PsychTable.org: The Taxonomy of Human Evolved Psychological Adaptations

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Abstract We announce the launch of PsychTable.org, a collaborative web-based project devoted to classifying and evaluating evolved psychological adaptations (EPAs), geared toward researchers, educators, students, and the general public. The website works by aggregating citations which support or challenge the existence of each purported EPA, using a mathematical algorithm to assign an evidentiary strength score to each, and generating a table which represents the current but ever-changing state of the empirical evidence. Citations are added and assigned evaluative ratings by both general users and an international community of expert contributors; as such, the content of the site will represent the consensus of the scientific community and new research opportunities. PsychTable has features for achieving empirical meta-goals such as quality control, hypothesis testing, cross-disciplinary collaboration, and didactic utility. Additionally, PsychTable will help adjudicate arguments within the field by providing a one-stop resource to display which proposed EPAs have strong empirical support and which others are relatively lacking in evidence.

Keywords Classification · Taxonomy · Web-based scientific collaboration · Evolutionary psychology · Evolutionary behavioral sciences

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Introduction

The timing is right to establish a classification system for human evolved psychological adaptations (EPAs). Several factors have coalesced to create a unique opportunity to develop a taxonomy that will facilitate the expansion of a culture of both synthesis and empirical rigor in the evolutionary behavioral sciences, including disciplines such as evolutionary cognitive neuroscience, behavioral ecology, "evo-devo," primatology, evolutionary anthropology, human ethology, genetics, and others.

These aforementioned factors include: a large international body of research describing hundreds of amassed EPAs; a global research community of evolutionary behavioral scientists that recognizes the importance of both synthesis and classification; the ascent of evolutionary psychology as a controversial but internationally recognized scientific discipline; an explosion in web-based scientific collaboration and social networking; a well-developed Internet infrastructure and an abundance of affordable computing power; an increasing pool of capital available for research funding in the evolutionary behavioral sciences; the existence of role models of evolutionary behavioral scientists who are worthy of emulation; the rapid proliferation of other web-based taxonomies as exemplars of best practices in classification and database management; a global network of universities and research groups that support the discipline; and the emergence of a new, younger, and proactive core of both researchers and students who are passionately pursuing opportunities to advance the evolutionary behavioral sciences.

An important milestone in the maturity of a discipline's scientific program is the taxonomic synthesis and classification of the observed entities (taxa) that have been discovered so far, as in *Gray's Anatomy* for medicine and physiology, Mendeleev's Periodic Table of Elements for

chemistry, the Diagnostic and Statistical Manual of Mental Disorders for psychiatry, and so on. Classification systems enable the organization and labeling of entities under observation within a discipline, so that scientists can communicate with each other, plan research studies more effectively, and utilize a common terminology to describe the empirical phenomena under study.

Evolutionary psychology, in its broadest definition, is a biosocial–scientific endeavor which analyzes human (and nonhuman) psychology through the lenses of biological evolution. One of the empirical objectives of the discipline is to discover and examine EPAs—also known in the field's literature as mental mechanisms or *modules* (Barrett and Kurzban 2006)—in human nature (Schmitt and Pilcher 2004). However, the discipline has yet to possess a classification system of its own (Mills 2003). Hence, the primary objective of this paper is to map out the vision of PsychTable.org, the world's first taxonomy of human evolved psychological adaptations.

Given current Internet technology and the field's substantial body of literature today, the logistics of creating a taxonomy on such a large scale are now finally possible. This paper proposes the creation of a web-based taxonomy of human evolved psychological adaptations. The PsychTable taxonomy has five broad purposes:

1. To classify the observed taxa (EPAs) that have been discovered so far
2. To aggregate both supporting and negative findings for proposed EPAs, and thus evaluate the strength of evidence for each in a more objective way than is currently available
3. To propose empirical evidence and studies that support and challenge the existence of individual EPAs, and highlight where further research is needed
4. To educate the general public, critics, and skeptics about the evolutionary social sciences by providing open access to information about which EPAs have been discovered and the evidence for them so far
5. To enhance a culture of synthesis in the international research community by raising the importance of classification as a force multiplier for research breakthroughs, Web-based scientific collaboration, and interdisciplinary consilience

PsychTable.org will be an interactive, user-friendly classification system which aims to organize empirical evidence that supports and challenges purported evolved psychological adaptations, and presents them all in one neutral, authoritative location on the Web for further examination, hypothesis testing, dialogue, criticism, and

investigation. The data underlying PsychTable will consist of existing, publicly available citations of published, peer-reviewed articles. These studies and abstracts can be accessed online via ISI Web of Knowledge, SciVerse, Google Scholar, and related academic databases. PsychTable aggregates these citations using an algorithm to evaluate the strength of support for each proposed EPA and generates a graphical table which will serve as both a reference tool and a snapshot of the currently available evidence within the field.

Scientists, educators, students, contributors, and the general public will be able to use PsychTable.org to:

- Explore detailed descriptions of hundreds of proposed EPAs
- Connect directly with a worldwide community of scientists, educators, students, contributors, and the general public
- Propose empirical evidence and studies that support or challenge the existence of individual EPAs
- Easily evaluate the existing literature to determine how robustly any purported EPA is empirically supported
- Help compile individual dossiers that profile individual EPAs' neurolocalizations, neurochemical substrates, elicitors, outputs, and so on
- Nominate hypothesized EPAs that may be substantiated or appear in the future via emerging research
- Gain rapid insight into which areas of evolutionary social scientific research are open to further empirical inquiry
- Provide a helpful web-based study tool for students

PsychTable as a Tool for Settling Empirical Debates

Evolutionary psychology's cultural, religious, and political controversies are well documented among academia and the general public (Barrett and Kurzban 2006; Geher 2006). In addition, elements of evolutionary psychology are also still empirically controversial within the biosocial sciences, with scholarly critiques by some biologists and psychologists asserting that certain basic assumptions and tenets of evolutionary psychology are empirically unsupported (Barrett and Kurzban 2006). Further, a broad definition of "evolutionary psychology" which includes all evolutionary approaches to understanding the mind has often been neglected in favor of a narrow definition which refers only to certain research programs within evolutionary perspectives on behavior (Wilson 2009), further fragmenting the body of research in this domain. Therefore, beyond descriptive collections of EPAs and their biological components, PsychTable will allow researchers and contributors to aggregate studies and

evidence from across the spectrum of the evolutionary behavioral sciences to classify the adaptations that have been soundly supported, as well as call attention to those which may be lacking in empirical support. In this way, the project will help researchers debate and empirically evaluate which psychological phenomena are evolved adaptations and which are not, irrespective of formal academic boundaries.

Based on the number, relevance, and quality of user-added citations, PsychTable uses an embedded mathematical algorithm to automatically assign an evaluative peer-review score to each EPA's evidentiary breadth and depth. Therefore, even critics and skeptics who reject, to various extents, the claims and findings of evolutionary psychology should appreciate the project's promotion of scientific scrutiny and debate—indeed, one of the consequences of aggregating published evidence to support or refute purported EPAs will inevitably be the revelation that some or many mental mechanisms proposed and even accepted in the evolutionary psychology literature will not pass empirical muster. We therefore view PsychTable.org as the first step toward a novel meta-empirical solution to some of the challenges that evolutionary psychology faces from within the biological and social sciences.

Background

PsychTable is based largely on the proposal of Balachandran (2011) to create a classification system for human evolved psychology. The first known attempt at a taxonomy for EPAs was originally made by Mills (2003), who proposed a classification system for EPAs that included a "list of ancestral problems and subsequent putative mechanisms." PsychTable includes these descriptive items, as well as features for achieving empirical metagoals such as quality control, hypothesis testing, cross-disciplinary collaboration, and didactic utility.

PsychTable's classification system uses as its basis the ranking system of Schmitt and Pilcher (2004) for evaluating whether a psychological trait qualifies as an EPA. Schmitt and Pilcher (2004) recommend that to support the claim for an EPA, evidence must be marshaled from eight disciplinarily diverse lines of support: theoretical, psychological, medical, genetic, physiological, phylogenetic, hunter-gatherer, and cross-cultural evidence.

The Schmitt–Pilcher framework then assesses each potential EPA against two sets of standards: evidentiary breadth and evidentiary depth. Evidentiary breadth is described as how many aforementioned lines of evidence a

hypothesized EPA possesses. For example, Schmitt and Pilcher (2004) tentatively propose that:

> …having one box of adaptation evidence should be considered a "minimal" level of evidentiary breadth. Two or three boxes in a nomological network should be considered "moderate" evidentiary breadth. Four or five boxes of evidence should be considered "extensive" evidentiary breadth, and six or more boxes should be considered "exemplary" evidentiary breadth. (pp. 646–647)

Lastly, evidentiary depth is described as the *quality* of the research studies marshaled as evidence for the existence of a given EPA. For example, Schmitt and Pilcher (2004) suggest that within each line of evidence, a "minimal" level of evidentiary depth might be the appropriate ranking for single studies with one mode of measurement, poor methodological control, and unrepresentative sampling. "Moderate" levels of evidentiary depth might be the appropriate ranking for at least two studies with more than one mode of measurement, good levels of control, and good sampling techniques, while "'extensive" levels of evidentiary depth might be the appropriate ranking for numerous studies with more than two modes of measurement, high levels of control, and high sampling quality. Finally, "exemplary" levels of evidentiary depth might be the appropriate ranking for lines of evidence with dozens of studies with multiple modes of measurement, the highest levels of control, and true representative sampling.

PsychTable.org uses this framework as the basis for a systematized evidence evaluation system, as described in detail below. It should be noted that all details regarding PsychTable's operation and functioning are subject to change, both as a result of practical considerations as the site is developed, and in response to feedback from the scientific community; as the project will be a tool for widespread collaborative use, its developers are necessarily sensitive to the needs and opinions of those who will help create and benefit from it.

How PsychTable Works

PsychTable is built on a Drupal-based framework for online content management, modified to fit needs of the EPA classification system. Drupal is an open-source web application written in the scripting language PHP, using a MySQL database. The web application allows for customized levels of access, administration, and content management. Drupal's modular design also permits easy distribution of PsychTable's data through XML, a cross-platform standard.

Fig. 1 PsychTable.org homepage, featuring table of EPAs
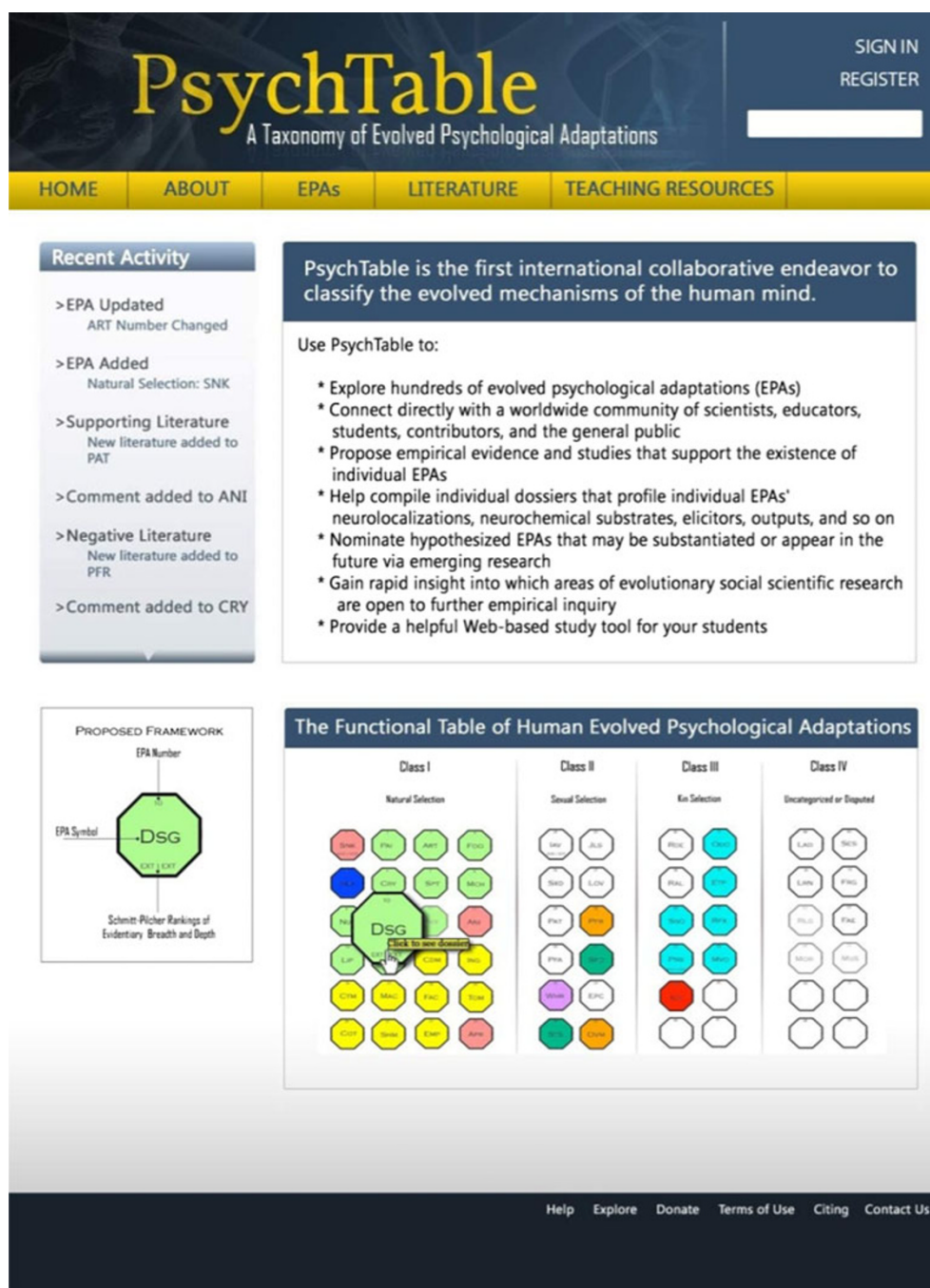
The Homepage

Figure 1 is a tentative sketch of how the PsychTable.org homepage will look. Upon opening the website, users will be able to click on any of the menu buttons at the top of webpage to view site information, a FAQ, and tutorials via the *About* page; individual taxa via the *EPAs* page; shared bibliographies via the *Literature* page; as well as educational handouts and multimedia via the *Teaching Resources* page. Sections may be added or modified as the site is developed. The live activity ticker on the left side of the page displays user activity, discussion comments, site updates, citations, and changes made to taxa in the form of a real-time newsfeed.

In the center of the homepage, users can view the entire classification table of EPAs. This table is the graphical output of PsychTable's data and citation algorithms (detailed below). Each EPA's assigned number, three-letter abbreviation symbol, and evaluative rankings of its evidentiary breadth and depth are displayed "up front" on the table. The current version of the table is

based upon the initial project plan by Balachandran (2011), and alternate, information-rich revisions are possible and likely as the project unfolds. By clicking on individual EPA symbols, users can drill down into dossier-style descriptions and related multimedia for each EPA.

EPA Dossiers

Inspired by taxonomic best practices, the tentative classification system described in this paper proposes that each EPA on PsychTable be assigned a three-letter symbol, a functional class, and a classification number, similar to the Periodic Table of the Elements. In addition, each EPA's putative functions in the ancestral environment; neurolocalization; neurochemical substrates; elictors; and behavioral, cognitive, or physiological outputs will be displayed, as well as an appended list of past and emerging interdisciplinary studies for updating and revision whenever relevant research and dialogue emerges.

An example of such a dossier is provided in Fig. 2. On this sample dossier for one EPA, core disgust, users can view and propose changes to the taxon's putative functions in the ancestral environment, neurolocalization, and so on. Most importantly for the information structure of the site, eight clickable tabs each display one of the diverse lines of support from the evidentiary framework of Schmitt and Pilcher (2004): theoretical, psychological, medical, genetic, physiological, phylogenetic, hunter-gatherer, and cross-cultural. Selecting a tab brings up all the supporting and challenging citations within that line of evidence which have been contributed to PsychTable by its users, along with a literature rating for each, and an aggregated strength subscore for that line of evidence (see following section). Clicking a citation takes the user to a page for that citation, featuring full bibliographic information, an abstract, and contributor ratings and comments.

Contributors and the Rating System

Within each EPA dossier, users will find citations of research studies which support or challenge the existence of that EPA. These citations make up the core of PsychTable's content. As in the Linnean Encyclopedia of Life (http://www.eol.org), citations are user-generated—that is, added by expert contributors, researchers, educators, students, and the general public. Users have varying levels of access to add or rate research studies/citations and edit information on the site based on their expertise in pertinent fields (see Table 1). Potential expert contributors submit resumes or CVs along with a letter of interest and may be given curatorial levels of access, while members of the general public will not have the ability to edit or add citations but may submit comments or proposals

regarding dossier content that the curators or project leaders can take into consideration.

PsychTable's evidentiary evaluation process functions as follows: a member of the site who has curator access or higher enters the dossier page for a particular EPA and may rate existing citations and/or add new ones. When adding a new citation, the curator includes an external weblink to the citation for validation purposes, chooses whether it supports or challenges the existence of the EPA in question, selects which of the eight Schmitt and Pilcher (2004) lines of evidence the study speaks to (a single study is allowed to fulfill multiple lines of evidence), and assigns the study a rating, on a scale from 0 to 100, for each line of evidence the study addresses. This rating is based on how robustly or conclusively the citation either supports or challenges the existence of the EPA within that line of evidence, with respect to the study's methodology, rigor, rationale, results, or conclusions. For example, a single study may—in the mind of a curator—provide fairly strong theoretical rationale and moderate cross-cultural support for a particular EPA but weak support for physiological mechanisms. Thus, the curator might choose to assign this citation a score of 85 for supporting theoretical evidence, a score of 60 for supporting cross-cultural evidence, and a score of 15 for supporting physiological evidence. A single study may, of course, contain both supporting and challenging evidence; in our example, the curator may decide that this same study also makes a fairly convincing case *against* the genetic evidence for adaptation and thus may give this study a 75 for negative genetic evidence. Supporting and negative citations within a line of evidence are differentiated graphically with positive or negative signs (see Fig. 2).

In addition to rating new citations s/he has contributed, the curator can also rate existing citations (i.e., those added by other curators). The following mathematical algorithm is suggested as a method of aggregating the ratings from various curators and outputting the final table (note again that these formulae are open to modification as the project develops).

Mathematical Algorithm for Evaluating the Existence of EPAs

Each citation within a particular line of evidence for a particular EPA is given two aggregate literature ratings, one for its supporting citations (E_i^+) and one for its challenging citations (E_i^-), where E denotes the specific line of evidence (see Table 2) and i indicates an individual citation.

E_i^+ is calculated for each citation as the mean of all supporting scores plus the median of all supporting citation

Fig. 2 Dossier for an individual EPA, showing individual citations and scores

Table 1 Possible membership levels and capabilities

Each role also has the capabilities of all those below it

Proposed role	Proposed capabilities
Senior curator	Appoint curators, change dossier information
Curator	Review/manage ratings and proposed changes, approve contributors
Associate curator	Add or rate citations
Contributor	Comment, propose changes

Table 2 Lines of evidence symbols used in algorithm

T	Theoretical
P	Psychological
M	Medical
Z	Physiological
G	Genetic
Y	Phylogenetic
H	Hunter–gatherer
C	Cross-cultural

scores, all divided by 2. E_i^- is calculated similarly except using challenging citation scores:

$$E_i^+ = \frac{\text{mean}^+ + \text{median}^+}{2}$$
$$E_i^- = \frac{\text{mean}^- + \text{median}^-}{2}$$

Next, an overall supporting and overall challenging subscore (E^+ and E^-) for each line of evidence within the EPA are created by using the maximum supporting score (i.e., the citation with the highest E_i^+ score) and maximum challenging score (i.e., the citation with the highest E_i^- score), respectively, from all citations within that line of evidence. A total subscore for each line of evidence (L_E where E, again, represents the specific line of evidence as in Table 2) is then calculated as follows:

$$L_E = \frac{(E^+ - E^-)\sqrt{\frac{N_{E^+}}{2}}}{\sqrt{E^- + 1}}$$

where N_{E+} is the number of supporting citations in line of evidence E. L_E is artificially constrained between 0 and 60, so for all negative values, $L_E = 0$; for all values greater than 60, $L_E = 60$. The psychology subscore, L_P, is shown in Fig. 2 for core disgust.

An evidentiary depth score, D, for each EPA—a quantitative version of the standard proposed by Schmitt and Pilcher (2004)—is calculated by aggregating all line of evidence scores as follows:

$$D = \frac{L_T + L_P + L_M + L_Z + L_G + L_Y + L_H + L_C}{N_L}$$

where N_L = the number of lines of evidence with at least one supporting citation; i.e., evidentiary depth equals the average scores of all available lines of evidence; D necessarily has a maximum value of 60. A nonquantitative Depth label is displayed on each dossier and EPA symbol (see Fig. 2) and is based on the quantitative depth score D as follows: 1–10 = minimal (MIN), 11–25 = moderate (MOD), 26–45 = extensive (EXT), 46–60 = exemplary (EXE).

An evidentiary breadth score, B, for each EPA—a quantitative version of another standard proposed by Schmitt and Pilcher (2004)—is calculated as follows:

$$B = 5 \times N_{E>15}$$

where $N_{E>15}$ is the number of lines of evidence in which $E^+ - E^- > 15$ (i.e., in which the rating of the strongest supporting citation is more than 15 points greater than that of the strongest challenging citation). As there are only eight lines of available evidence, B necessarily has a maximum of 40 and a minimum of 0. Note that the arbitrary value of 15 may be raised or lowered in the future to tighten or relax the criteria for evidentiary breadth. A nonquantitative breadth score is displayed on each dossier and EPA symbol (see Fig. 2) and is based on the value of $N_{E>15}$ as follows: 1 = MIN, 2–3 = MOD, 4–5 = EXT, 6–8 = EXE.

Finally, a total score (S) for each EPA is calculated by simply summing the breadth and depth scores:

$$S = D + B$$

The maximum obtainable score for each EPA is thus 100 (shown in a gold box for the example EPA in Fig. 2). The strength of an EPA's final score relative to that of other EPAs will be graphically demonstrated in the final table output (as shown in Fig. 1) by varying opacity of each EPA's clickable symbol on the table. A minimum score criterion will also be set, such that purported EPAs scoring below this value are considered "unsupported" and will not show up on the table. These unsupported EPAs will be accessible via their own section of the website, where users can browse which proposed modules have thus far failed to pass scientific muster; this section can also serve as a guide for future research, as it suggests where more data may be needed. This minimum cutoff score can be raised as time goes on and more data is added to the site, to gradually increase the standards of rigor.

Implications of the Evaluative System

Since EPA scores on PsychTable are essentially peer-review ratings by a trusted community of expert scientists, the content of the site will represent the current (and ever-changing) state of the empirical evidence, as well as the evolving consensus of the scientific community. As in Wikipedia, users can also engage in discussions and debates about each EPA via the site's commenting system.

Though intense confrontations, "trolling," and flame wars are possible negative byproducts of an open-access taxonomy, herein lies the strength of this type of system if an international collaborative framework is achieved: every evolutionary behavioral scientist has his/her subdiscipline of the biological or social sciences and his/her own focused area of research; thus, each brings his/her own expertise to the task of collectively filling in the dossiers for each EPA. Soliciting research volunteers to focus on specific EPAs and present their findings online would help bring in the entire intellectual community of stakeholders vested in the process of both classification and empirical evaluation.

Additional Features of the Website

Additional website elements may include: space for users to propose empirical evidence and studies for each EPA; space for users' comments, debates, and discussions; and RSS feeds for live, real-time updates of key contributions to the site. At some point, the site will also be opened to web developers for the creation of third-party applications, tools, and educational application programming interfaces. The website will be translated to multiple languages for a global audience, and will draw from best practices in taxonomy and database design, web-based social networks, and online content management.

In the future, we anticipate additional features on PsychTable.org, including (but not limited to): brain images of associated neuroanatomical structures for each EPA, phylogenetic trees showing likely evolutionary histories of each EPA, a section exploring the genetic underpinnings of each EPA, and models of developmental/environmental variance of the phenotypic expression of each EPA. Additionally, the evaluative system could utilize more objective statistical measures of published studies such as significance values and effect sizes to complement the current peer-reviewed rating system.

Endorsements and Recognition So Far

This project's vision has so far been officially endorsed by three large academic organizations: The Evolutionary Studies Consortium, the Northeastern Evolutionary Psychology Society (the regional sister organization of the Human Behavior and Evolutionary Society), as well as the Applied Evolutionary Psychology Society. It has also received praise from roughly 25 distinguished evolutionary behavioral scientists and philosophers of science, including Steven Pinker, Robert Kurzban, Michael Mills, Donald E. Brown, Glenn Geher, Mark van Vugt, David Buller, Robert Trivers, and others. We welcome new endorsements from additional academic organizations, scholarly societies, institutions, and individuals as well.

Benefits to Scientists and the General Public

By maximizing the collective brainpower of the global research community, PsychTable can facilitate scientific breakthroughs that can energize academic research groups, generate funding and jobs, create new research opportunities, stimulate innovations in education, and contribute vitality, cross-disciplinary dialogue, and consilience within the research community.

PsychTable can serve as a focal point for the emerging global culture of Web-based scientific collaboration. Additional benefits of the website to both scientists and the general public include:

- A central location of all EPAs and their details for easy reference and comparison
- A snapshot of the current state of knowledge in the field
- Arbitration of debates about the existing evidence for any EPA
- A place for students to explore and study EPAs for exams or research
- Revelation of new research opportunities, e.g., which areas are open to empirical inquiry
- Connections between an international community of scientists, teachers, students, and general public
- An opportunity for critics to debate, engage, find contrary evidence, and display it on the site if they disagree with the existence of EPAs on empirical grounds
- A resource for the general public to learn the evidence for EPAs
- An authoritative location for researchers to showcase and discuss the EPAs they have discovered or are studying
- A road map of the human mind which can inform applied scientific fields, from clinical psychology to artificial intelligence

PsychTable will be an invaluable interdisciplinary resource for investigators from multiple disciplines. By synthesizing and classifying the wide-ranging, multidisciplinary, and somewhat balkanized literature on EPAs, the proposed classification system aims to bring quality control, a taxonomic approach, and consilience to the evolutionary social sciences.

Whither Taxonomy?

PsychTable.org is a comprehensive online collaborative effort to amalgamate the existing data in one place for reference. It deploys a cohesive, unified system that can enable great leaps forward in research, and it brings together many of the distinct disciplines that have been attempting to answer larger evolutionary questions of human behavior, often using very different vocabularies, methodologies, and theoretical frameworks. The interdisciplinary evaluative system will be especially useful for calling attention to potential areas for new research, which will be an invaluable resource for investigators from multiple disciplines.

Of course, the website's current operating plan described here is only our own version of the proposed taxonomy, and the future versions 2.0, 3.0, 4.0, 5.0 and so forth are most likely going to look very different several years or decades

from today. For the taxonomy to be effective, it must grow and evolve from an international collective effort of many minds. Therefore, we trust that this taxonomy is, at the very least, a good starting point for a mass collaborative endeavor designed to refine it. Any needed improvements will most likely be executed by the collective brainpower of the interdisciplinary evolutionary behavioral sciences community over time.

The evolutionary study of human behavior is necessarily interdisciplinary, and a full understanding of the interactions involved requires knowledge and expertise from evolutionary, developmental, cognitive, comparative, and social psychology; genetics, zoology, and neurobiology; as well as anthropology, behavioral ecology, human ethology, primatology, and a number of other related disciplines. PsychTable is devoted to the synthesis of knowledge across disciplines toward furthering evolutionary science, and aims to be the best available forum for uniting researchers from diverse fields to work toward a greater understanding of humanity.

We join evolutionary behavioral scientists of all disciplines in calling for effective meta-empirical solutions to addressing both political and empirical controversies. The project's aim is to become the first successful international collaborative endeavor to classify the evolved psychological adaptations of the human mind. Specifically, PsychTable will amalgamate the existing data on EPAs in one place for instant reference and a quick look at the state of knowledge in the evolutionary social sciences, which would be especially useful for examining potential areas for new research.

PsychTable is currently in its alpha stage of development, with a working beta version expected to be available by late 2012. We are planning for the future growth of the project on an international level, especially regarding how to increase empirical rigor, credibility, didactic utility, access for the general public, and other web-based collaborative activities. We welcome partnerships with universities and scientific institutions, scholarly societies, charitable foundations, research groups and labs, individual scientists, and enthusiastic volunteers, as well as funding in order to establish a rigorous, sophisticated website that can handle the large amount of data and programming required for an effective interactive taxonomy.

By classifying, evaluating evidence, and revealing clear pathways for new research, we trust that what we have proposed here could literally revolutionize the way research is done in the social and biological sciences. Educating the broader global public about the evidence for mankind's shared collective consciousness would help to move civilization forward in terms of understanding humans' origins and place in nature, as well as working towards making the Earth a better place to live.

References

Balachandran N. A proposed taxonomy of human evolved psychological adaptations. J Soc Evol Cult Psychol. 2011;5(3):194–207.

Barrett HC, Kurzban R. Modularity in cognition: framing the debate. Psychol Rev. 2006;113:628–47.

Geher G. Evolutionary psychology is not evil! (…and here's why…). Psychol Top. 2006;15(2):181–202.

Mills M. Toward a classification of human psychological adaptations. Poster presented at: 15th Annual Conference of the Human Behavior and Evolution Society. 2003 June 4–8; Lincoln, NE.

Schmitt DP, Pilcher JJ. Evaluating evidence of psychological adaptation: how do we know one when we see one? Psychol Sci. 2004;15:643–9.

Wilson DS. Evolutionary psychology and the public media: Rekindling the romance [Internet]. Huffington Post. 2009 Available from http://www.huffingtonpost.com/david-sloan-wilson/evolutionary-psychology-a_b_220545.html. Accessed 30 May 2012.