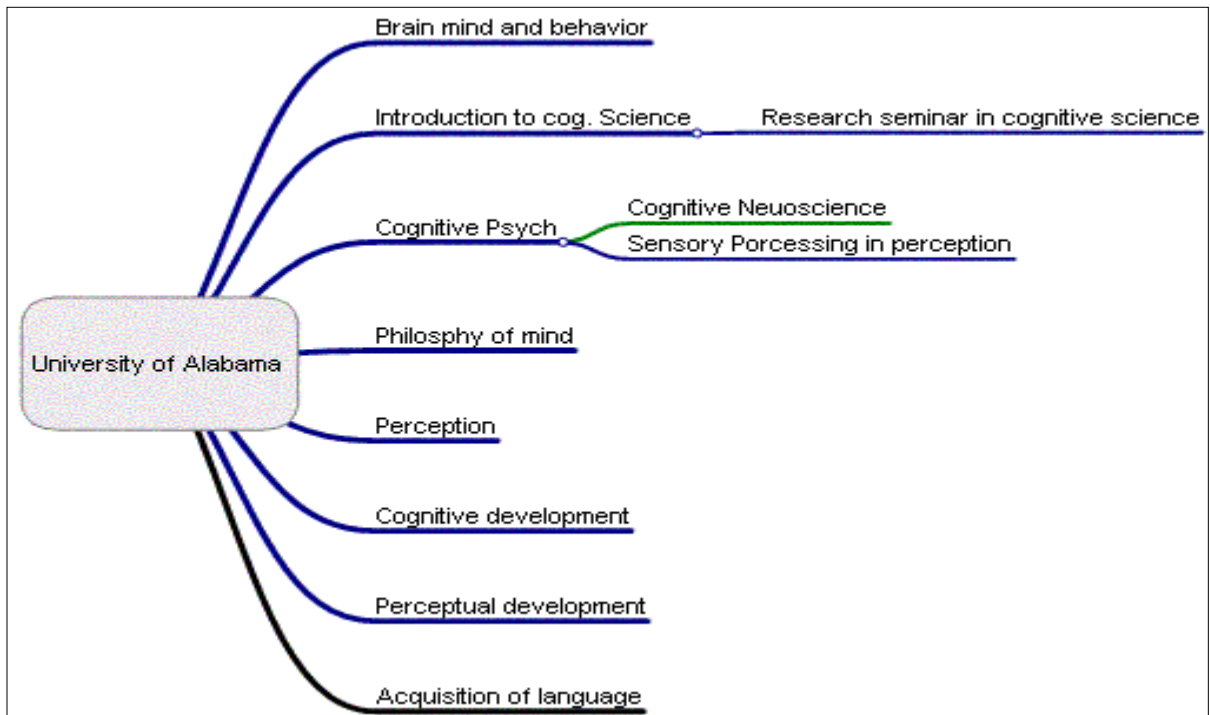
	<p>Aprendizaje e instintos. Memoria. El pensamiento de los animales. Lenguaje y comunicación.</p>		
Modelos Matemáticos en Psicología	<p>Teoría estocástica del aprendizaje. Teoría de muestreo de estímulos. Tiempo de respuesta. Modelos de procesamiento. Herramientas matemáticas para la modelización estocástica. Señales: Teoría espectral. Modelos estocásticos para la demostración del procesamiento cognitivo. Estrategias de reconocimiento. Aproximaciones no paramétricas a la predicción de tiempos de reacción. Actividad y tiempo de procesamiento a partir de subsistemas separados. Estudio comparativo de las propiedades de los sistemas en serie y los sistemas en paralelo y sus modelos. Modelos de audición y visión.</p>		
Neuropsicología Básica	<p>Concepto de Neuropsicología. Organización anatómica y funcional del sistema nervioso. Patología del sistema nervioso. Métodos en Neuropsicología.</p>		

	<p>Estudio funcional del cortex cerebral.</p> <p>Asimetrías cerebrales.</p> <p>Neuropsicología del lenguaje.</p> <p>Neuropsicología de la memoria.</p> <p>Neuropsicología de la atención.</p> <p>Percepción visual, auditiva y somestésica. Las agnosias.</p> <p>Motricidad y apraxia.</p> <p>Neuropsicología involutiva.</p> <p>Rehabilitación Neuropsicológica.</p>		
Sistemas de Aprendizaje y Memoria	<p>La teoría tradicional del aprendizaje.</p> <p>La teoría tradicional de la memoria.</p> <p>La teoría de los niveles de aprendizaje.</p> <p>Sistemas de memoria.</p> <p>Sistemas de memoria y sistemas de aprendizaje.</p> <p>Bases neuropsicológicas de la organización de la memoria.</p> <p>Aprendizaje, memoria y sistemas de redes neuronales.</p>		

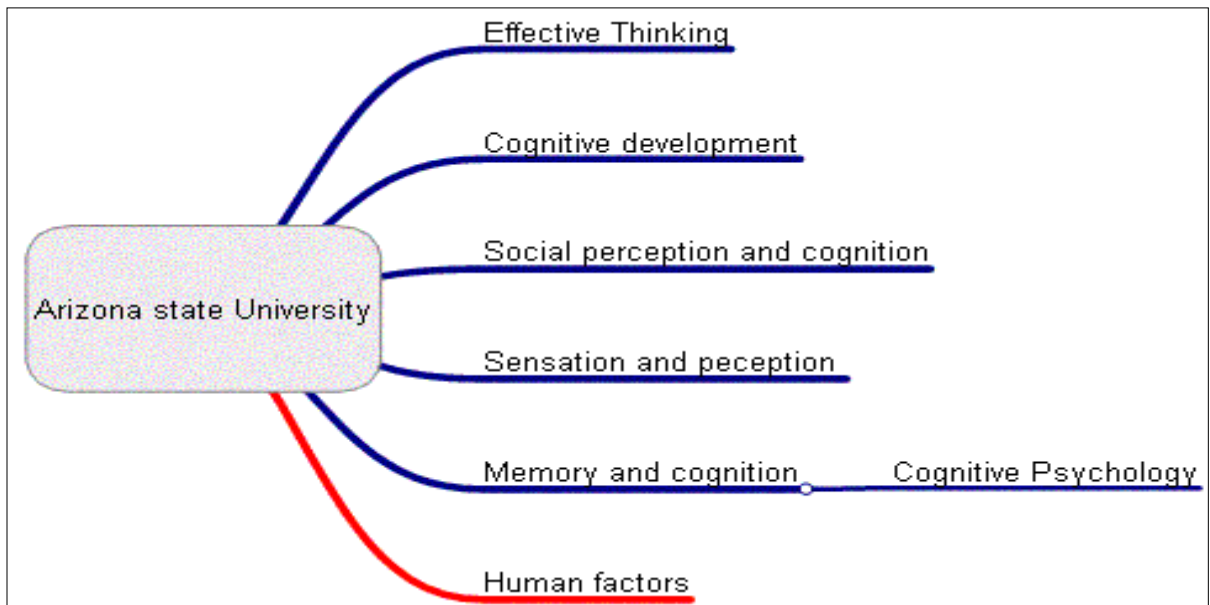
Anexo VII

Esquemas de asignaturas por Universidad

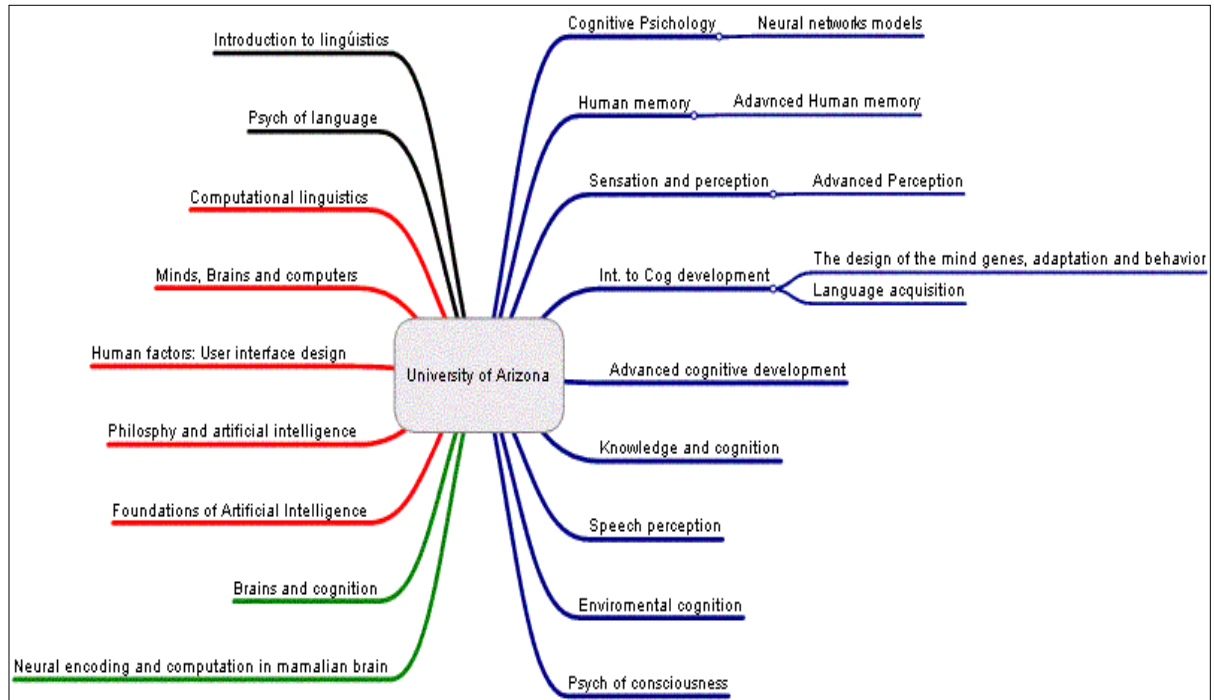
University of Alabama



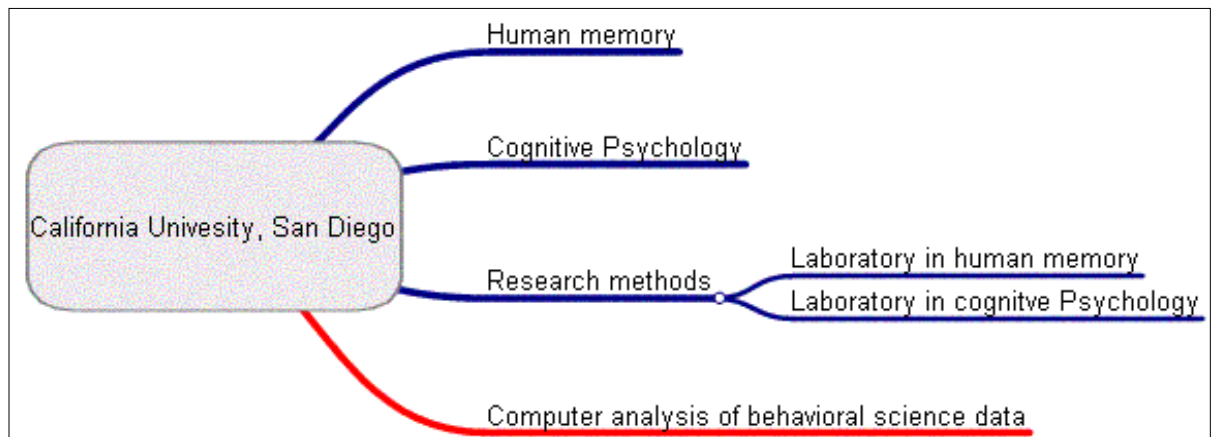
Sate University of Arizona



University of Arizona



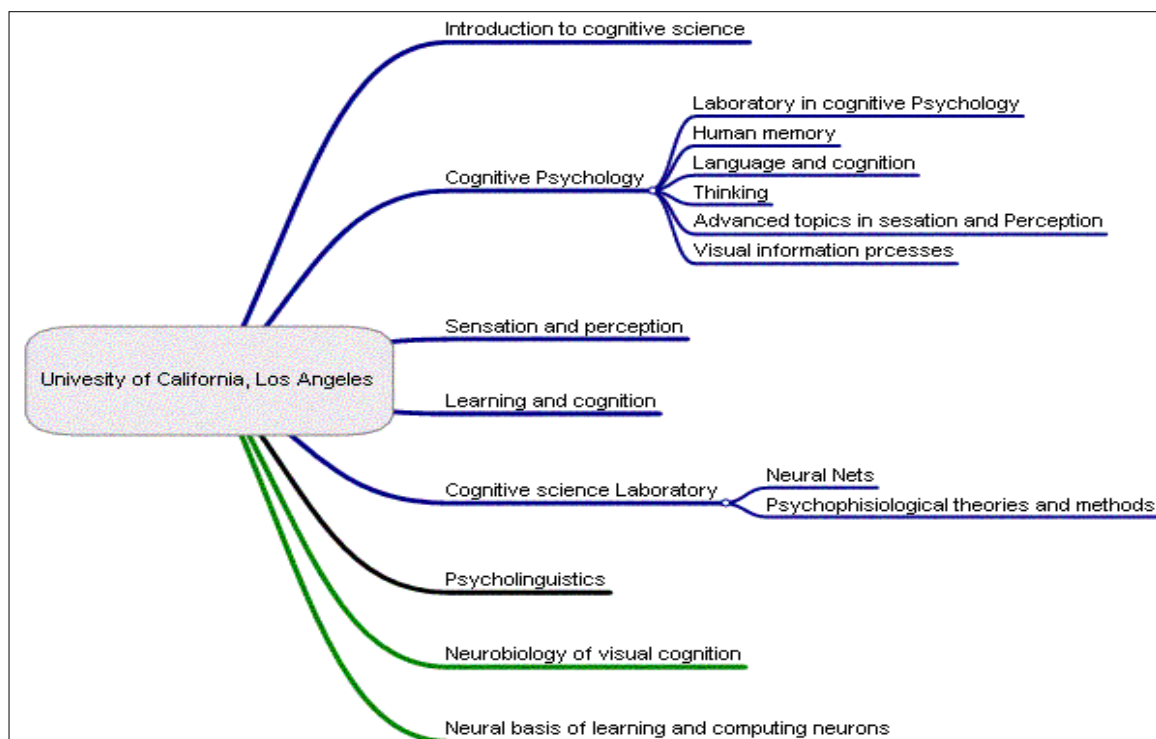
University of California, San Diego



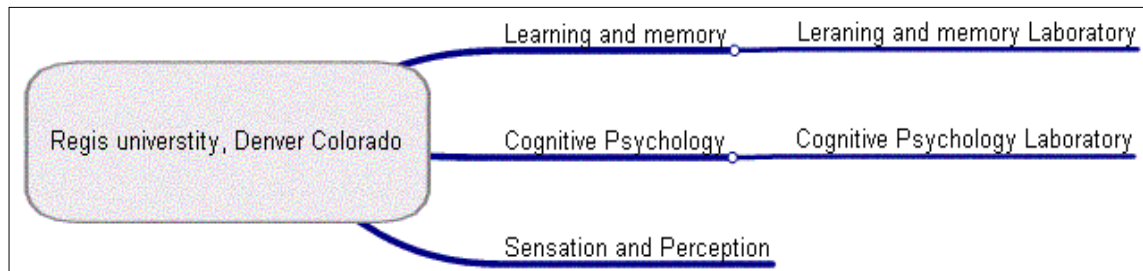
University of California, Santa Barbara



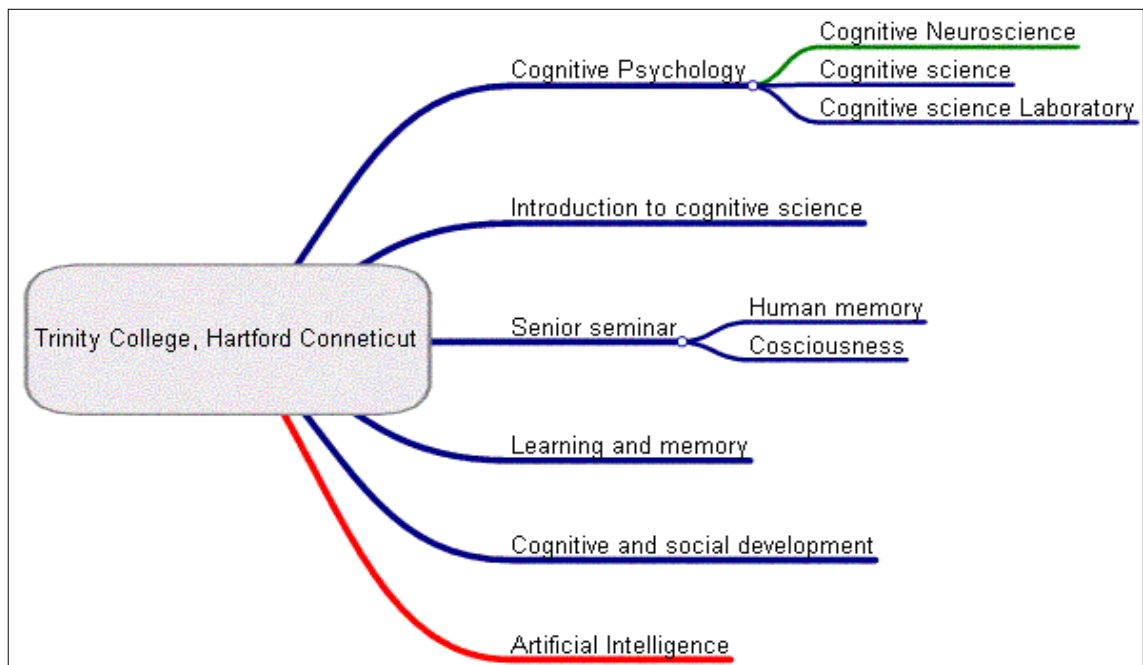
Universidad de California, Los Angeles



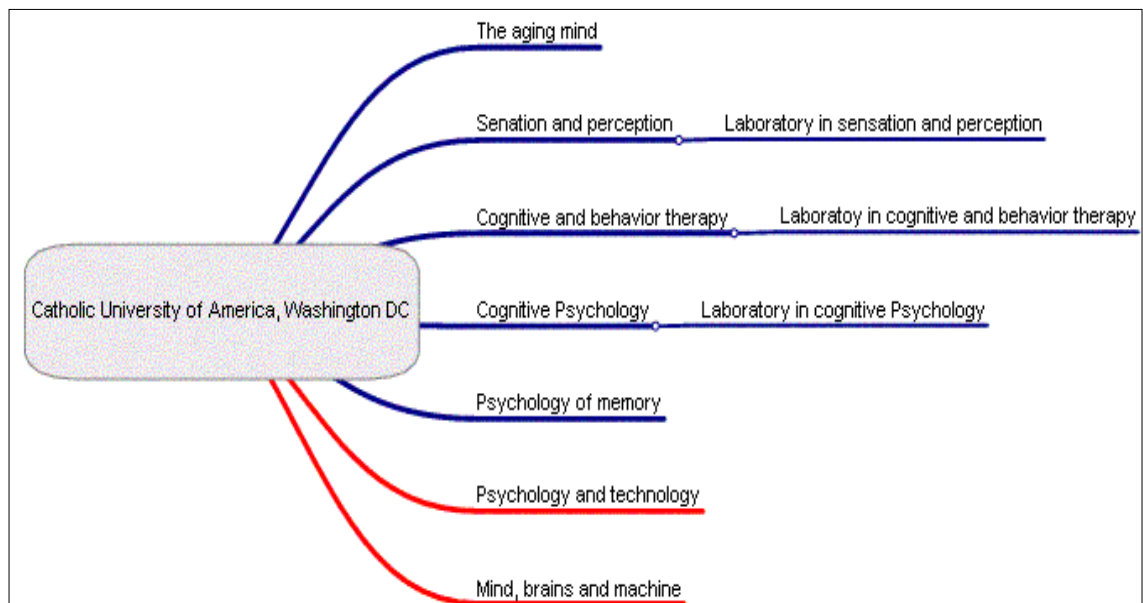
Regis University, Colorado



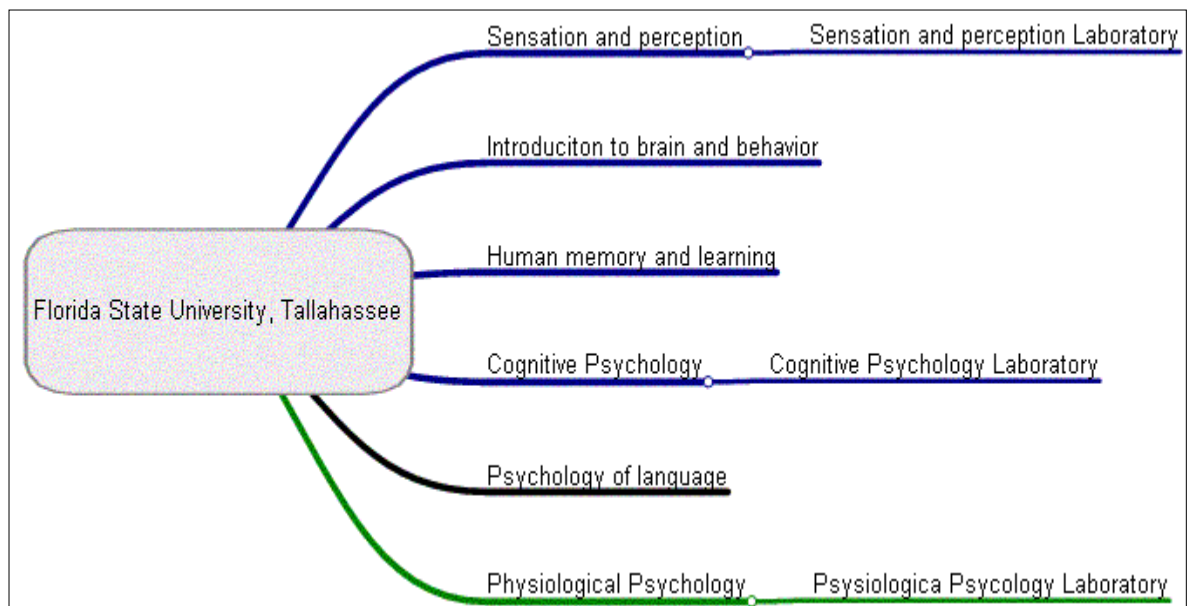
Trinity College, Connecticut



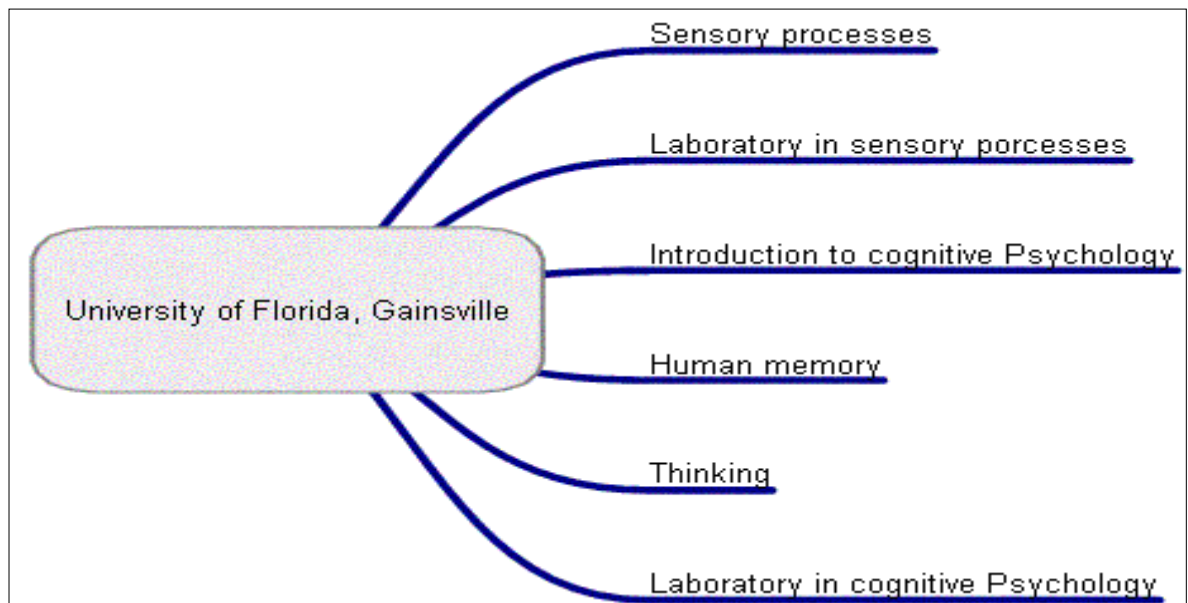
Catholic University of America



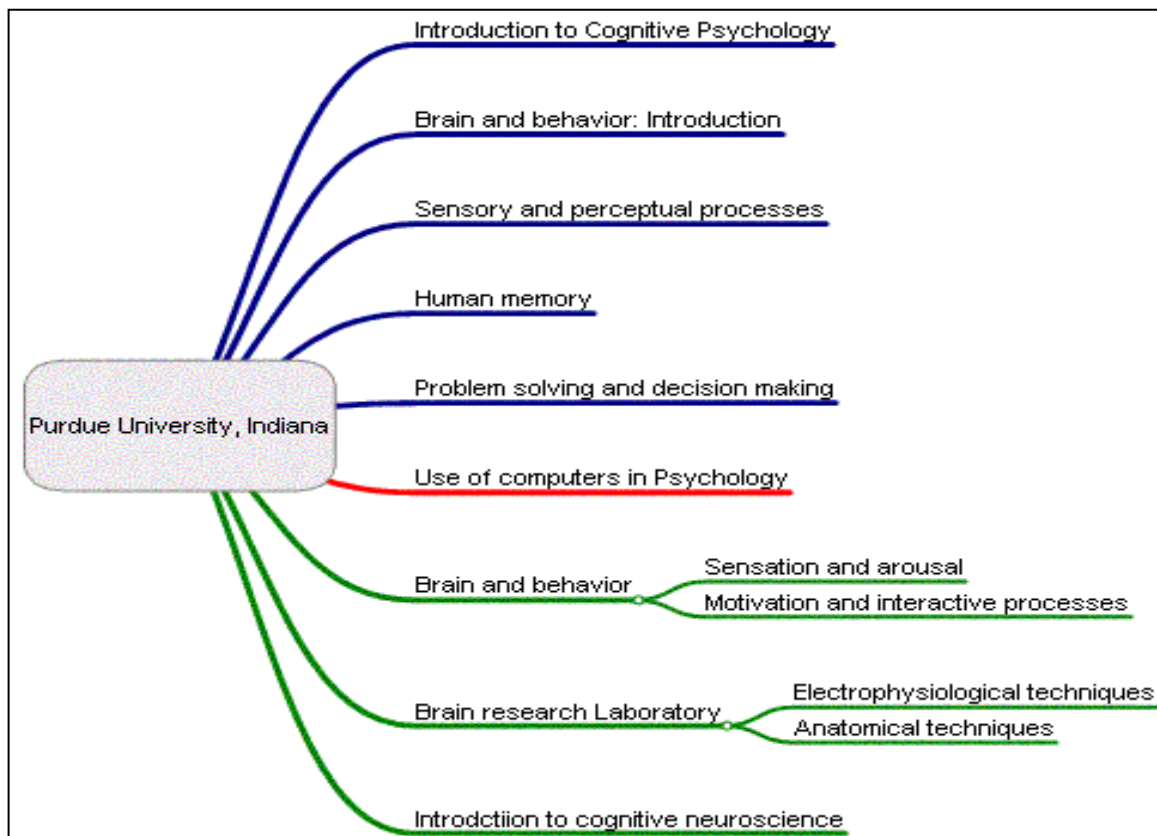
Florida State University



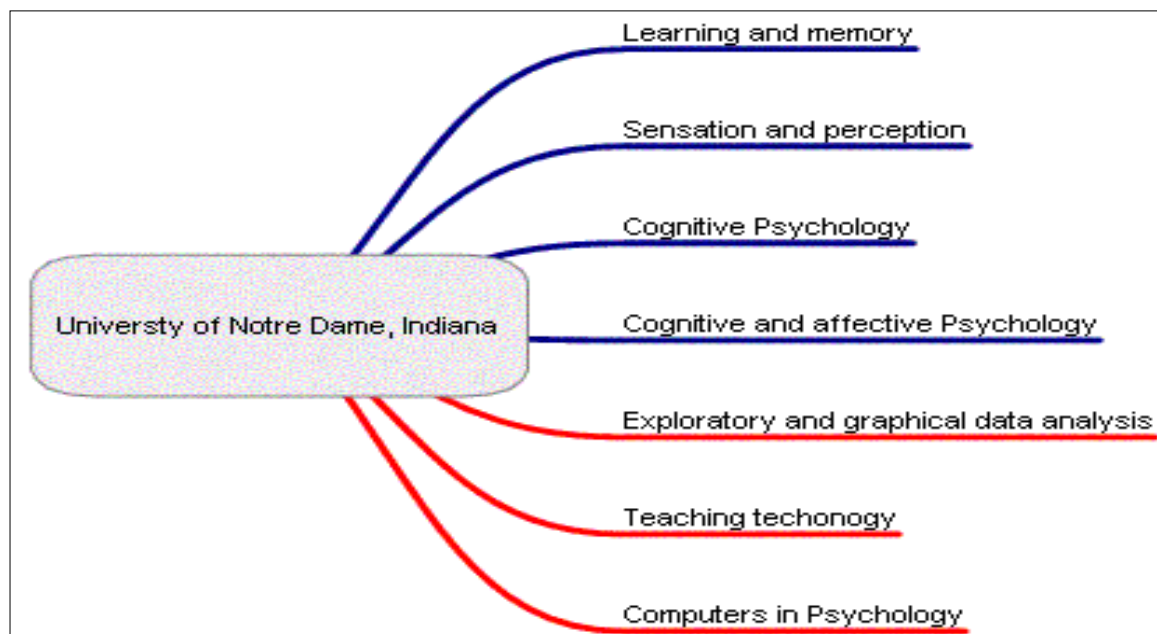
University of Florida



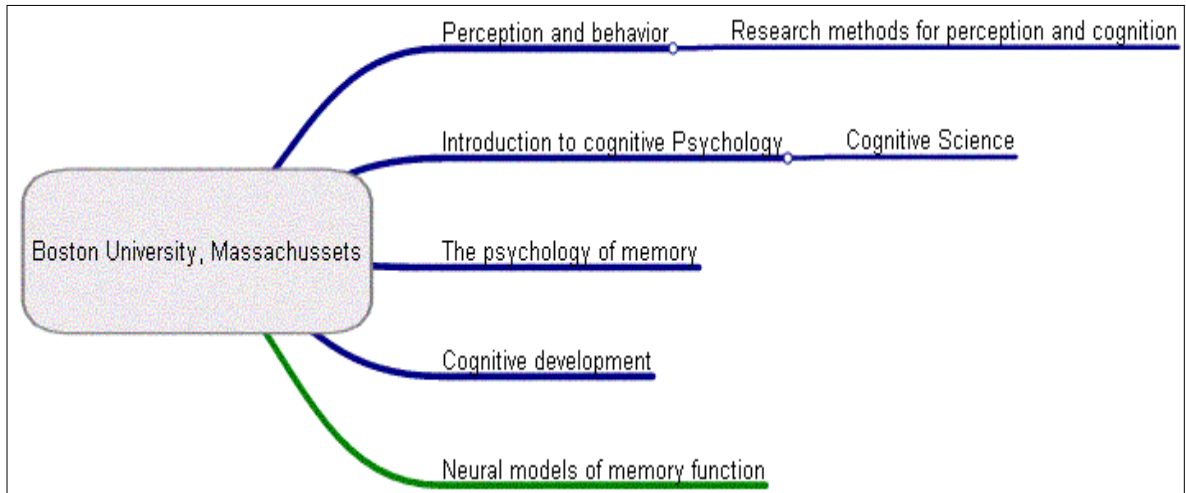
Purdue University, Indiana



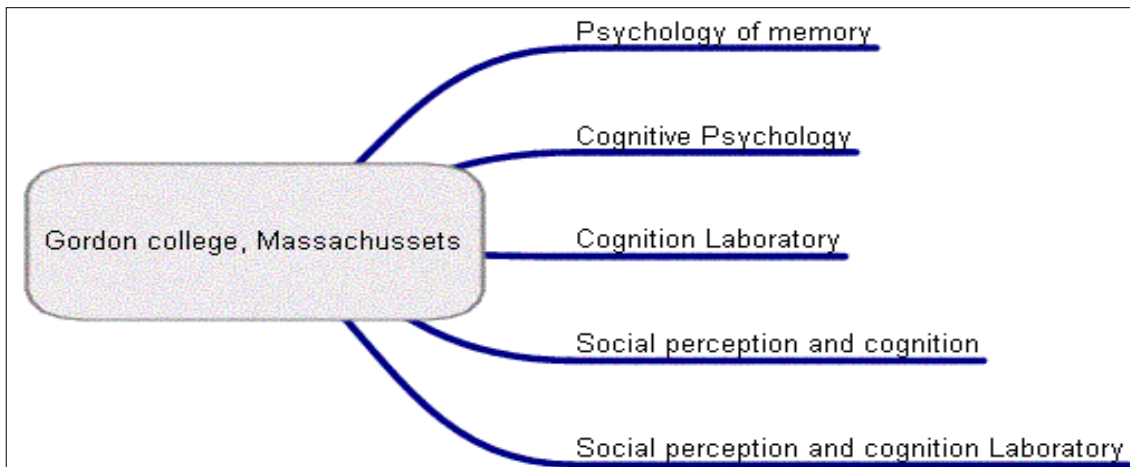
University of Notre Dame, Indiana



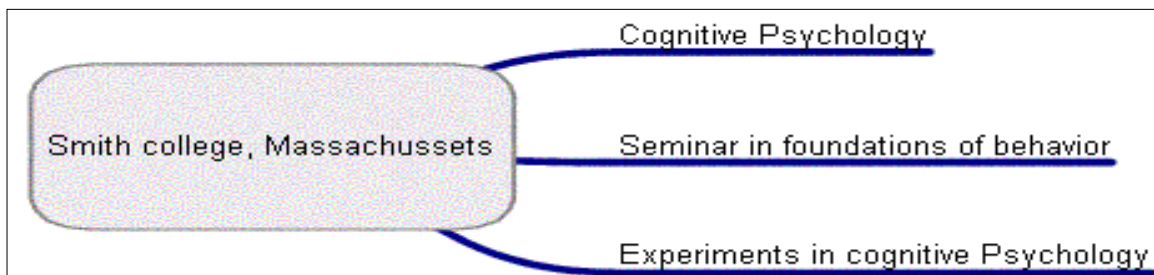
Boston University, Massachussets



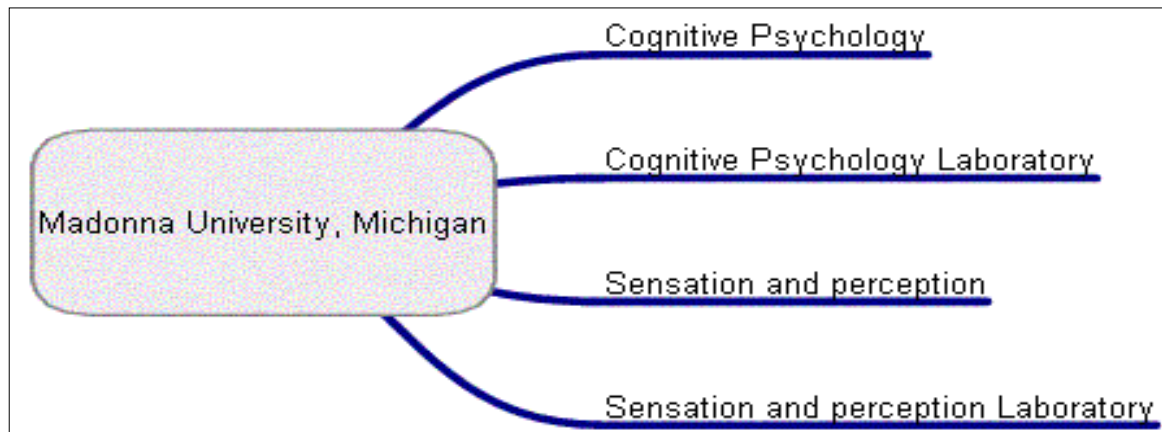
Gordon College, Massachussets



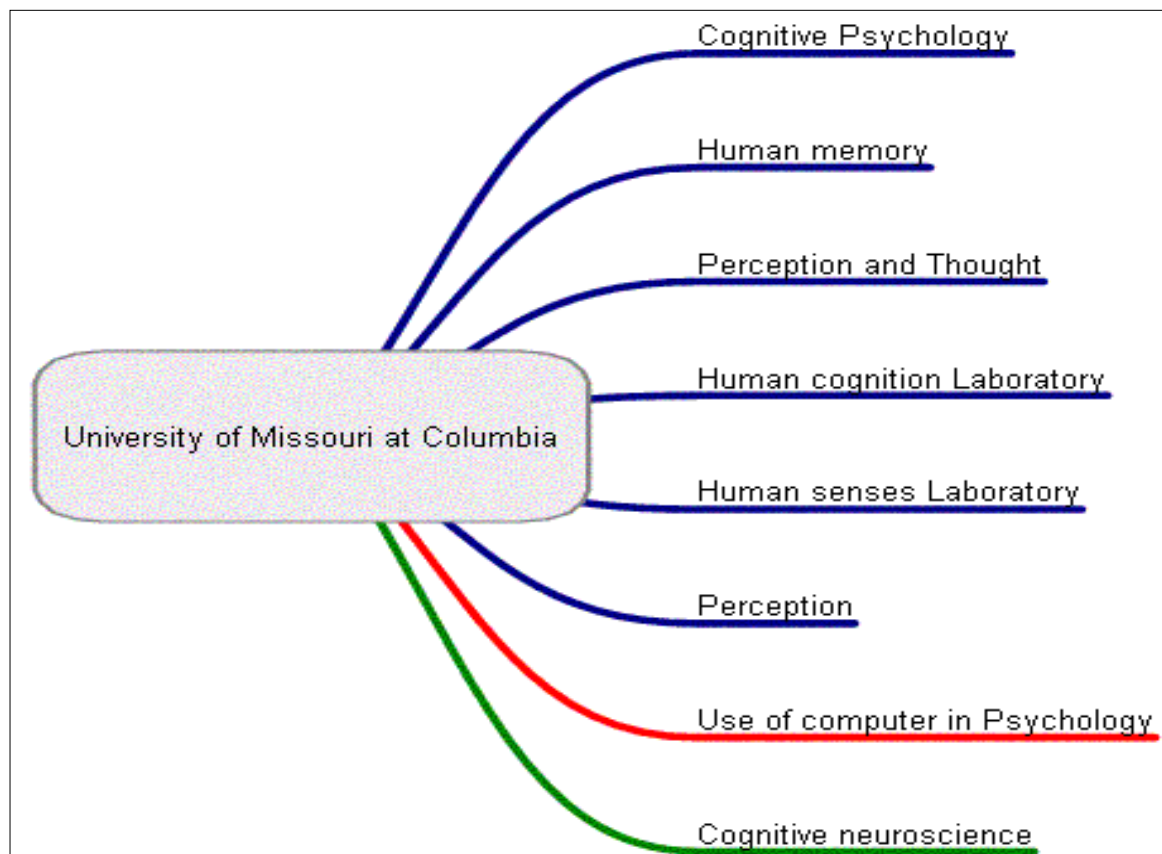
Smith College, Massachussets



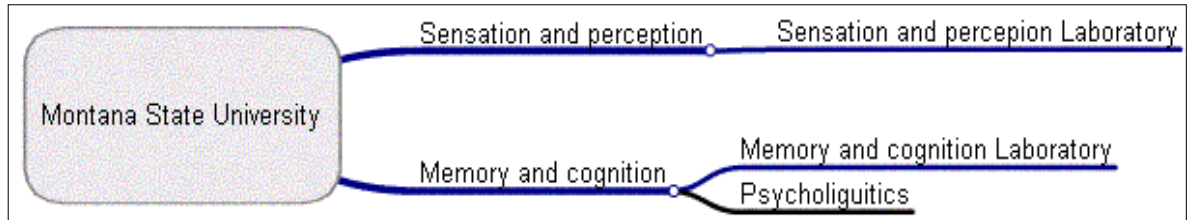
Madonna University, Michigan



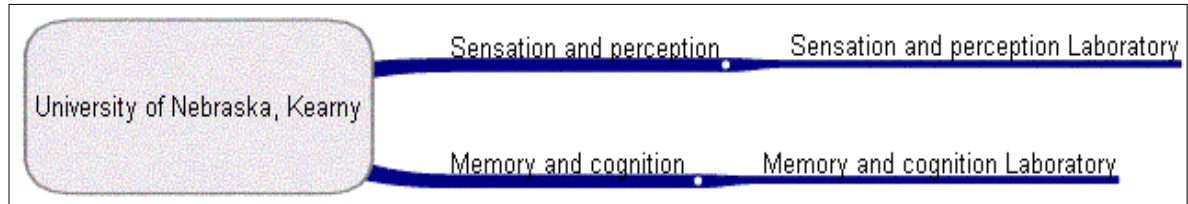
University of Missouri



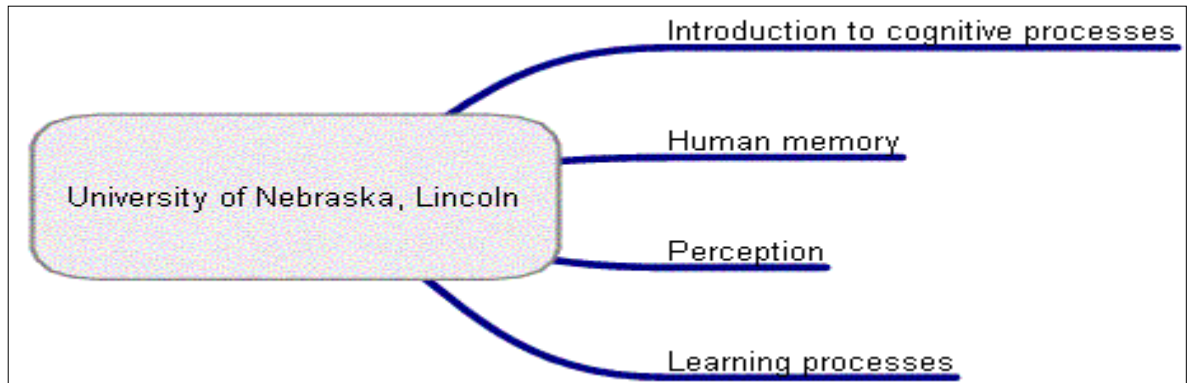
Montana State University



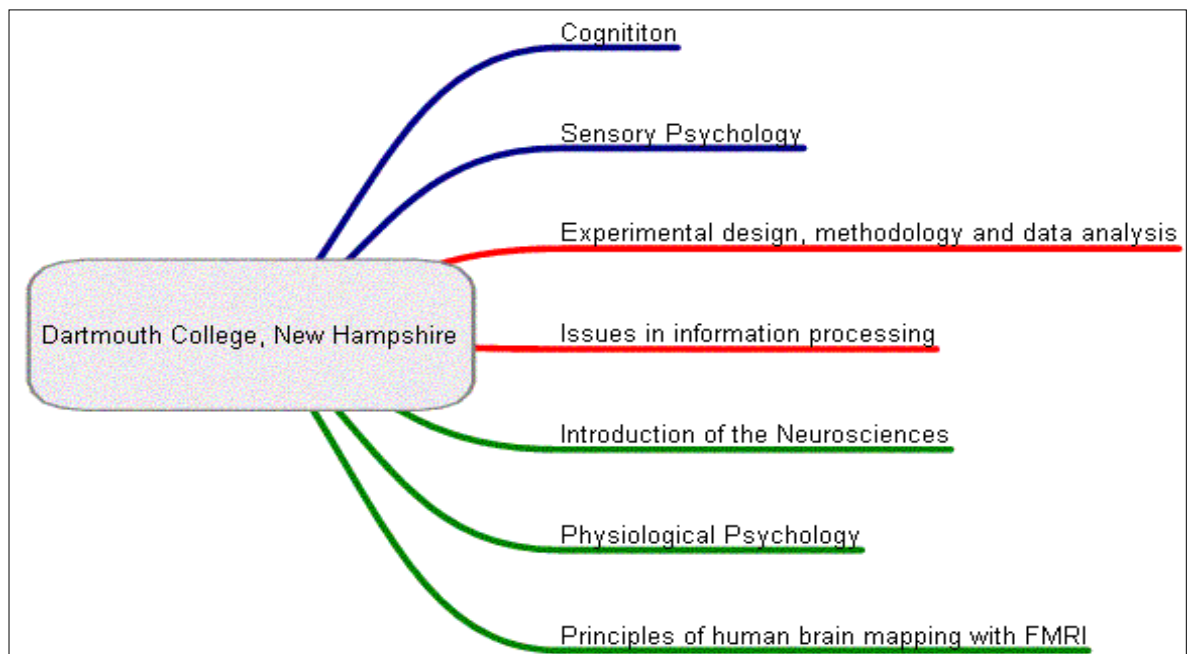
University of Nebraska at Kearny



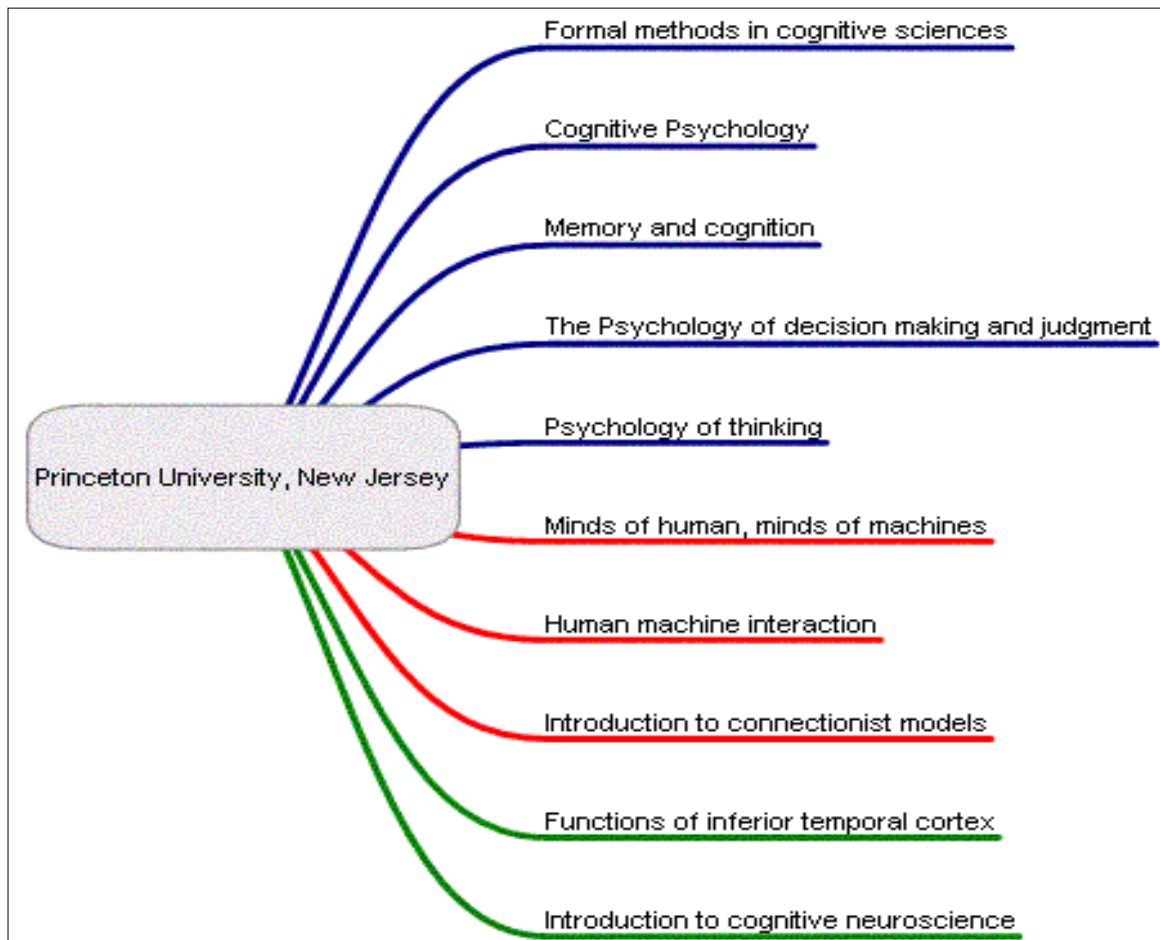
University of Nebraska at Lincoln



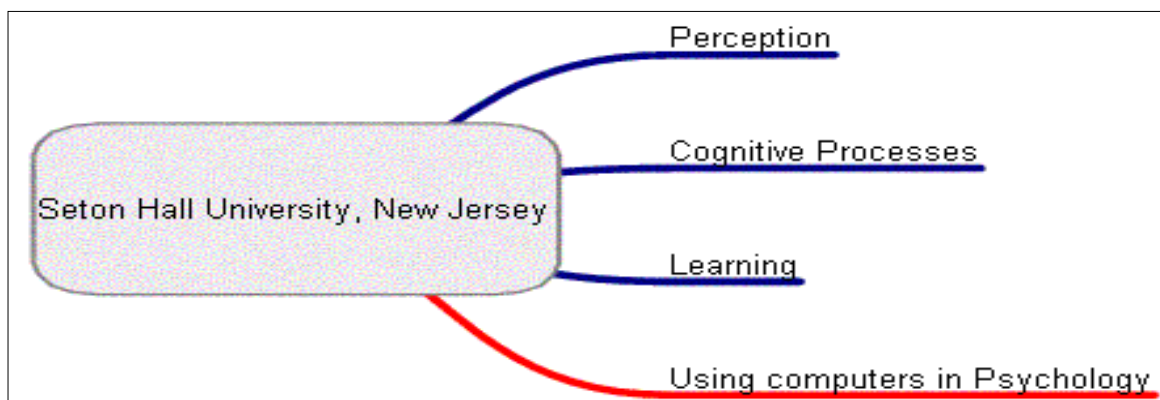
Dartmouth College, New Hampshire



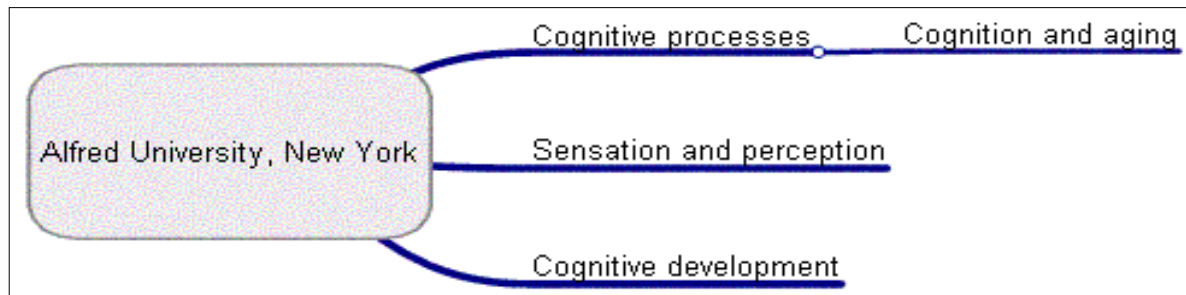
Princeton University, New Jersey



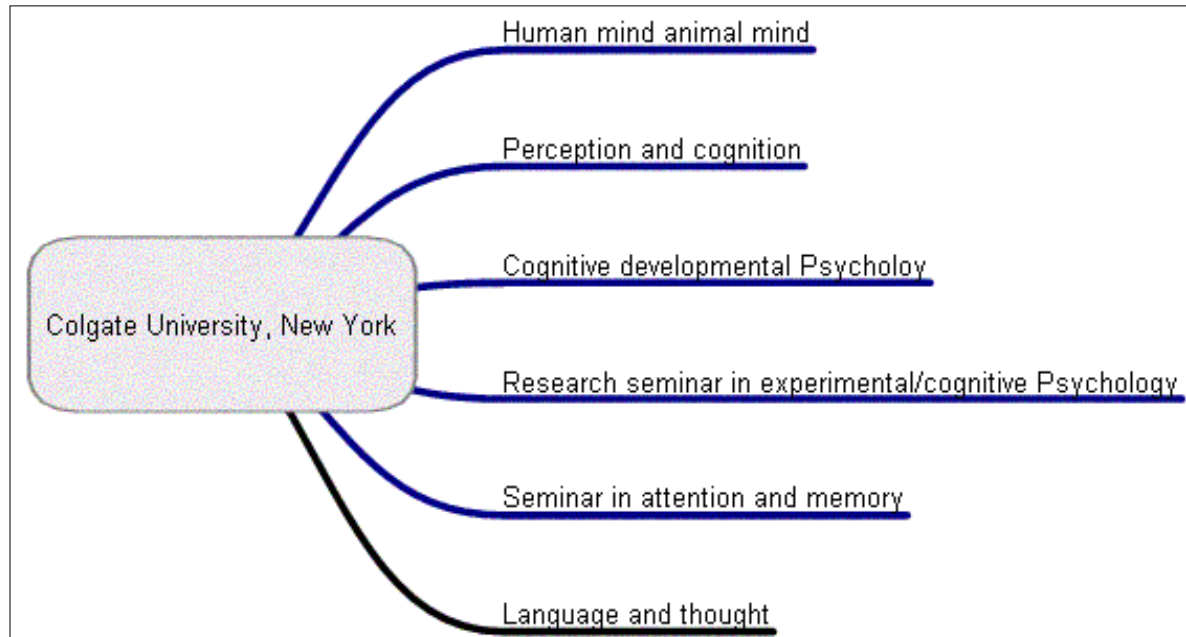
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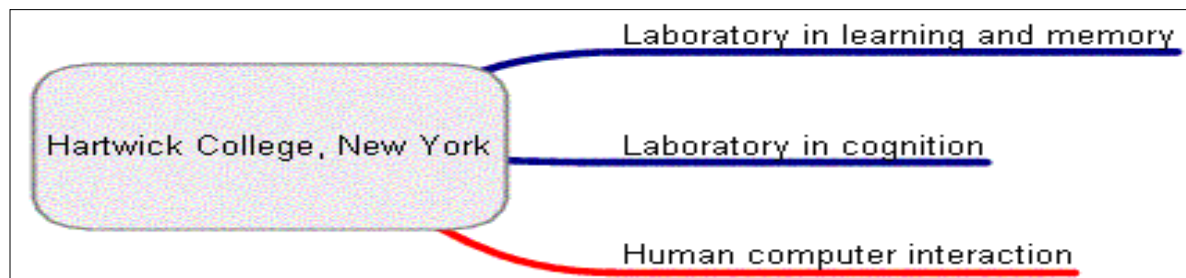
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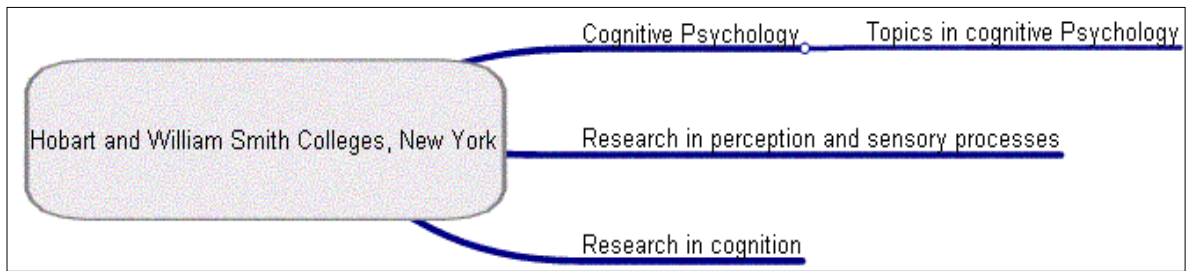
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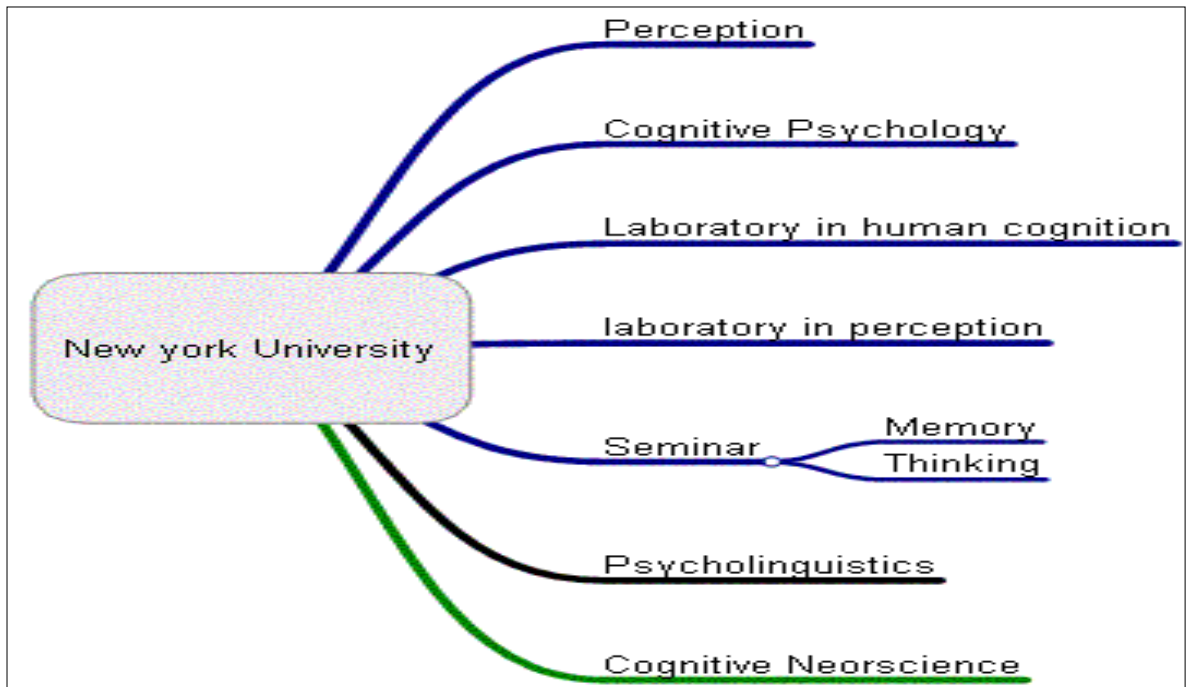
Hartwick College, New York



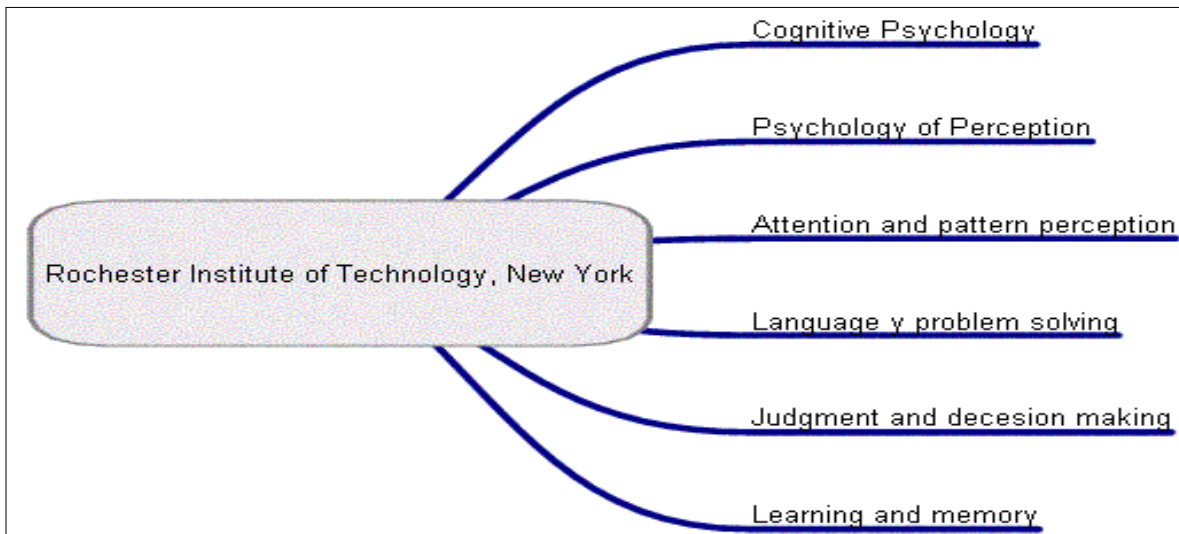
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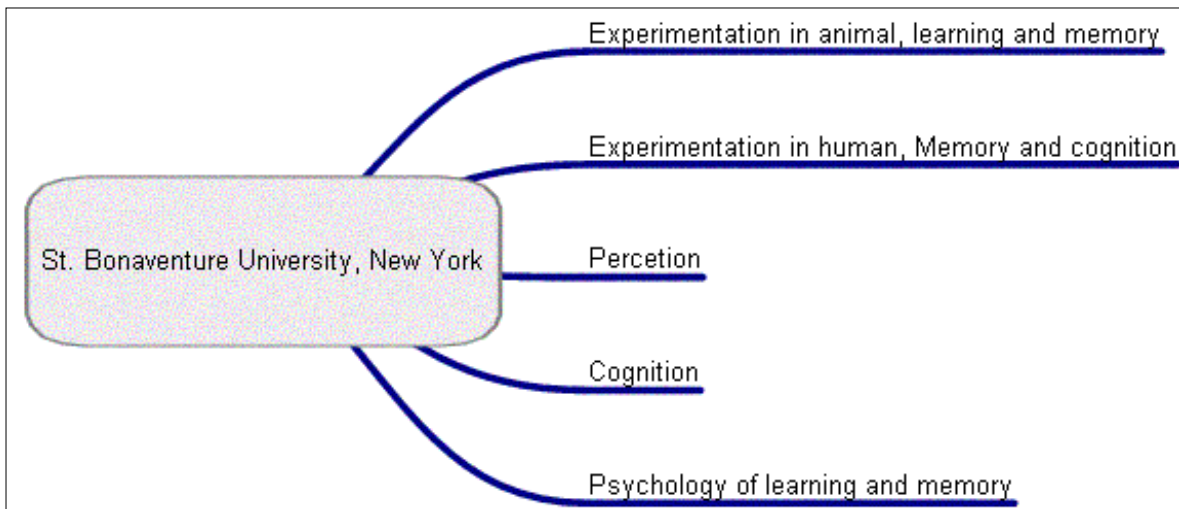
New York University



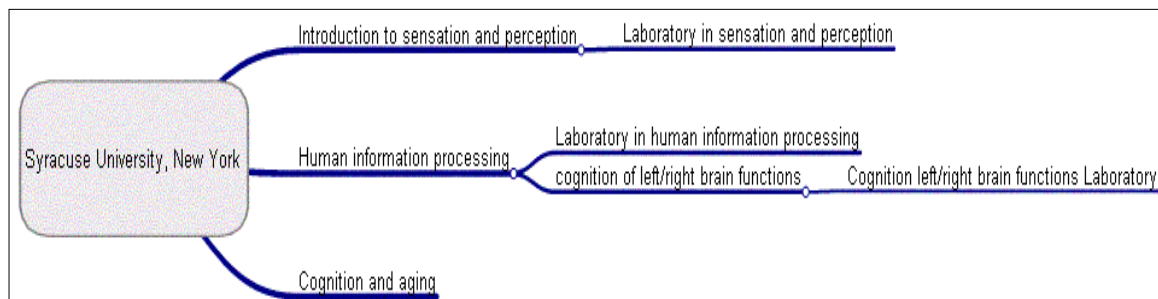
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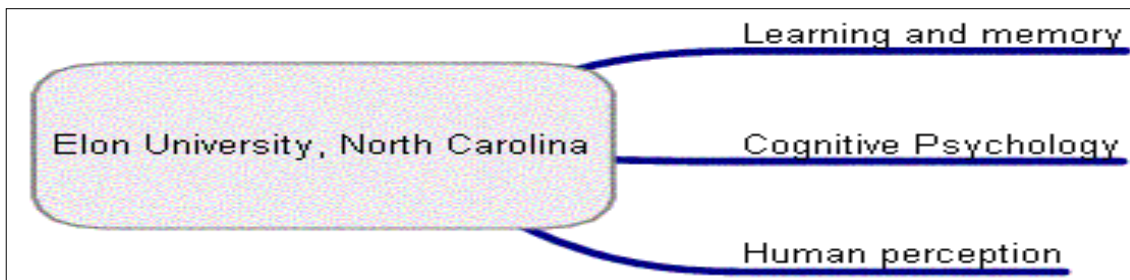
St Bonaventure University, New York



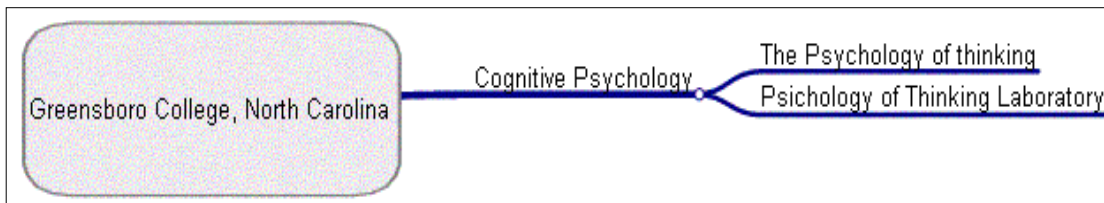
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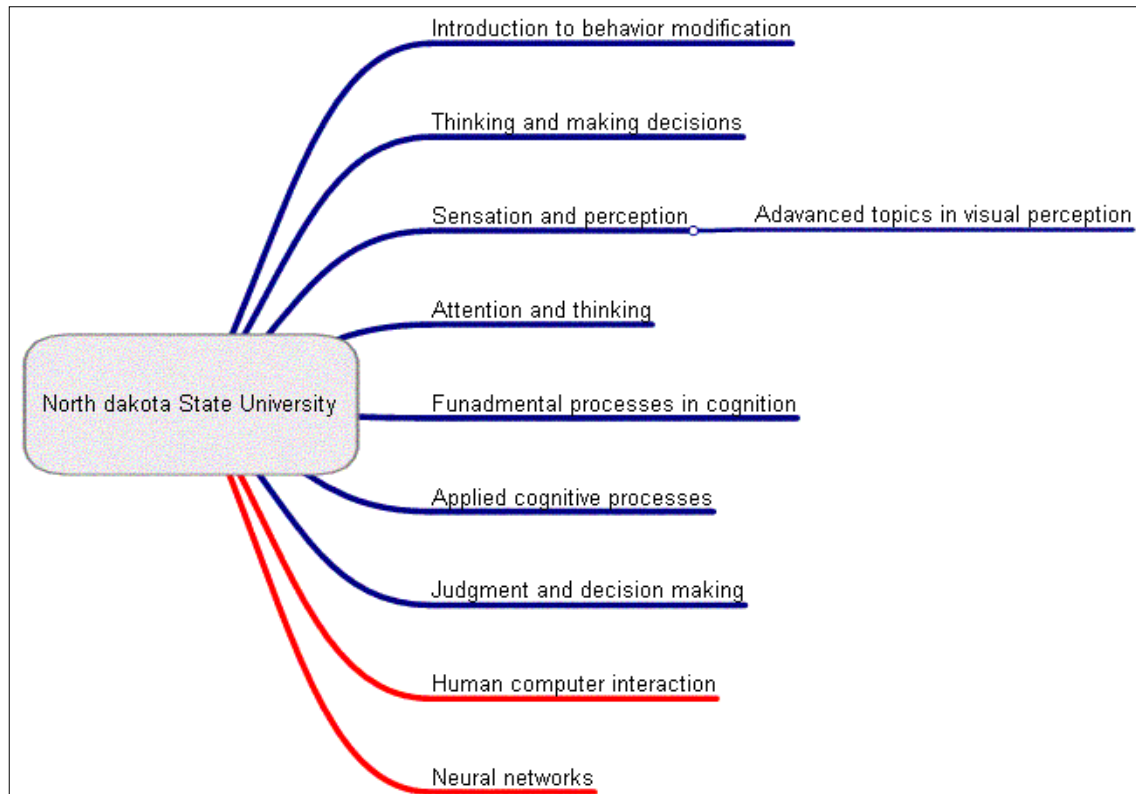
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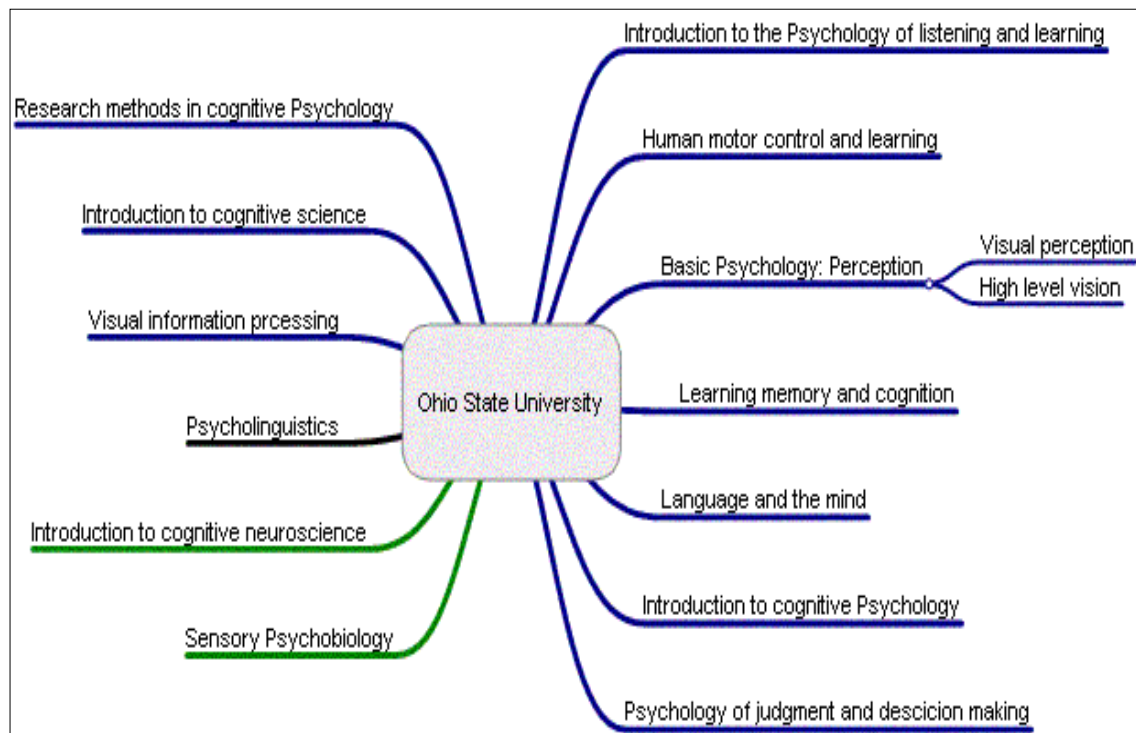
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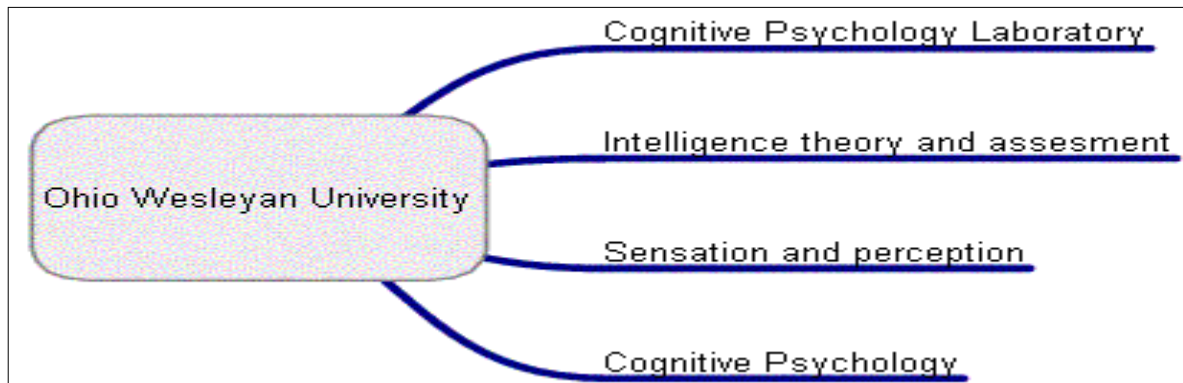
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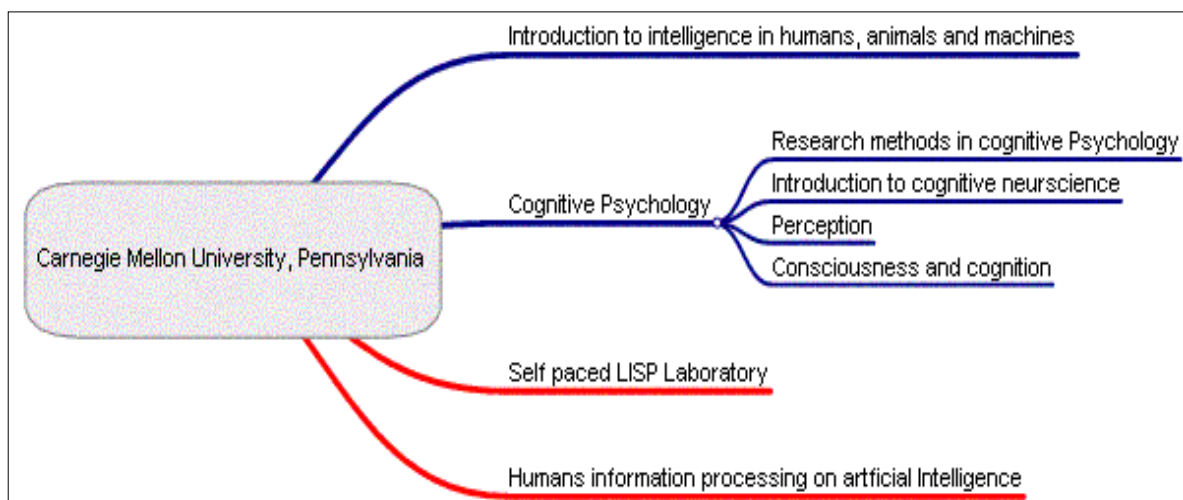
Ohio State University



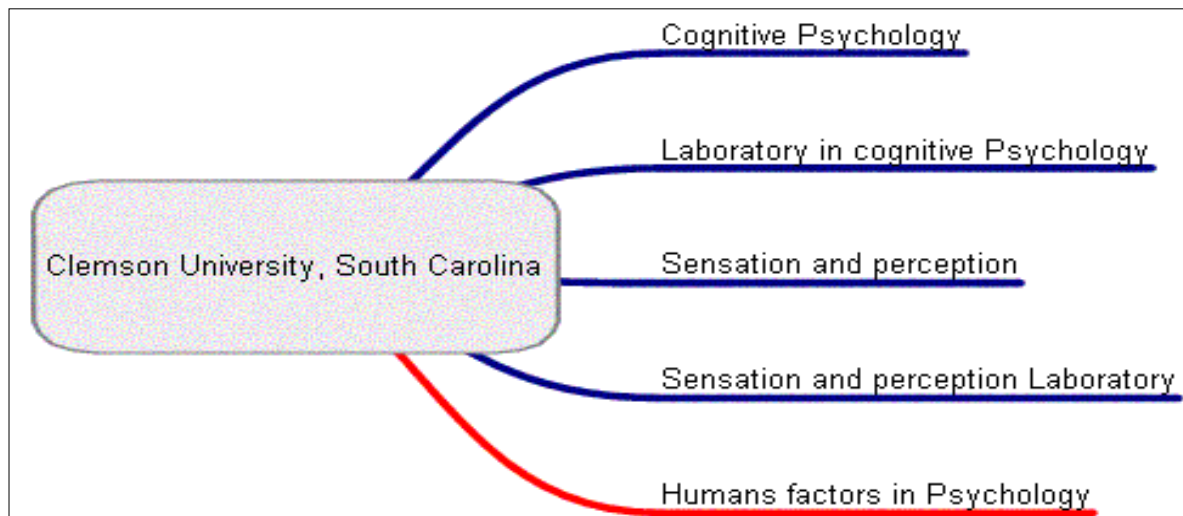
Ohio Wesleyan University



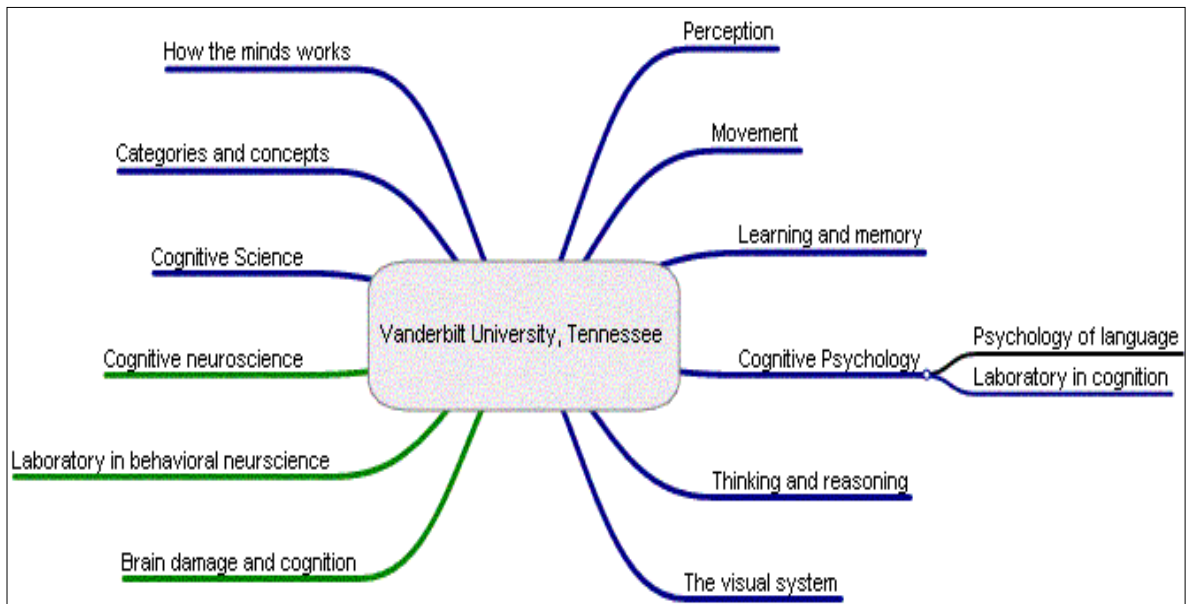
Carnegie Mellon University, Pennsylvania



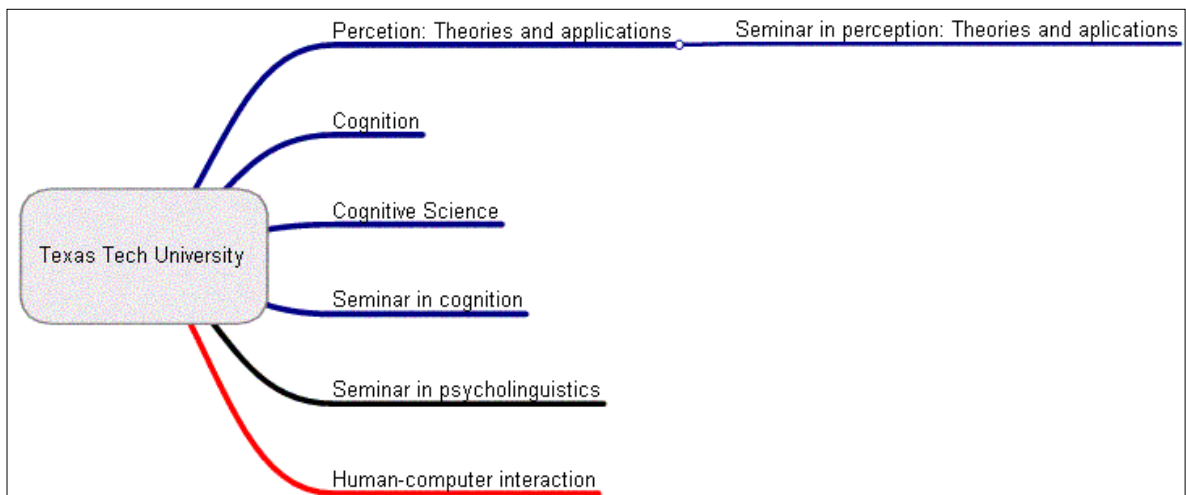
Clemson University, South Carolina



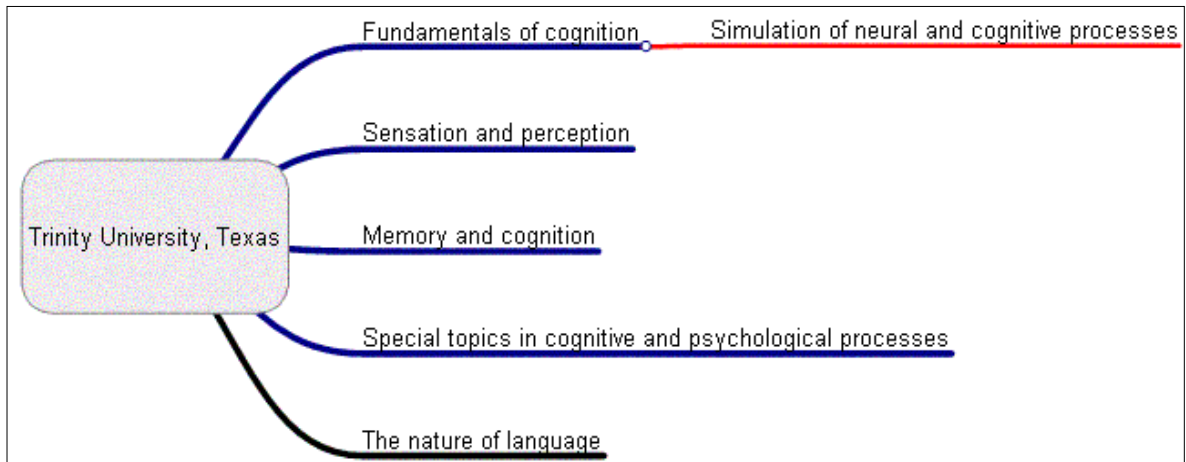
Vanderbilt College, Tennessee



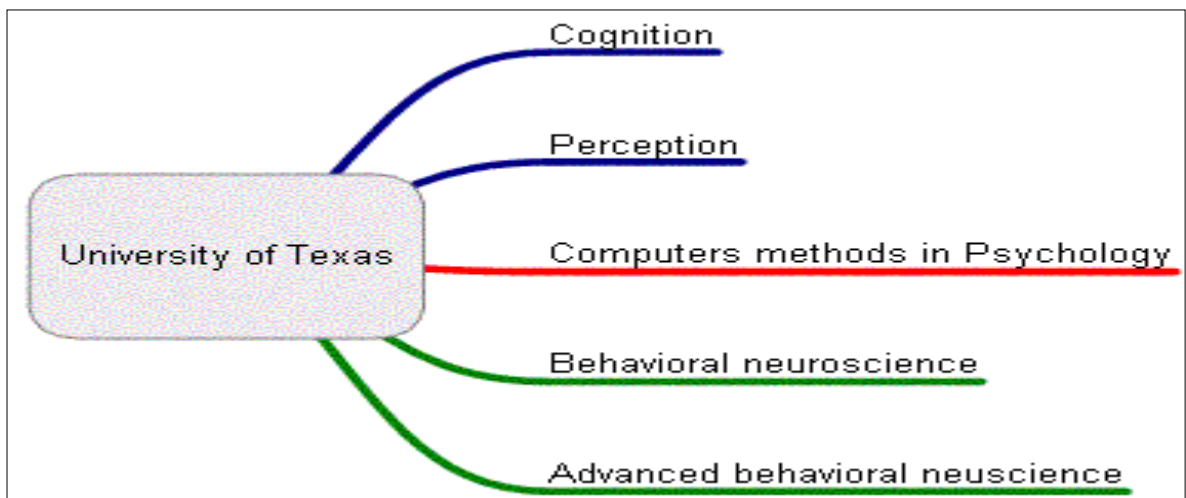
Texas Tech University



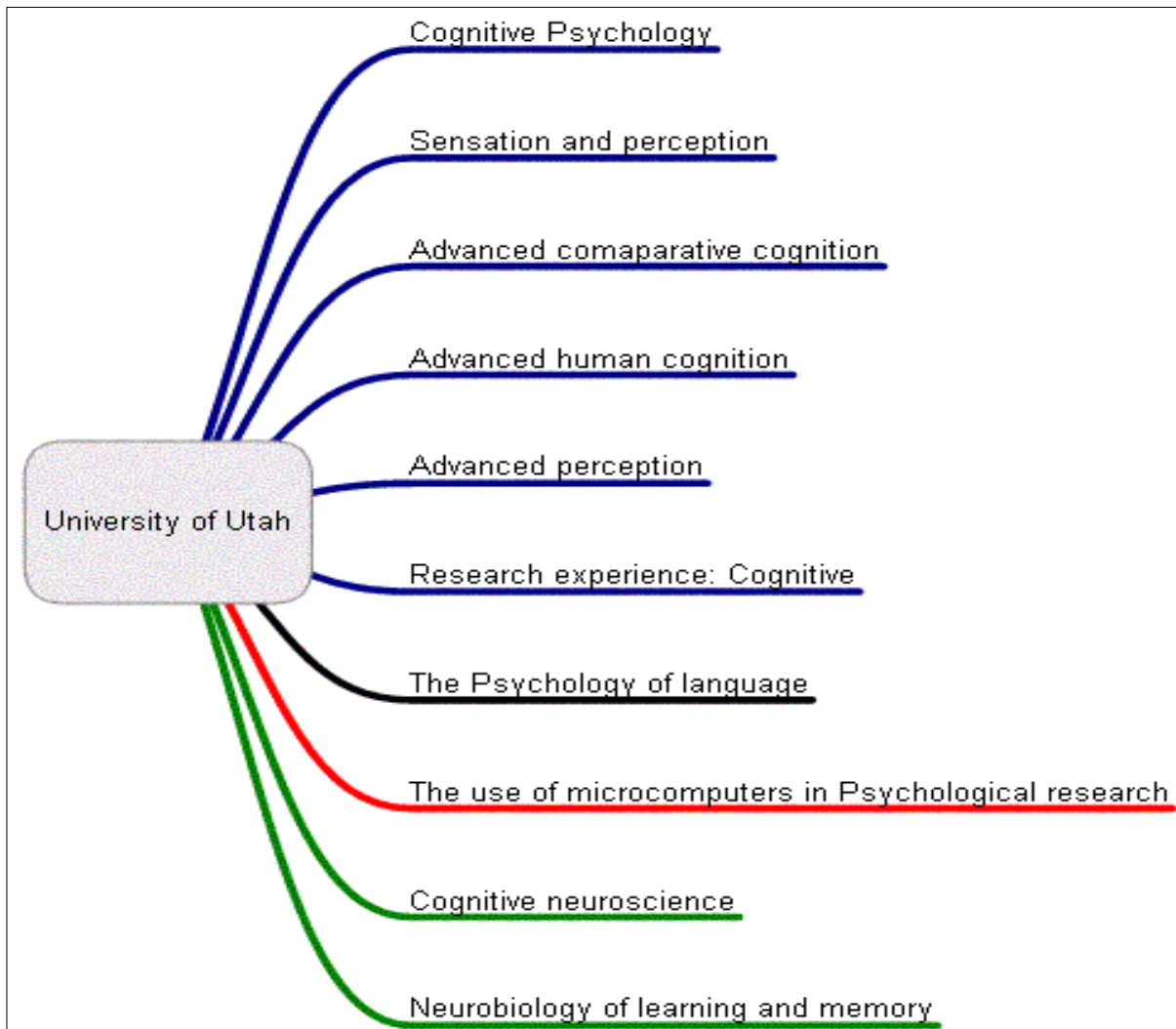
Trinity University, Texas



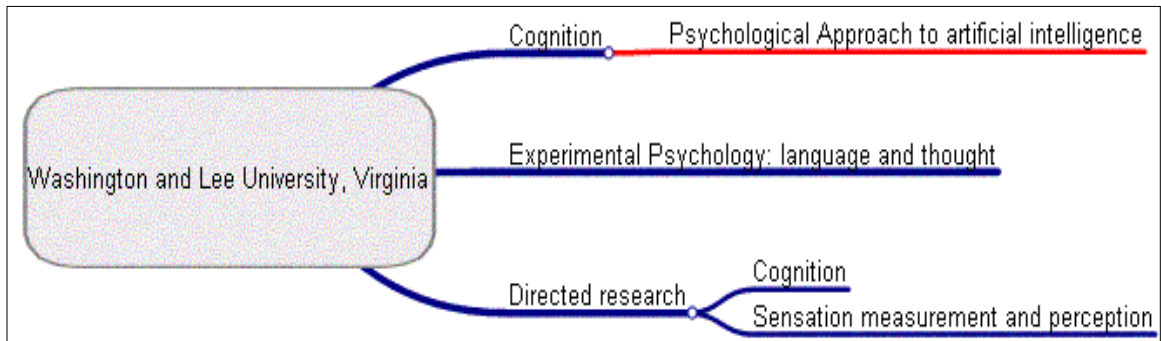
University of Texas



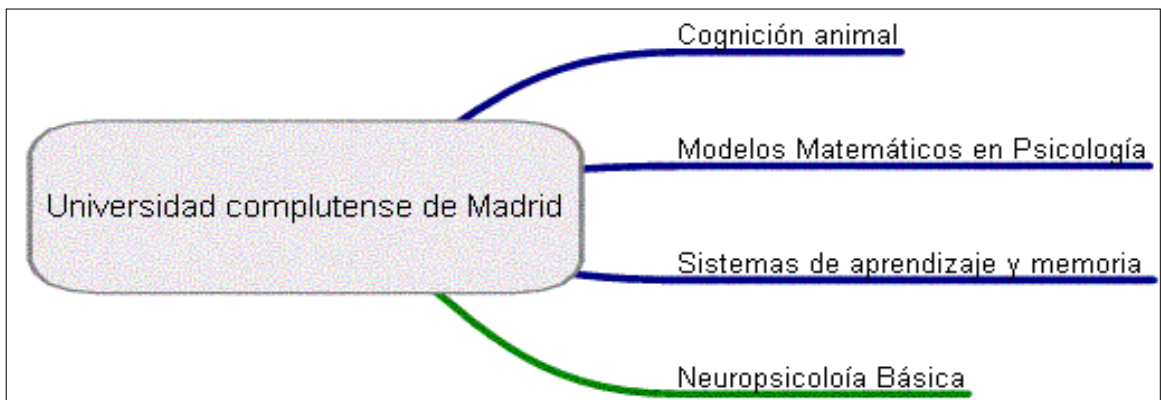
University of Utah



Washington and Lee University, Virginia



Universidad Complutense de Madrid, España



Anexo VIII

Protocolos de recolección de datos sobre Investigación

Alabama

Nombre de La Universidad: University of Alabama at Birmingham (UAB)

Investigaciones relacionadas	Descripción (breve)
Research Practicum in Psychology	<p data-bbox="751 440 1037 467">Dr. Gitendra Uswatte:</p> <p data-bbox="751 505 1703 532">Contact Phone: 975-5089 Contact E-mail: guswatte@uab.edu</p> <p data-bbox="751 570 1906 834">Description: A current area of much interest in adolescent psychology is aggression and its reduction. The approach typically adopted is to teach adolescents skills such as distraction techniques and cognitive reframing that permit them to suppress or transform their anger, as well as to change their social environments to facilitate this process. What this project proposes is to take a different approach to these problems. Rather than teaching adolescents to be less aggressive or angry, this project proposes to help children to be more kind and caring. The aim, in a rough sense, is to "grow" kindness and thereby "crowd out" aggression.</p> <p data-bbox="751 872 1906 1203">These are the overarching or ultimate goals of the project. It is currently in its infancy and the immediate goals are to develop appropriate measurement instruments. The approach planned is to use structured focus groups to develop participant-centered measures of kindness and related constructs. The next step would be to examine the relationship of kindness to other benevolent behaviors and to aggressive behaviors. (A significant literature exists on prosocial behaviors in children from infancy through age twelve. However, a much smaller amount of research on caring and kindness has been conducted with children of middle school age.) The last step would be to develop interventions, based on the studies proposed, delivered in school-settings, that would cultivate kindness in adolescents.</p> <p data-bbox="751 1240 1906 1365">As noted, during the first phase, we would like to conduct structured focus groups with 6th, 7th, and 8th graders in the Hoover school board. We anticipate conducting 12-16 focus groups at each grade level. Each focus group would contain 6-10 children and run approximately 40 minutes. The basic format would be posing a single question to the</p>

	<p>students, permitting them to write down answers to the question privately, soliciting and writing down unique answers on a flip chart or blackboard, and asking students to rank the unique answers according to various dimensions. The questions posed, for example, would be "What does being kind mean to you?" and "What sorts of things make it easy for a teenager to be kind?" We expect that the best time to conduct the groups would be during regular school hours. In addition, we would like to conduct 2 focus groups per grade level with teachers and parents.</p>
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Arizona

Nombre de La Universidad: Arizona, University of Tucson, AZ

Investigaciones relacionadas	Descripción (breve)
<p>Research Labs Amnesia & Cognition 621-5721 Center for Consciousness Studies 621-9317 Child Cognition Lab 626-0278 Cognition & Conversation Lab 626-3569 Cognition & Neuroimaging Lab 621-8792 Neural Decision Science Laboratory Neural Systems, Memory & Aging Lab 626-2616 Neurophysiology of Learning and Memory 626-2374 Neuropsychology, Emotion, and Memory Lab 621-4003 or 621-9255 Perceptual Learning Lab 621-1457 Psycholinguistics Lab 621-8806 Psycholinguistics West 626-8187 or 626-8184 Visual Perception Lab 621-5365</p>	

Nombre de La Universidad : Arizona State University Tempe, AZ

Investigaciones relacionadas	Descripción (breve)
<p>DPAC is a multidisciplinary research team whose focus is the application of nonlinear dynamics, complex systems, and ecological psychology to the fields of perception, action, and cognition. Activities include: faculty and student lectures on theory and research; research collaboration and grant proposal evaluation; the development of a multidisciplinary dynamics curriculum; group mentoring of students; and student-run tutorials on computer programming, methodology, and equipment.</p>	<p>DPAC provides a peer atmosphere for scientists who are based in different departments at Arizona State University and hosts external visitors to foster ties with the greater scientific community. Though comprised primarily of professors and students in the areas of psychology, exercise science and mathematics, DPAC is open to interested individuals from all fields.</p>
<p>Perception Lab Dr. Eric Amazeen Flavio DaSilva</p>	<p>Dynamics is the study of generic patterns of change in natural systems. Perception The ecological and dynamical approaches to perception and action are being explored in this lab. This research program involves the investigation of situations in which perception and action occur together. Specific examples include the perception of weight by touch, the dissociation between vision for perception and vision for action, the role of visual attention in coordination dynamics, and the visual control of catching.</p>
<p>Dynamics of Motor Coordination Lab Motor Development and Learning Lab Dr. Nia Amazeen Dr. Shannon Robertson Dr. Eric Amazeen Genna Mulvey Dawn Lantero Michelle Jung</p>	<p>Action is the change in behavior over time. This makes it very suitable to study using the tools of nonlinear dynamics. We study coordination: in able-bodied and special populations; within the motor subsystem and across physiological subsystems of the body; as it is constrained by psychological factors, properties of the limbs, and external task requirements; and as it changes during development and learning.</p>
<p>Cognitive Performance Lab</p>	<p>Cognitive performance, like all behavior, can be studied and understood from the</p>

<p>Cognitive Development Lab Dr. Guy Van Orden Dr. Clark Presson Dr. Cindy Greenwood Inhyun Choi Jordan Vosmik Mike Howley Felicia Morgan Ajith Rao</p>	<p>perspectives of complexity theory and nonlinear dynamics. From these perspectives, performance emerges to satisfy constraints inherent in a person's history and current context.</p>
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California

Nombre de La Universidad: UC Irvine

Investigaciones relacionadas	Descripción (breve)
Attention	Research in attention deals with quantifying the selective processing of perceptions and actions. For instance, visual attention research emphasizes the study of selective processing of spatial locations, objects, stimulus attributes, and the relation of attention to visual motion perception. Similar issues are studied in auditory recognition, where attention may focus on different auditory cues. Current faculty research programs investigate: which kinds of features are available preattentively; the neural mechanisms of attentional modulation of perception and action using human brain imaging; quantitative models of how attention is focused, distributed, and switched among sensory stimuli; how well different forms of attention can be entrained and how long attention can be maintained.
Memory	The ability to learn and remember are fundamental cognitive capacities. Current faculty research programs in memory investigate: the mechanisms of forgetting in different memory domains; metamemory, including the feeling of knowing and judgements of familiarity; assessment of deficits in Alzheimer's disease and aphasia; speed and accuracy of retrieval and its relation to encoding; quantitative models of memory including models of storage and retrieval, of priming, of source discrimination, and of the form of forgetting; the relation of short-term memory function to reading; very short-term visual memory; neural mechanisms of short- and long-term memory using human brain imaging.
Information Processing	Information processing analyses of the performance of cognitive tasks trace the sequence of mental operations and their products (information). Current faculty research programs in information processing investigate: the ways that speed is traded for accuracy in both retrieval from memory and in the production of aimed movements; quantitative models that characterize how distributions of response times are related to characteristics of component processes; new measures of the sensitivity and bias of decisions; variability in cognitive parameters.
Learning and Skill Acquisition	Research on learning and skill acquisition brings together many elements of memory, attention, and information processing. Current faculty research programs in learning and

	skill acquisition investigate: the development of reading ability; motor learning and generalization in normal subjects and clinical populations; mathematical models of classical learning theory such as Markov processes; the mapping of knowledge spaces to provide a principled basis for computer aided instruction.
Language	Current faculty research programs in language investigate: the development of language abilities; real-time processing of linguistic stimuli; the structure of the breakdown of linguistic capacities following brain damage; learning of concepts in language; the relationship between language perception and production; the interaction between linguistic capacities and aspects of memory.

Nombre de La Universidad: UCLA

Investigaciones relacionadas	Descripción (breve)
Cognitive Science Research	The UCLA Cognitive Science Research Program (CSRP) is an interdepartmental program to further research and teaching in the field of Cognitive Science. The CSRP draws on the very wide breadth and depth of resources at UCLA - including Psychology, Computer Science, Linguistics, Neuroscience and Medicine - to create an environment that is superb for learning and doing research in how the mind works. The program sponsors seminars and workshops, acquires and administers shared equipment, coordinates course offerings among the associated departments and provides some support for students by way of fellowships and research assistantships. For questions, address, and further information see our Administration page.

Nombre de La Universidad: UC Santa Barbara

Investigaciones relacionadas	Descripción (breve)
Cognitive & Perceptual Sciences	The graduate program in Cognitive and Perceptual Sciences (CAPS) focuses on how humans perceive, remember, and think about the world. Faculty in Cognition have interests in problem solving, reasoning, human-computer interaction, language, spatial cognition, categorization, and attention. Faculty in Perception have interests in color vision, space perception, pattern vision, visual search, visual control of locomotion and basic sensory processes. Research groups in CAPS include the Vision Science Research Group, the Cognitive Neuroscience Research Group, the Spatial Cognition

Research Group and the Research Center for Virtual Environments and Behavior.

Faculty in CAPS employ a variety of approaches. These include measurement of performance, assessment of the neural substrates of behavior, and computational/mathematical modeling. Our research is concerned with the development of basic theories of perception and cognition, the biological basis of these processes and the application of theories of perception and cognition to problems in information technology and education.

Students in the program are encouraged to acquire a broad background in the cognitive and perceptual sciences as well as mastery of one or more specialty areas. In addition to developing an individualized research plan with a faculty advisor, they take a variety of courses and seminars and participate in the weekly CAPS Seminar. The seminar series attracts many prominent cognitive and perceptual scientists to the campus and also offers opportunities for students and faculty within the program to present their current work. Students may also choose to enhance and broaden their training through interdisciplinary emphases in Cognitive Science and Quantitative Methods.

The laboratories of all faculty in the CAPS area are equipped with multiple computer systems, specialized input and output devices, and interfaces for the particular types of problems studied in the laboratory.

Colorado

Nombre de La Universidad: Regis University Denver, CO

Investigaciones relacionadas	Descripción (breve)
Research and Internship Opportunities	<p>The department has laboratory space for teaching and for research activities with human and nonhuman animals. These facilities provide undergraduate students with excellent opportunities to conduct research in biopsychology, cognition, perception, social development, child development, neuropsychology, behavioral neuroscience and other areas of psychology. The psychology labs feature several modern computers for students to use in laboratory research. A long tradition of Regis students have presented their research at regional and national professional conferences and many students have been co-authors of research papers published in scientific journals. These research activities give students valuable training which enhances job and graduate school opportunities.</p> <p>Our students have presented research at the following conferences:</p> <p>Society for Research in Child Development Conference on Human Development Society for Neuroscience Rocky Mountain Psychological Association Association of Chemoreception Sciences Southwestern Psychological Association</p>
Eugene R. Delay, Ph.D., University of Georgia, 1979, Professor edelay@regis.edu 303-458-4976	Areas of interest: Physiological psychology, clinical neuropsychology, learning and cognition, sensation and perception, taste perception, recovery of function after brain injury
Dona J. McCall, Ph. D., University of North Carolina at Chapel Hill, 1994, Associate Professor rmccall@regis.edu 303-458-4049	Areas of interest: Developmental Psychology, cognitive psychology, educational psychology, and cross-cultural psychology

Columbia

Nombre de La Universidad: Catholic University of America Washington, DC

Investigaciones relacionadas	Descripción (breve)
The Cognition & Virtual Reality Lab is located in O'Boyle Hall, Rooms G2, G5, and 100.	Our research projects focus on using virtual reality for spatial learning. Some of the questions we are currently exploring are: Does learning in VR result in spatial mental models that are qualitatively or quantitatively different from those resulting from learning using other representations? Does learning from VR result in improved transfer to real physical spaces? Does learning in VR result in greater retention, or reduced retraining? Does VR allow in greater cognitive flexibility with respect to spatial tasks? Can VR be used to develop more flexible spatial mental models? Does VR improve recall of spatial locations through reinstatement of context
James H. Howard, Jr. Professor of Psychology and Matthew Scholar	My primary research interests are in cognitive aging and the cognitive neuroscience of aging. People are remarkably sensitive to regularities in their environment and I am interested in understanding how the ability to learn these regularities changes in the course of healthy aging. To investigate these issues, my colleagues and I carry out cognitive studies of spatial and temporal context learning in young and elderly adults as well as in various neuropsychological populations. I am also an Adjunct Professor of Neurology in the Georgetown University Medical Center. This work is supported by the National Institute on Aging.

Georgia

Nombre de La Universidad: Georgia Institute of Technology

Investigaciones relacionadas	Descripción (breve)
<u>Engineering Psychology at Georgia Tech</u>	<p>An engineering psychologist is an applied scientist who develops knowledge concerning the abilities and limitations of humans to sense, store, and process information, and to act. This knowledge is applied to the design, use, and maintenance of human/machine systems. Depending on its goals, the system is then optimized with respect to human performance. The environmental factors affecting system performance are recognized as important and are considered systematically. When relevant data are not available, the engineering psychologist must uncover it through research efforts. This requires considerable skill in experimental design and quantitative methodology.</p> <p>The engineering psychologist is primarily an applied experimental psychologist. For this reason, the foundation areas of study are the various content areas of general-experimental psychology. Specialized work in engineering psychology is represented by four areas of application: methods in human factors research, including human-computer interaction; effects of environmental factors and stressors; perceptual/motor aspects of systems design; and human performance and skill. Engineering psychology research involves such topics as display-control relationships, environmental design, information coding and processing, psychomotor performance, and human-computer interaction. The environmental factors area is concerned with the effects on human performance of such variables as noise, lighting, motion, and hazardous environmental ambients. The human performance area is concerned with the evaluation of human performance and its information-processing components. Interdisciplinary research projects concerned with these and various other topics are also conducted in conjunction with the <u>Graphics, Visualization and Usability Center (GVU)</u>.</p> <p>The engineering psychology graduate program has been given full accreditation by the Human Factors and Ergonomics Society.</p> <p>The Georgia Tech student chapter of the <u>Human Factors and Ergonomics Society</u></p>

	represents students interested in human-machine interaction issues. The chapter regularly sponsors talks by human factors professionals to inform students and faculty about human performance issues in real-world environments.
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Massachussets

Nombre de La Universidad: Boston University Boston, MA

Investigaciones relacionadas	Descripción (breve)
Center for Memory and Brain Child Cognition Laboratory Cognitive Neuroimaging Laboratory Laboratory of Cognitive Neurobiology Laboratory of Developmental Cognitive Neuroscience Psycholinguistics Laboratory	

Minnesota

Nombre de La Universidad: University of Minnesota twin cities campus.

Investigaciones relacionadas	Descripción (breve)
<u>Center for Cognitive Sciences</u>	The Center for Cognitive Sciences is an interdisciplinary research center that serves as the foundation for research in the cognitive sciences at the University of Minnesota. Members of the Center represent 14 University departments and six colleges.
<u>Computational Perception and Action Laboratory</u>	Projects include: <ul style="list-style-type: none"> ·Multimodal Virtual Reality Environment ·Vision for Reach and Grasp ·Navigation and Reinforcement Learning ·fMRI Data Analysis ·Point Location
<u>Computational Vision Lab</u>	In this laboratory, we are interested in how the visual brain arrives at interpretations of the retinal image that are useful for the decisions and actions of everyday life.
<u>Multimedia Lab</u>	Multimedia refers to computer-based presentations that combine several elements including text, graphics, still images, video, animation and sound. It can be delivered via LCD projector from your computer, over the internet, or the Department intranet.
<u>Translational Research in Cognitive and Affective Mechanisms Laboratory</u>	Studies being conducted in the lab include: <ul style="list-style-type: none"> ·Functional Magnetic Resonance Imaging (fMRI) Study of Twins ·Cognitive Control over Habitual and Emotional Responses ·Decision-making and Emotional Mechanisms in Schizophrenia ·Cognitive and Functional Neuroanatomical Indices of the Genetic Predisposition to Schizophrenia ·Advanced Methods for Dissociating Cognitive Control in fMRI
<u>Visual Cognition Laboratory</u>	We are interested in explaining human cognitive abilities—especially aspects of memory, learning, vision, and emotion—in terms of how the brain accomplishes them. We integrate behavioral research with computational analyses/models and implementational evidence to explain these abilities by reference to the architecture, functions, and interactions of the underlying neural processing subsystems.

Missouri

Nombre de La Universidad: University of Missouri at Columbia

Investigaciones relacionadas	Descripción (breve)
<u>Working Memory Development Lab</u>	research focuses on memory and attention and their roles in human cognition. Our participants include elementary school-age children as well as young adults (college freshmen).
<u>Cognitive and Clinical Neuroscience Lab</u>	<p>Research at my lab deals with the neural basis of attention, awareness, and action. Event-related potentials (ERPs), startle-blink, and neuroimaging techniques are used to identify the locus and time course of relevant brain processes in normal and neurologically impaired adults.</p> <p>Current studies of visual awareness employ two paradigms. In patients with unilateral cortical blindness due to stroke, responses to physically identical stimuli presented within the blind or intact hemifield are compared. In healthy participants, we study conscious versus unconscious visual processes using binocular rivalry. Different images are simultaneously presented to the left and right eyes to induce perceptual oscillations between the eyes. Monocular probes delivered to the suppressed or dominant eye allow the mechanisms that underlie rivalry to be examined with ERPs and neuroimaging.</p> <p>Our research on motor processes includes studies of the lateralized readiness potential and the startle-blink reflex in patients with Parkinson's disease and in healthy young and older adults. Using these two measures, selective deficits at the cortical and brainstem levels are investigated using paradigms adapted from cognitive psychology. In particular, our most recent research on Parkinson's disease focuses on deficits in response selection (assessed with the Eriksen flanker task) and impaired response preparation in a forewarned reaction time task.</p>

Montana

Nombre de La Universidad: Montana State University Bozeman, MT

Investigaciones relacionadas	Descripción (breve)
Babcock, A. Michael (Ph.D. 1985, Colorado State University).	Physiological psychology; cerebral ischemia, neurobiology of learning & memory. Phone (406) 994-5175. E-mail: mbabcock@montana.edu (on sabbatical Spring 2004)
Block, Richard A. (Ph.D. 1973, University of Oregon).	Cognitive psychology; temporal information processing, judgment & decision making, cognitive aging. Phone (406) 994-5173. E-mail: block@montana.edu

New Hampshire

Nombre de La Universidad: Dartmouth College

Investigaciones relacionadas	Descripción (breve)
Center for Cognitive Neuroscience	<p>The Center for Cognitive Neuroscience at Dartmouth College is a multidisciplinary research group devoted to understanding the relationship between the brain and behavior. Research efforts encompass a broad range of activities including functional neuroimaging, neuropathology and computer science. In addition to its intensive research activities, a Ph.D. in cognitive neuroscience may be obtained through one of the participating departments.</p> <p style="text-align: center;">Facilities</p> <p>The Center for Cognitive Neuroscience occupies laboratory and office space in the brand new state-of-the-art Moore Hall. The main research facilities include <u>functional magnetic brain imaging laboratories</u>. Also there are clinical testing rooms, neurophysiological laboratories, human electrophysiological laboratories, neuroanatomical laboratories, and extensive psychophysical facilities. It also houses work stations for computational and imaging projects. Located nearby is the Dartmouth-Hitchcock Medical Center consisting of a 450-bed hospital including a 36-bed Neurology/Neurosurgery ward.</p> <p style="text-align: center;">Training</p> <p>The Center for Cognitive Neuroscience is a multidisciplinary research group that seeks to train promising young scientists in the field of cognitive neuroscience. Upon completion of the graduate program, students will receive a doctoral degree in cognitive neuroscience. Graduate students may focus their study of the relationship between brain and behavior at a number of levels including cognition physiology, psychophysics, electrophysiology, neuroanatomy, functional imaging, and computer science. The Center also continues Dartmouth's strong tradition of quality undergraduate education by offering a number of courses and research opportunities to undergraduate students.</p>

Research

The objective of the Center is to study cognitive, perceptual, and motor processes by the careful implementation of a variety of experimental and clinical methodologies. Specific projects are characterized by the integration of methodologies from both cognitive and brain science. Fields of study include cortical mechanisms of sensory and motor processing, functional magnetic resonance imaging, intracranial electrophysiological studies of sensory information processing, computational robotics, hemispheric lateralization and integration, effects of brain damage on decision making and memory, neuroanatomical studies of language processing, and the neurophysiology of auditory processing and music perception.

Affiliations

Faculty and students at the Center can also benefit from the Center's associations with renowned national institutions of cognitive neuroscience, including the McDonnell Summer Institute in Cognitive Neuroscience, the Cognitive Neuroscience Society, the Journal of Cognitive Neuroscience, and the Cognitive Neuroscience Institute.

Publications

- [The Journal of Cognitive Neuroscience](#)
- [The Cognitive Neurosciences--Michael S. Gazzaniga, editor](#)
- [Cognitive Neuroscience--Gazzaniga, Mangun, & Ivry](#)

New Jersey

Nombre de La Universidad: Princeton University

Investigaciones relacionadas	Descripción (breve)
JONATHAN COHEN Professor of Psychology Director, Center for the Study of Brain, Mind and Behavior MD, University of Pennsylvania, 1983 Ph.D., Carnegie Melon University, 1990	Research in my laboratory focuses on the neurobiological mechanisms underlying cognitive control, and their disturbance in psychiatric disorders such as schizophrenia and depression. Cognitive control is the ability to guide attention, thought and action in accord with goals or intentions. One of the fundamental mysteries of neuroscience is how this capacity for coordinated, purposeful behavior arises from the distributed activity of many billions of neurons in the brain. Several decades of cognitive and neuroscientific research have focused on the mechanisms by which control influences processing (e.g., attentional effects in sensory processing, goal directed sequencing of motor output, etc.), and the brain structures upon which these functions depend, such as the prefrontal cortex, anterior cingulate cortex, basal ganglia and brainstem neuromodulatory systems. However, we still have a poor understanding of how these systems give rise to cognitive control. Our work seeks to develop formally explicit hypotheses about the functioning of these systems, and to test these hypotheses in empirical studies. An important motivation for this work is the development of a theoretically sound foundation for research on the relationship between disturbances of brain function and their manifestation as disorders of thought and behavior in psychiatric illness
JOEL COOPER Professor of Psychology Ph.D., Duke University, 1969	My major research focus is on attitudes and attitude change, particularly as they relate to the process of cognitive dissonance. My recent work examines the role of the vicarious experience of dissonance -- i.e., feeling dissonance due to the inconsistent behavior of others. I am also interested in the role of the self in dissonance arousal. Two other areas of active interest are (1) the effect of expert testimony in courts of law and (2) gender differences in the effectiveness of information technology, particularly among school children.
MICHAEL GRAZIANO Professor of Psychology Ph.D., Princeton University, 1996	How does the brain monitor the location of the limbs and guide movement ? We use a range of techniques to study sensorimotor integration in the monkey brain, including single neuron physiology, electrical stimulation, chemical activation and deactivation, and anatomical tract tracing to address these questions. We study parietal areas such as area 5, the ventral intraparietal area, and the medial intraparietal area, and motor areas

	<p>such as M1, lateral premotor cortex, and the supplementary motor area. In a recent set of studies of the motor cortex, we electrically stimulated cortical sites using 500 ms trains of electrical pulses. These stimulation trains were longer than those typically used in studies of motor cortex, but they approximated the time scale of reaching and grasping movements. The stimulation trains evoked complex, coordinated movements that appeared to match common gestures in the monkey's repertoire. For example, stimulation of one site caused the arm to reach to the space about 10 cm in front of the chest while the hand shaped in an apparent grip posture. Stimulation of another site caused the hand to move to the mouth and close in a grip posture and caused the mouth to open. Stimulation of yet another type of site caused an apparent defensive gesture including a squint and grimace, a turning aside of the head, and a thrusting of the hand into lateral space as if to block a nearby threatening object. These movements were reliable and could even be evoked under anesthesia. Our current focus is on studying these complex movement programs that are triggered by motor cortex stimulation, to better understand the neuronal circuits that underlie them.</p>
<p>SABINE KASTNER Assistant Professor of Psychology MD, Dusseldorf, 1993 Ph.D., University of Gottingen, Germany, 1994</p>	<p>Attentional mechanisms are required to select relevant and to filter out irrelevant information from cluttered visual scenes. In my laboratory we are studying the neural basis underlying these processes using functional brain imaging, behavioral performance measures, and electrophysiology in humans and non-human primates. Using these techniques, we have found that neural mechanisms of selective attention operate at multiple stages in the visual system, including cortical and subcortical stages. The modulatory effects of attention at each stage appear to be determined by the visual processing capabilities of that stage. These attention signals are not generated in the visual system, but in a distributed network of higher-order areas in frontal and parietal cortex that exerts top-down control via feedback projections.</p> <p>In our most recent work, we have begun to complement the studies on attentional mechanisms in the human brain with studies in non-human primates using newly developed imaging techniques, which utilize fMRI to measure brain activity in awake monkeys performing visual tasks. The long-term goal of these studies is to use fMRI in monkeys in combination with fMRI-guided lesions and single-cell physiology to derive an animal model of visuo-spatial hemineglect, an attentional deficit.</p>
<p>KENNETH NORMAN</p>	<p>In my research, I use biologically realistic neural network models to explore how the brain</p>

<p>Assistant Professor of Psychology Ph.D., Harvard University, 1999</p>	<p>gives rise to episodic memory (i.e., the ability to recall previously experienced events, and to recognize events as having been previously experienced), and I test these models' predictions using several different methods, ranging from studies of memory performance in college students, to studies of brain-damaged patients with memory disorders, to neuroimaging studies that record brain activity during recognition and recall tests. A major focus of my research is characterizing how different subregions of the medial temporal lobes (in particular, the hippocampus and perirhinal cortex) contribute to recognition and recall, and how the contributions of these structures differ from one another. I am also interested in how accuracy and distortion in episodic memory arise from interactions between medial temporal structures and prefrontal cortex.</p>
<p>ALEX TODOROV Assistant Professor of Psychology Ph.D., New York University, 2002</p>	<p>SOCIAL COGNITION AND PERSON PERCEPTION The basic questions are how we form representations of other people and how different implicit processes shape and influence these representations. The current research projects include both behavioral and brain imaging experiments.</p> <p>JUDGMENT AND DECISION MAKING Current projects focus on how the probability of events changes the assessment of their value and the implications of this phenomenon for rational decision making. A second set of projects focuses on different illusions of knowledge, i.e, phenomena where additional information either hurts or does not improve performance while at the same time increases confidence in performance.</p> <p>ATTITUDES, PERSUASION, AND PUBLIC OPINION Current projects focus on misperceptions of public opinion and their policy implications. For example, we have shown that while Americans have a strong preference for multilateral foreign policies they substantially overestimate public support for unilateral policies, and that such misperceptions translate into increased support for specific unilateral policies. The research projects include representative surveys, behavioral experiments, and data mining of existing survey data sets.</p>
<p>ANNE TREISMAN Professor of Psychology D. Phil. Oxford University, England, 1962</p>	<p>Research in my lab is concerned with visual attention, object perception and memory. We explore the nature of the limits to human perception, the information-processing that results in the perception of objects and events, and the nature of the representations that underlie both conscious experience and implicit memory, shown in perceptual priming.</p>

	We mainly use behavioral methods, but we are interested in relating our findings to the brain. We have begun to study patients with brain damage, and hope to collaborate in studies using brain imaging or evoked responses.
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New York

Nombre de La Universidad: Rochester University of Department of Brain and Cognitive Sciences

Investigaciones relacionadas	Descripción (breve)
Research Programs	<p>Our research spans a large domain and straddles several disciplines in the behavioral, neural, and computational sciences. All of it is connected by the idea that to understand behavior we must study not only behavior but also the processes - both neural and computational - on which it depends. While the faculty have active research programs in many regions of the large domain, in several areas we have notable concentrations of strength. Some of these concentrations of expertise are in recognized perceptual or cognitive systems; others cover broader issues that cut across systems and link research projects that deal with different behaviors and species.</p> <p>Faculty Research Interests</p> <ul style="list-style-type: none"> Brain Changes During Sensitive Periods for Learning Comparisons of Sign Languages of the World Electrophysiological Indicators of Cognitive Function Experience and the Development of Perceptual-Motor Systems Fundamental Limits to Vision Hormonal Influences on the Development of the Nervous System Mechanisms Underlying the Acquisition of Language Mechanisms Underlying the Comprehension of Language Modularity in Cognitive Function and the Brain Neural Mechanisms of Visuomotor Skills and Visual Working Memory Computational Models of Neural Representations and Computations Neurotransmitters and the Developing Nervous System Reorganization of Visual Functions in Congenitally Deaf Adults Role of Neuronal Activity in Visual Cortical Development

	<p>Sensory and Perceptual Modulation of Reflexive Behaviors</p> <p>Serial Organization of Vision</p> <p>Visual Computations for Perception and Action</p> <p>Visuo-motor Coordination in Natural Environments</p>
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North Carolina

Nombre de La Universidad: University of North Carolina-Greensboro

Investigaciones relacionadas	Descripción (breve)
Dr. John Dunlosky	My research focuses on understanding people's metacognition. Some questions that are central to my research include: How can students be taught to assess their own memory so as to be perfectly accurate at knowing when they have mastered new material? How does consciousness relate to metacognition? How do students regulate their learning, and what makes some students more effective than others? As everyone knows, memory gets worse as people get older. Another aspect of my research involves pursuing questions about why aging affects memory. Such as, Are age-related deficits in memory linked to age-related deficits in metacognition? This would occur if older adults have even more metacognitive failures than do younger adults.
Dr. Michael Kane	My primary research interests are in attention and memory, with special emphasis on what individual differences, age differences, and species differences can tell us about the dynamic interaction of these two constructs. My investigations of attention and memory focus on three central questions: 1) How do individuals control their allocation of attention, either in selectively processing goal-relevant information amidst distraction, in processing multiple information sources simultaneously, or in switching between distinct information sources or divergent task objectives? 2) What are the behavioral consequences of attention-control failures, particularly regarding forgetting, reasoning, action slips, and "intelligent," goal-directed behavior? 3) To what degree does selective attention constrain our ability to remember, and to what degree does maintaining information in memory constrain our ability to focus our attention and control our actions? With respect to all of these questions, I take a converging-operations approach, using a variety of experimental and correlational methods, and I attempt to critically evaluate the empirical tools that researchers use to examine attention and memory.
Dr. Reed Hunt	My general research interests are in cognitive psychology with a specific focus on adult

	<p>memory. One of the areas to which I have devoted considerable research is the effect of distinctive processing. My work is based on the premise that distinctive processing when differences among elements of an event are processed in the context of similarity shared by those elements. When distinctive processing is combined with appropriate cues at test, memory for the targeted material is near perfect and errors of commission are minimized. We know the latter fact from our research on several different indices of false memory. A second current area of research in my lab concerns contrasts between implicit and explicit memory with a particular focus on tests of category production. This research has yielded some surprising findings about the effects of repetition priming on category production. A third and new line of research is on testing effects. In particular, we are attempting to analyze the conscious and unconscious influences of a prior test on subsequent test performance.</p>
<p>Dr. Ed Wisniewski</p>	<p>At a general level, my research focuses on people's mental representations or concepts of everyday things. It addresses a number of interrelated issues associated with people's concepts. First, I am especially interested in how people combine familiar concepts to produce new ones. People frequently use these novel combinations to express new ideas, to refer to new situations, and so on. There has been much interest in novel noun-noun and adjective-noun combinations. Recent examples include: ostrich steak (a steak made out of ostrich meat), zebra mussel (a mussel with zebra-like stripes), and purple potato (a type of potato that is purple). My work focuses on the basic types of strategies that people use to combine concepts as well as the cognitive processes involved. I have developed a two-process account of how people combine concepts.</p>

Ohio

Nombre de La Universidad: Ohio State University

Investigaciones relacionadas	Descripción (breve)
Cognitive Development Lab	<p>Our research focuses on the development of higher-order cognition, including categorization, reasoning, and problem solving, and interrelationships between cognition and language.</p> <p>Our goal is to understand</p> <ul style="list-style-type: none">(1) mechanisms of knowledge representation and(2) changes in these mechanisms in the course of learning and cognitive development. <p>We examine these mechanisms in both knowledge-rich domains, such as mathematics and science, and in knowledge-lean domains, such as object spatial arrangements. Our current projects focus on the development of induction in young children, the development of mathematical reasoning, representation of propositions and deductive arguments, and problem representation in experts and novices.</p>
Cognitive and Behavioral Neuroscience Laboratory MARTIN SARTER, Ph.D.	<p>Cognitive functions of cortical transmitter systems, specifically cortical acetylcholine; Neurotransmitter interactions in the basal forebrain and attention; Neuropharmacological and cognitive foundations of drug-induced cognition enhancement and the treatment of age-related dementias; Neuronal mechanisms mediating psychotic cognition;</p> <p>Current Research: Current experiments focus on the mediation of attentional functions by afferent circuits of basal forebrain corticopetal cholinergic projections, and on the role of these circuits in the manifestation of the symptoms of schizophrenia and other neuropsychiatric disorders. Presently, we are particularly interested in the glutamatergic regulation of basal forebrain corticopetal neurons, and in the conditions under which the efferents of the nucleus accumbens modulate the excitability of basal forebrain neurons. A related research avenue concerns the detrimental interactions between pre-existing aberrations in the functions of cortical cholinergic inputs and the aging process. Finally, current research concerns the characterization and validation of a new electrochemical method for the rapid detection of choline as a measure of acetylcholine release at high</p>

temporal resolution.

Techniques Available: Students in my laboratory acquire research skills and competence in a wide variety of modern techniques in the behavioral neurosciences. These techniques range from the sophisticated analysis of attentional functions using computerized operant systems and tasks developed and validated for the assessment of such functions in laboratory rodents, the use of microdialysis for the measurement of neurotransmitter release in task-performing animals (in collaboration with J.P. Bruno), to the use of antisense oligodeoxynucleotides to probe the role of defined neuronal systems in the mediation of cognitive functions. Furthermore, students acquire standard neurosurgical, histological, and immunohistological techniques. In general, the training is designed to provide skills and competence in a wide range of state-of-the-art behavioral and neuroscientific techniques.

South Carolina

Nombre de La Universidad: Clemson University Clemson, SC

Investigaciones relacionadas	Descripción (breve)
Dr. Lee Gugerty -- gugerty@clemson.edu	My recent research has focused on human performance in complex real-time tasks such as driving and flying. One part of this research has looked at how people allocate attention (or, maintain situation awareness) during driving. My current research in this area focuses on how drivers' attention allocation is affected by: (1) conversations over a cell phone and with passengers; and (2) the use of electronic navigation aids. The second part of this research on real-time tasks focuses on the task of navigation during aerial reconnaissance. I have used both a uninhabited aerial vehicle (UAV) simulator and a static spatial judgment task to investigate how aircraft operators navigate using maps, in particular, how they coordinate exocentric map information with egocentric information in the forward field of view while making directional judgement. In addition to this research on complex, real-time tasks, I am currently using the department's usability lab to conduct task analyses and usability tests of: (1) a software system for evaluating faculty work activities; and (2) a system for improving the readability of electronic text.
Dr. Christopher C. Pagano -- cpagano@clemson.edu	My research interests include Human Experimental Psychology, Visual Depth Perception, Visually Guided Reaching, Touch, Kinesthesia, Proprioception, Human Factors, and Cognition. Specific projects include the perception of object properties - such as length, orientation, and weight - via muscle sensitivity, the perception of limb position and how it is affected by changes in mass distribution, visual depth perception, and visually guided reaching. In conjunction with faculty in the department of Electrical and Computer Engineering I am beginning a new program of research involving the human factors of teleoperated robotic systems.

Tennessee

Nombre de La Universidad: Vanderbilt college Tennessee

Investigaciones relacionadas	Descripción (breve)
Gordon Logan Centennial Professor of Psychology. Cognition and Cognitive Neuroscience	Logan's research interest includes automaticity and skill acquisition, attention and performance, spatial cognition, executive control strategies and processes, stopping behavior, mental arithmetic, and attention deficits in hyperactive children.
David Noel	An intellectual bridge is needed between the established disciplines of neuroscience and psychology, and my research seeks to contribute to the construction of that bridge through the use of the conceptual tools of computer science. The occupants of the world of neurobiology are physical - chemicals and cells, electrical signals and neural circuits - while the constituents of the world of cognitive psychology are more abstract and informational - perceptual representations, memory traces, and patterns of action. Computer science investigates the way in which physical mechanisms can give rise to complex and abstract forms of information processing. It provides formal tools which can be used to explain how the physical mechanisms of the brain can give rise to the information processing abilities of the mind. Researchers working on this bridge, from biology to behavior, call their work computational neuroscience if they are building from one shore, or cognitive modeling if they are building from the other. Those who are particularly eager to span the gulf call this enterprise computational cognitive neuroscience.
Thomas Palmieri	Our research investigates perceptual categorization, a fundamental part of human cognition that serves as the bridge between basic perception and high-level thought. Our research examines what kinds of representations are used to categorize objects, how those representations are learned, and how category representations change with experience. Formal models are used to motivate empirical studies and to instantiate hypotheses regarding representations and processes underlying perceptual categorization. Comparing the relative abilities of these models to account for the qualitative and quantitative aspects of observed data allows for testing well-specified hypotheses about the fundamental mechanisms of perceptual categorization. More recently, we have begun investigating how processes involved in perceptual categorization are localized in the human brain using functional brain imaging (fMRI) and

have begun relating activity of single neurons to various formal models. I am the PI on grants from NSF and NIMH that jointly fund much of the research in my laboratory. I am also a co-PI with Gordon Logan and Jeffrey Schall on a grant from NSF to fund our collaborative work. My fMRI research is funded by a Discovery Grant and by the General Clinical Research Center at the Medical Center. I am also a member of the Interdisciplinary Collaborative Consortium on the Cognitive Neuroscience of Category Learning sponsored by the James S. McDonnell Foundation. I received my undergraduate degree in cognitive science from Carnegie Mellon University and received my Ph.D. in cognitive psychology from Indiana University.

Utah

Nombre de La Universidad: University of Utah

Investigaciones relacionadas	Descripción (breve)
Cognitive and Behavioral Neuroscience	<p>We use a wide range of approaches to study the relationship between neural and cognitive processes. Research methods include human and animal cognitive analysis, neuropsychological patient studies, animal lesion studies, event-related potentials (ERPs) and functional magnetic resonance imaging (fMRI). Established connections to the interdisciplinary <u>Graduate Program in Neuroscience</u>, Neurology, Psychiatry, and Radiology Departments in the <u>University of Utah Medical School</u>, the VA Medical Center, and the Center for Advanced Medical Technologies allow students to add breadth and depth to their cognitive neuroscience training. Current faculty and student research interests include neuropsychological and cognitive studies of attention, cognitive and neuroimaging approaches to studying the interaction between visual and motor processing, and animal and human studies of memory tasks and associated neural structures. An emerging <u>joint program</u> involving <u>CNS</u> faculty and <u>Clinical</u> faculty provides students with an interdisciplinary approach to studying brain-behavior relationships. Parallel projects involving animals, human neuropsychological populations, and neuroimaging methods hope to provide new insights into systems of perception, memory, and executive functioning. Participating CNS faculty in the Cognitive Neuroscience focus include <u>Sarah Creem-Regehr</u>, <u>Fran Friedrich</u>, <u>Ray Kesner</u>, <u>Charlie Shimp</u>, and <u>David Strayer</u>.</p>
Applied Cognition	<p>Our program in applied cognition / engineering psychology uses a variety of approaches to study how the principles derived from basic cognitive research apply to real-world situations (and visa versa). Instead of focusing solely on basic laboratory studies or on purely applied research, our approach emphasizes a blend of the two so that our laboratory research has implications for applied issues and our applied research provides information that can be used to refine theories of human cognition. For example, faculty in our area currently are applying basic research in perception, attention, memory, decision making, and expertise to real-world applications like driving, medical cognition, spatial navigation and locomotion, and the design of cutting-edge internet-based on-line education. Students in the applied cognition focus will be trained so that they are</p>

	<p>competitive for positions in both academia and industry. An exciting aspect of the applied cognition focus is that it links up with several researchers in other areas of the department (e.g., Social, Developmental, Clinical/Health) and outside of the department (Computer Science, Anesthesiology). Participating CNS faculty in the applied cognitive focus include Sarah Creem-Regehr, Frank Drews, Bill Johnston, Tom Malloy, and David Strayer.</p>
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España

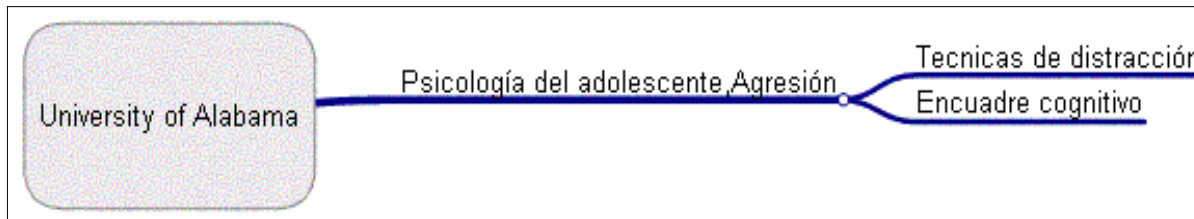
Nombre de La Universidad: Universidad de Deusto

Investigaciones relacionadas	Descripción (breve)
Neuropsicología de los procesos cognitivos	El objetivo de esta área es analizar los mecanismos básicos de la memoria y de la atención y sus correlatos neurológicos. Para ello, se pretenden diseñar y replicar paradigmas experimentales y observacionales que permitan evaluar de forma ecológica el funcionamiento de tales procesos.
<u>Simulación informática del aprendizaje</u>	Investigaciones en curso: <ul style="list-style-type: none">• Generalidad del aprendizaje asociativo.• Competición de claves y bidireccionalidad en el aprendizaje de relaciones causales.• Procesos simbólico-conexionistas en el aprendizaje inductivo de conceptos.• Aprendizaje natural y artificial.

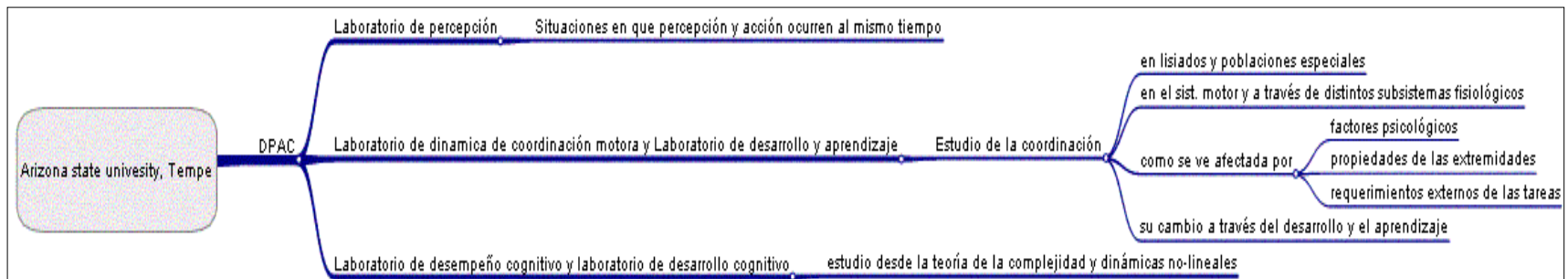
Anexo IX

Esquemas de temas de investigación

University of Alabama

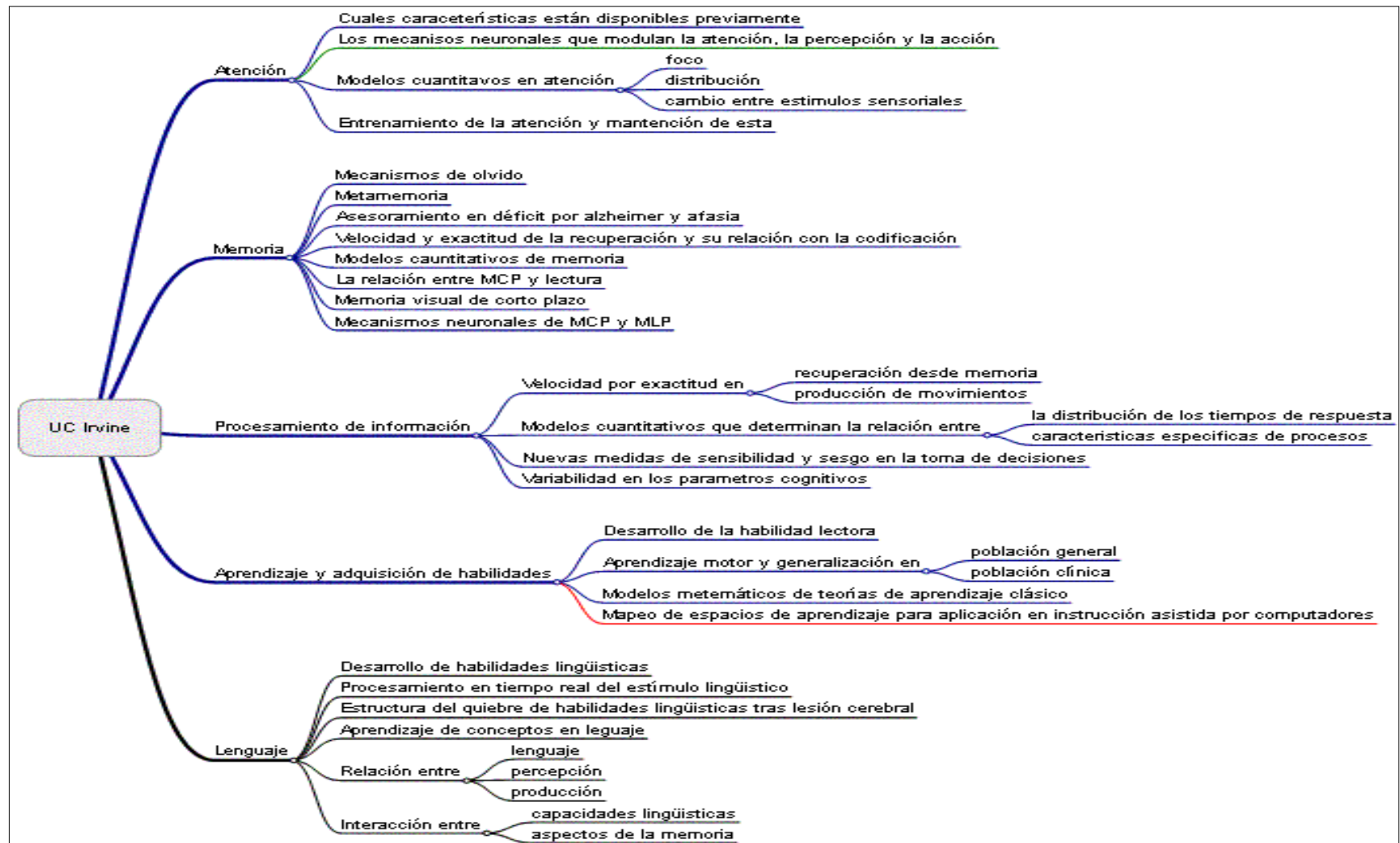


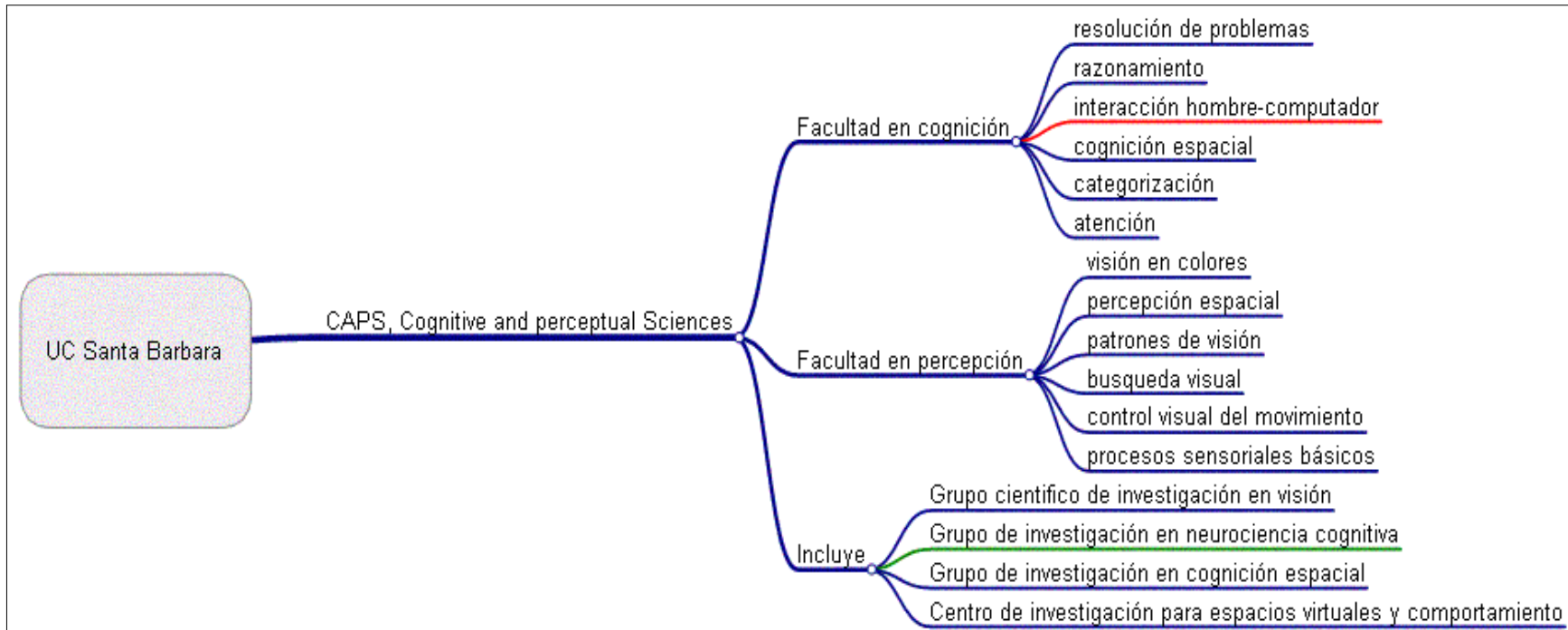
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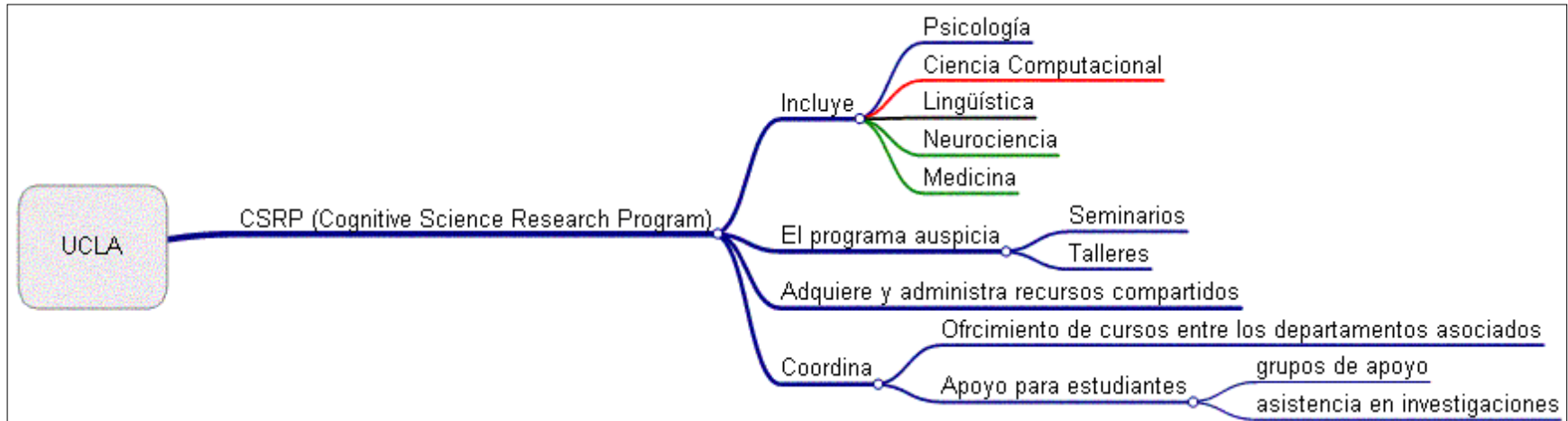
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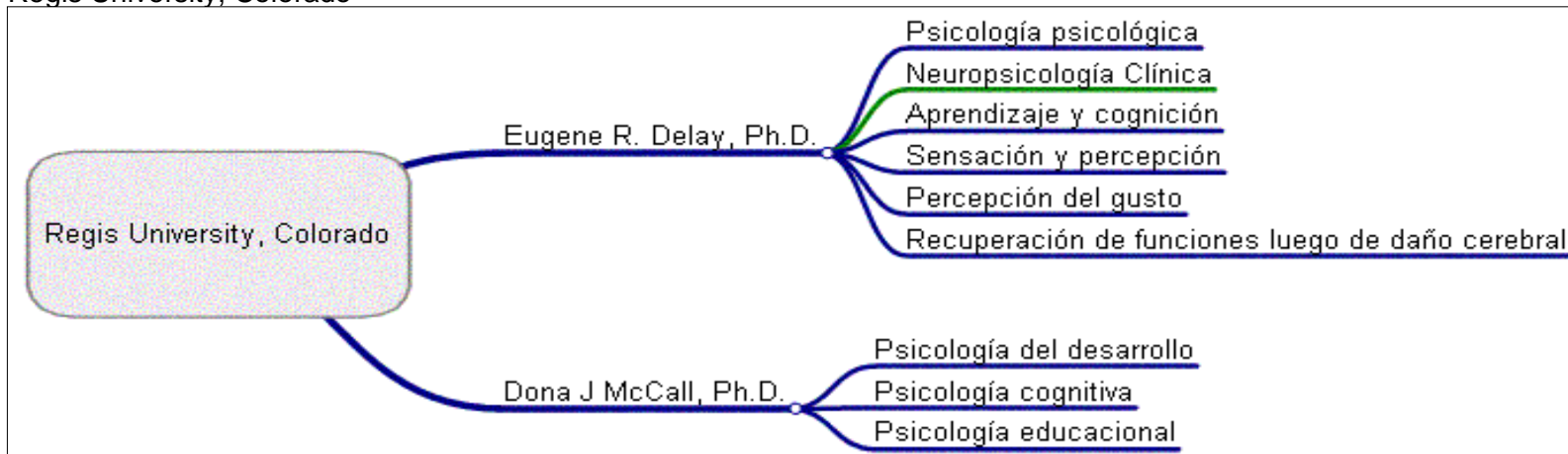




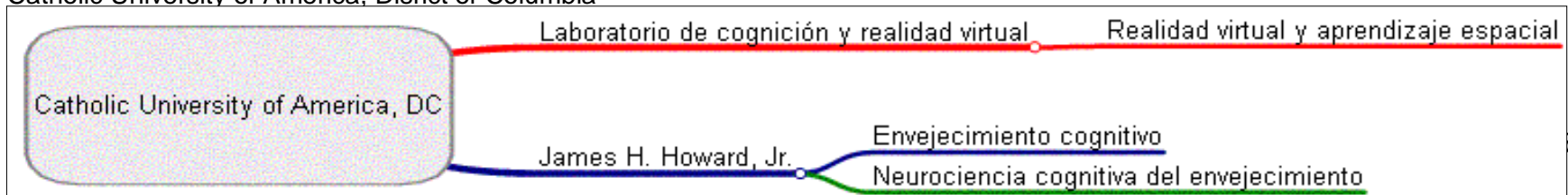
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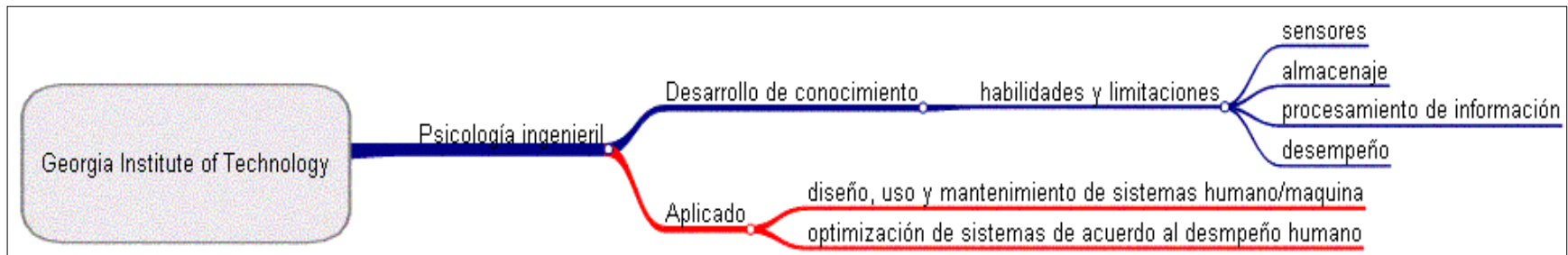
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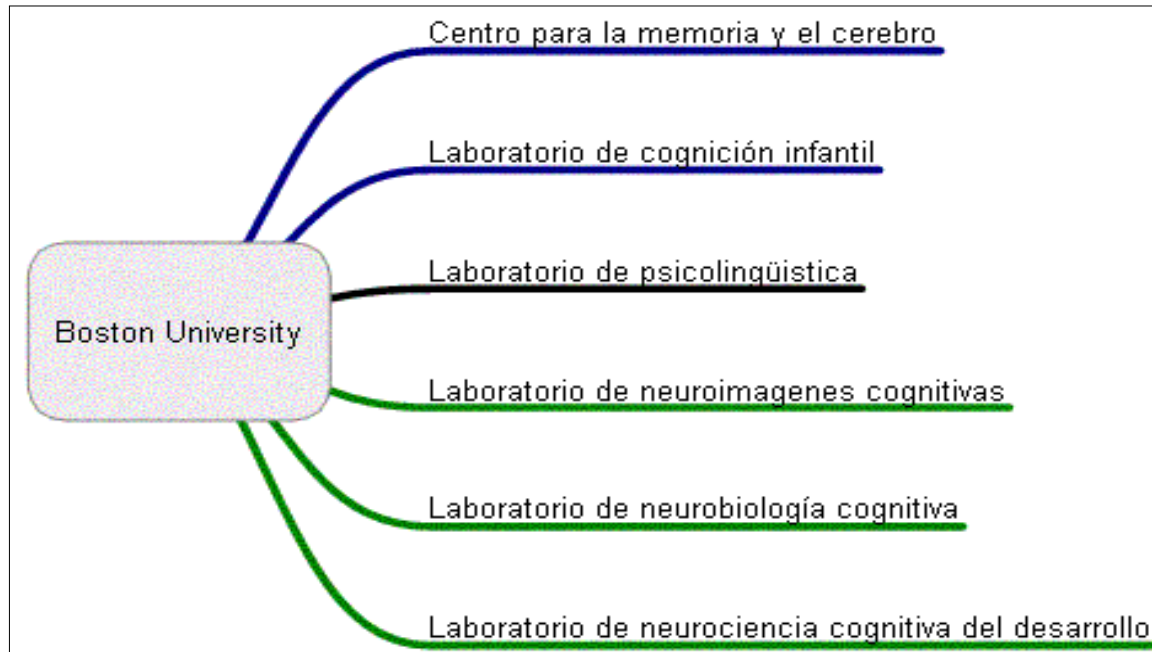
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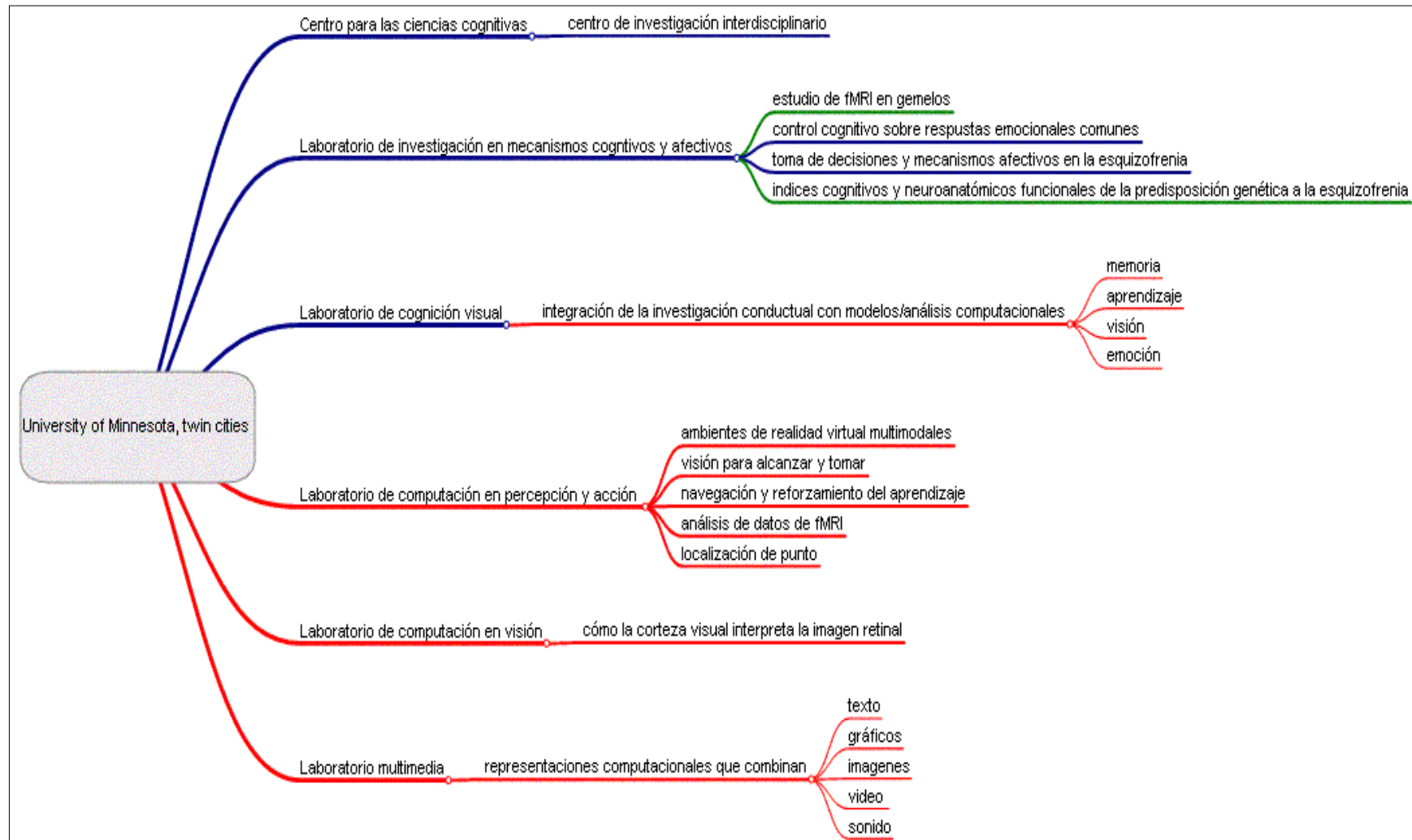
Institute of Technology, Georgia



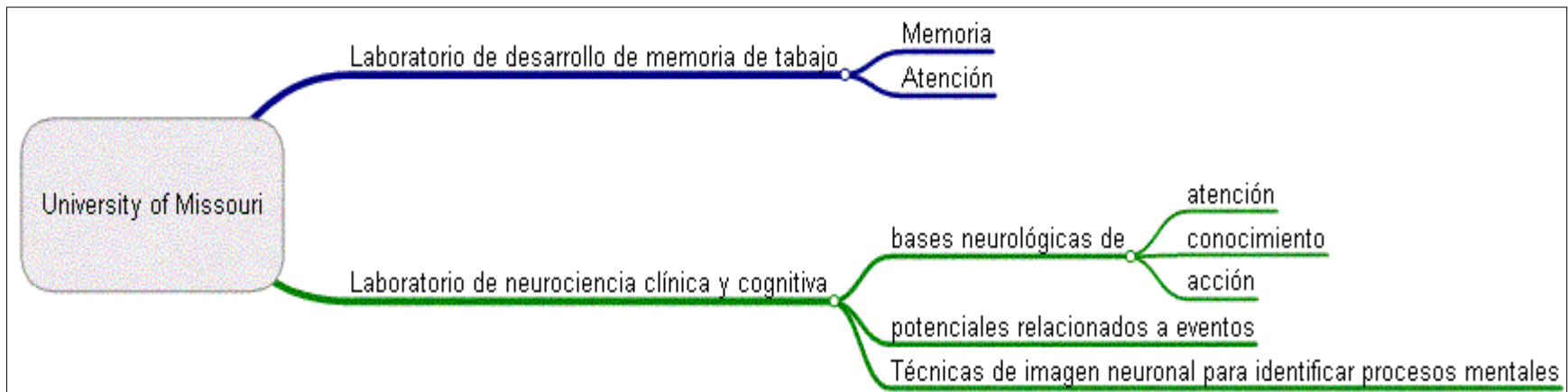
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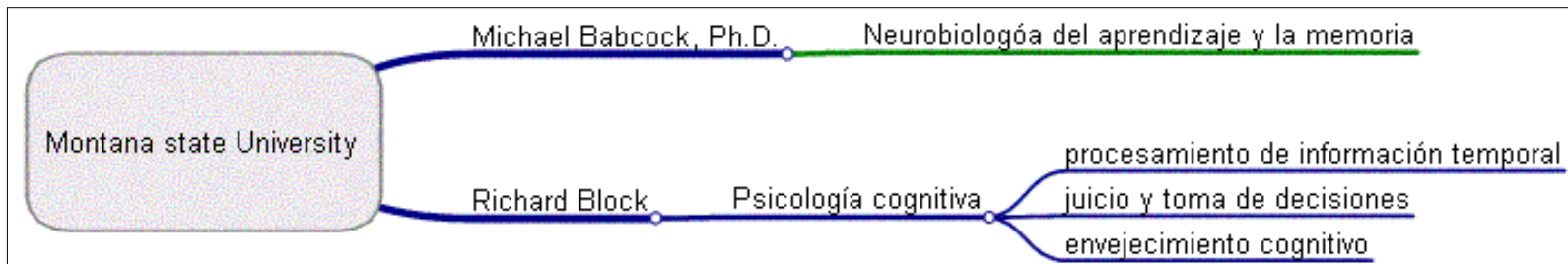
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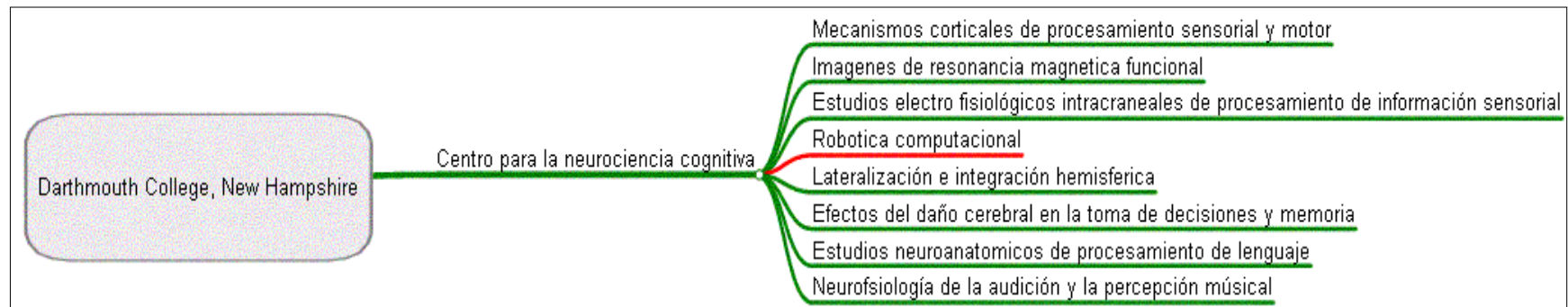
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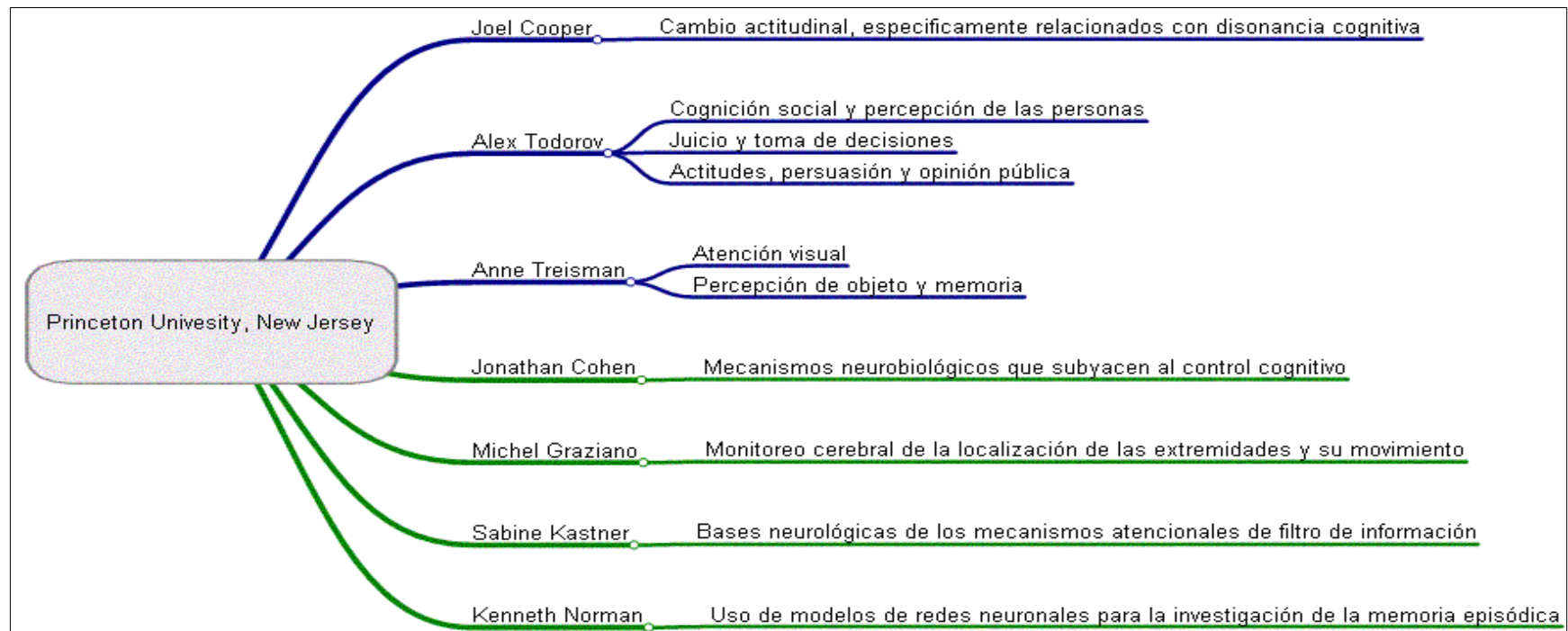
Montana State University



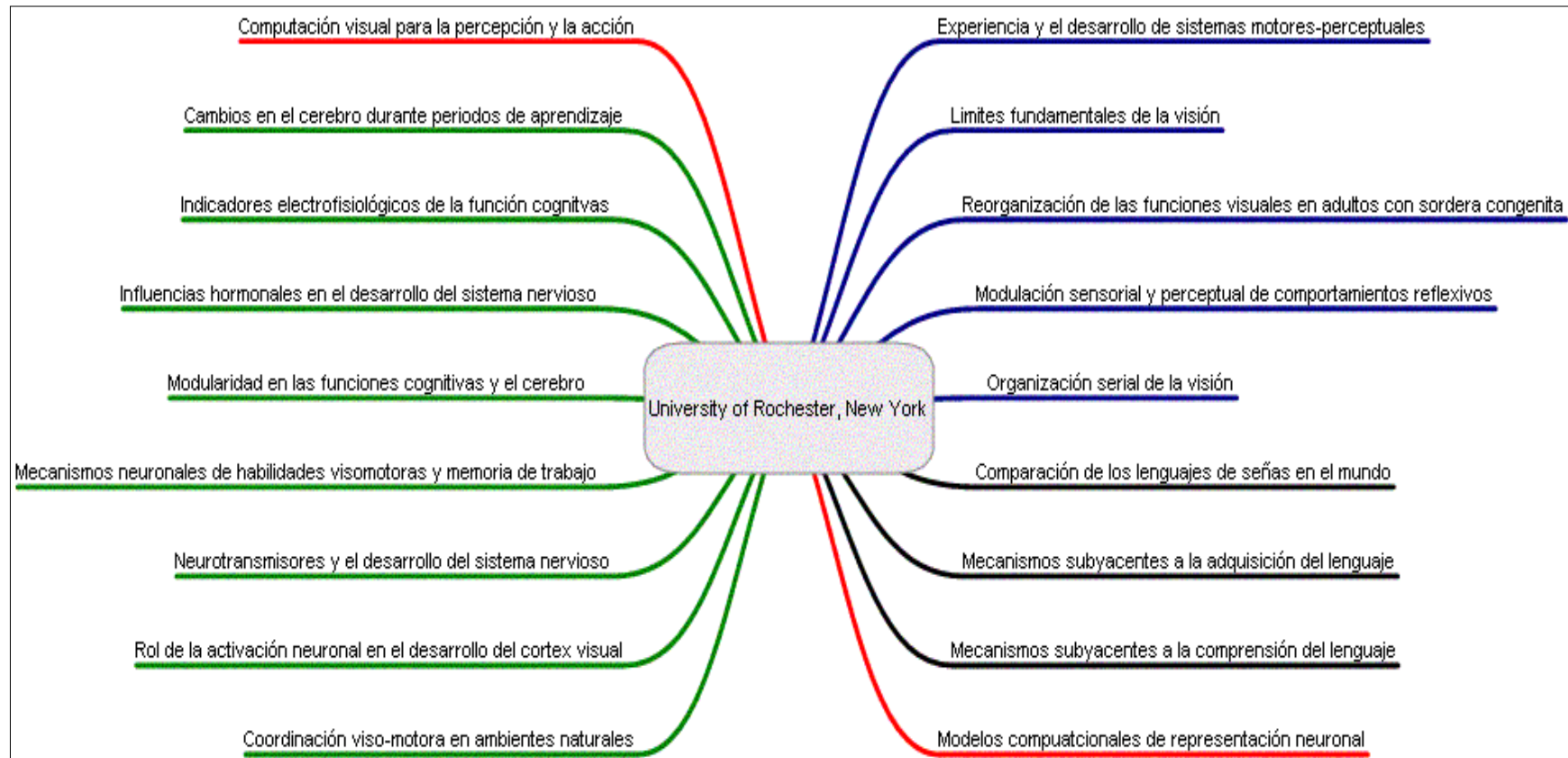
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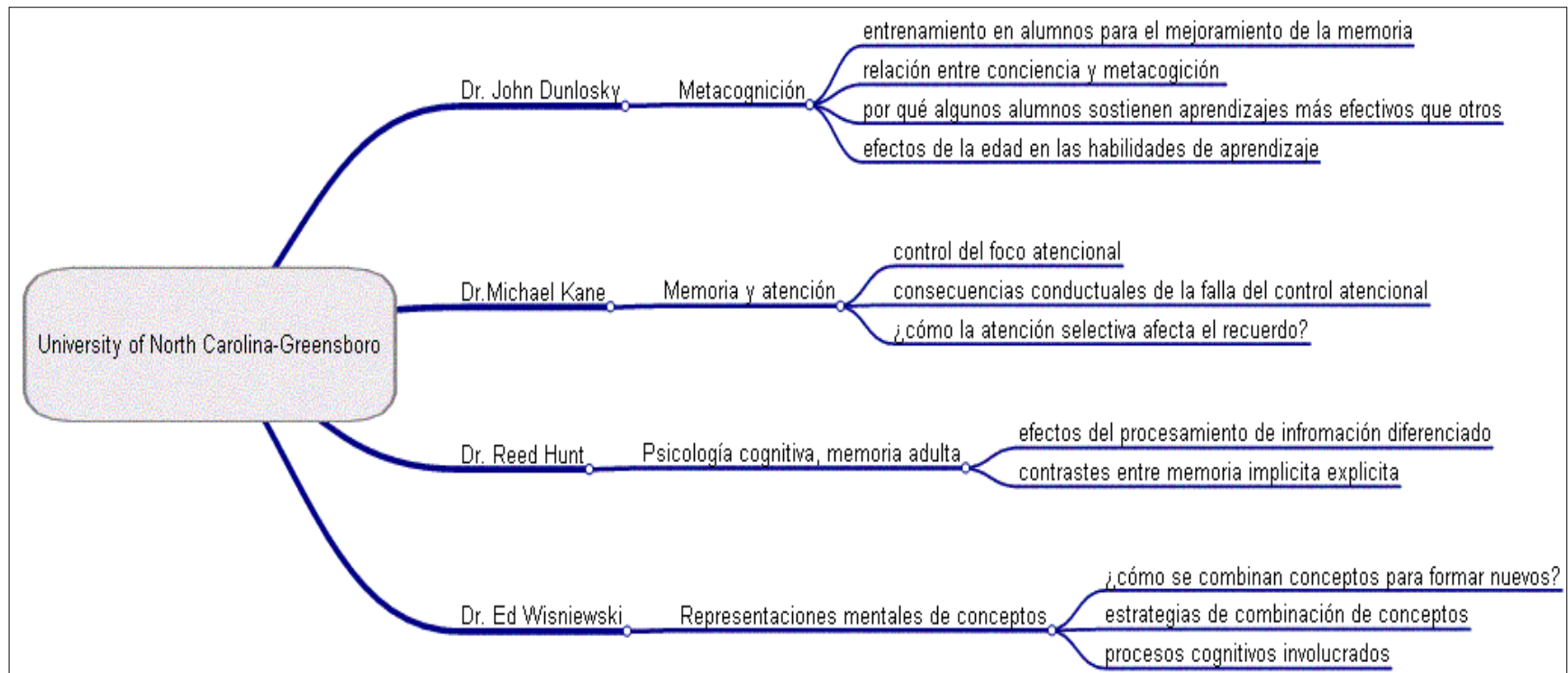


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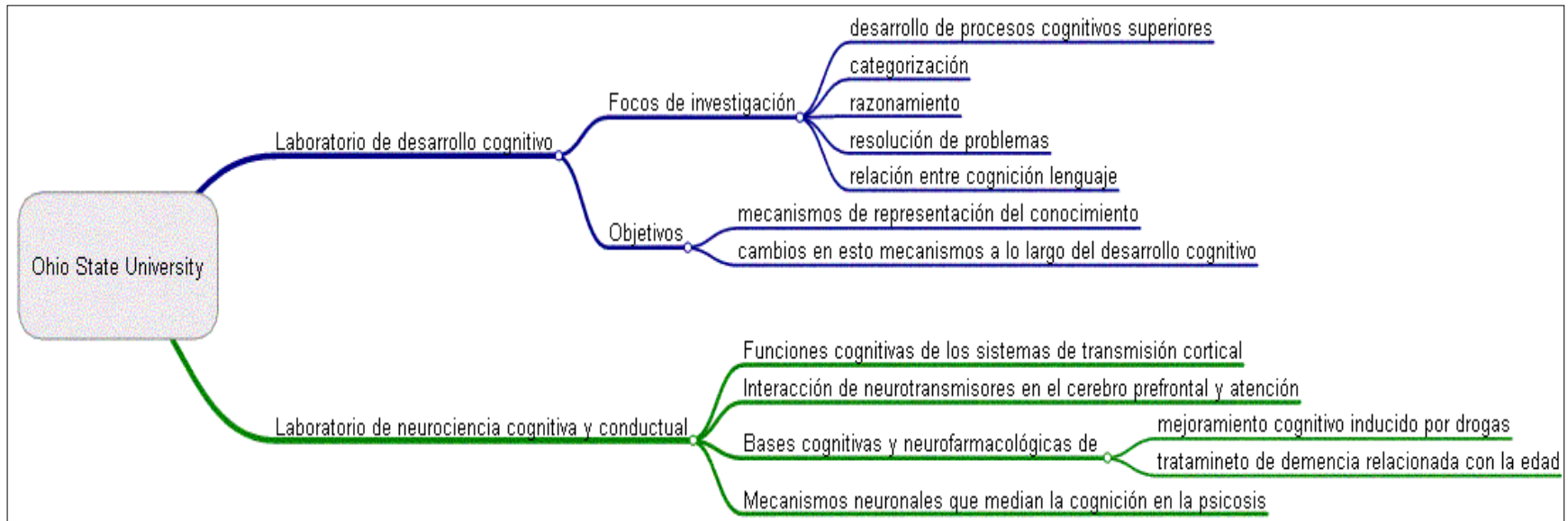


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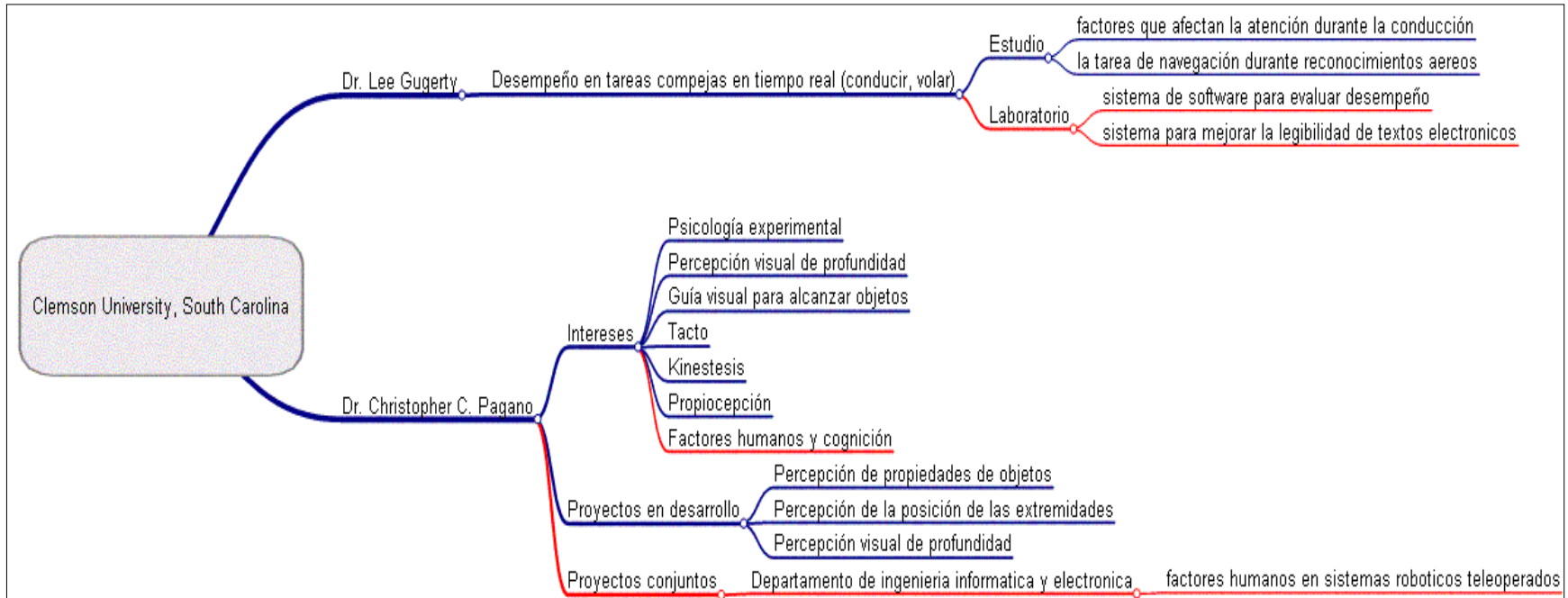




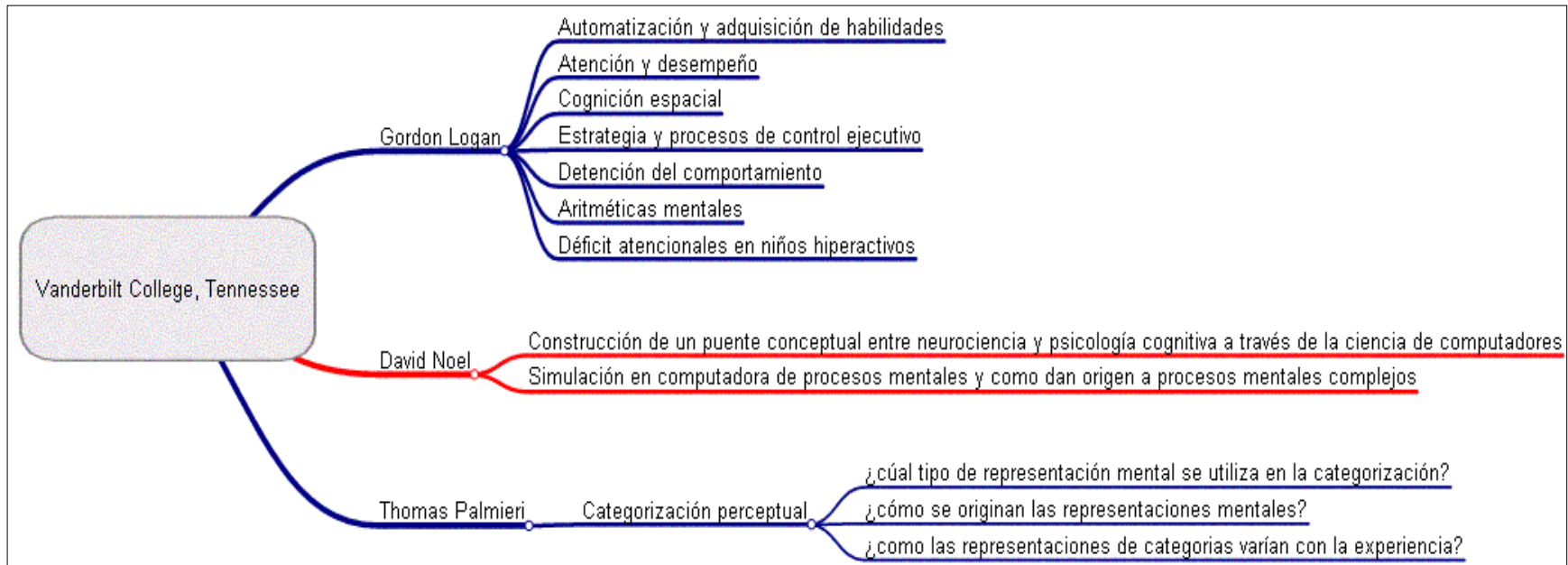
Ohio State University



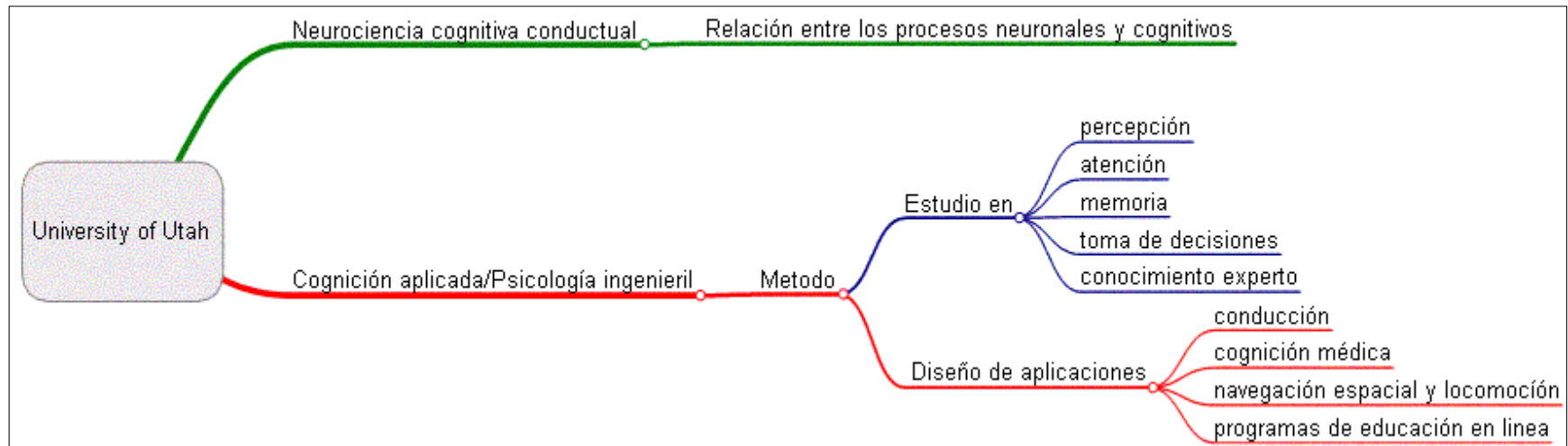
Clemson University, South Carolina



Vanderbilt College, Tennessee



University of Utah



Universidad de Deusto, España

