

The Human Affectome Project

Author Invitation



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Introduction

“Neuroqualia” is an all-volunteer, public-interest, non-profit non-governmental organization that is focused on one of the most challenging problems in affective science. Our mission is to develop an integrated and holistic model of affect (i.e., one that can coherently map the complete landscape of feelings and emotions to individual needs, motivation, attention, arousal, and behavior).

To that end, The Human Affectome Project has been launched to produce a significant cross-disciplinary academic collaborative effort to achieve this goal. The initiative will use a unique starting point which involves a rough taxonomy produced with the largest known compilation of “feeling” words in the world (nearly 4000 descriptors). The initial organizing of these terms and definitions has resulted in a surprisingly coherent framework of more than 100 discrete sets of feelings that describe the state of various dimensions of well-being across five basic domains (i.e., physiological, self, social, planning, and acting). The state of each of these aspects of well-being can be directly related to four universally-evoked emotions (i.e., fear, happiness, sadness, and anger). Hedonics are tied to the state of these dimensions and the needs that arise when their status is outside an individual’s comfort zone serve to focus attention and motivate behaviours (in a process that encompasses additional, unique categories of feelings).

Indeed, this initial framework offers considerable explanatory power for the field of affective research, but this preliminary taxonomy is only a rough framework that needs to be vetted, refined and fully reconciled with our current understanding of these domains (i.e., via psychology, sociology, neuroscience, etc.). The goal of this project is therefore to develop a basis for agreement on basic terminology and definitions in the field and then to tie those constructs to our current understanding of how these systems work and the underlying neurobiology that supports the experiences that we report. In the end, it is our hope that a highly refined model of affect will be produced, one that will have utility and relevance for years to come.

You are receiving this invitation to participate in task force because your expertise in an area is relevant to the project and because of your track record in the peer-reviewed literature. If you are potentially interested in being involved in this project, please read the remainder of this document for the details.

I want to personally thank you for considering this opportunity and hope that you will choose to participate.

Sincerely,



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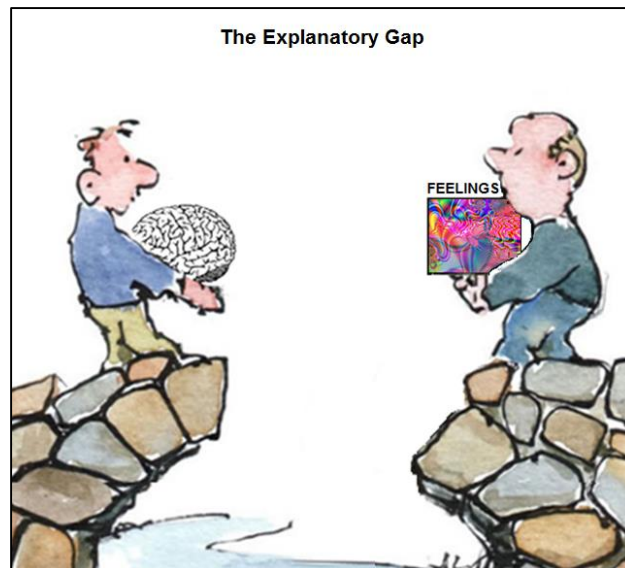


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***Note that brief bios for these advisory board members can be found at the end of this document*

Background

Cartesian dualism was introduced in the 17th century and it has been an incredibly persistent idea. Thomas Nagel captured one aspect of this legacy in “What is it like to be a bat” (1974) where he noted that subjective experiences are so unique that they appear to defy reduction. Similarly, Joseph Levine argued in 1983 that functionalist theories of mind could not be used to explain qualia (i.e., the unique and individualized feelings that accompany experience) calling this an *explanatory gap*. And David Chalmers most famously called this the “the hard problem” of consciousness” (1995) writing that “*It is widely agreed that experience arises from a physical basis, but we have no good explanation of why and how it so arises. Why should physical processing give rise to a rich inner life at all?*” In essence, this has been the basis longstanding academic debate between those who believe that a reductionist framework of analysis will never explain the unique nature of qualia and those who remain quite certain that the field of (affective) neuroscience will eventually reveal all.



However, in the past few decades the level of interest in research related to emotions and feelings (an area that had long been neglected) has increased to the point that the science is now advancing quite quickly. The recent review by Damasio and Carvalho (The nature of feelings: evolutionary and neurobiological origins, *Nature Reviews Neuroscience* **14**, 143-152, February 2013) illustrates just how far this interdisciplinary field has moved. But at this point, the challenge will be to avoid the silos that can be created when a very complex problem is confronted. Research always demands specialization, but given the interconnected nature of the many sub-specialties within this field, a larger integrative project that can bring the many facets of research together will have considerable value.

In particular, there are two important issues in affective neuroscience that are currently creating challenges for researchers in the field. The first issue is the longstanding challenge of finding a robust functional model for emotions and feelings that can serve as a common focal point for research in the field. Although many models of emotion have been proposed, and many testable hypotheses have been generated¹, broad agreement in support of a single model has been elusive and many competing perspectives exist. Perhaps this sort of heterogeneity is healthy for discourse in any emerging field, but

this lack of agreement creates numerous challenges, not the least of which relates to common terminology. For example, precise definitions for the terms “emotion” and “feeling” have not been agreed upon, and although various attempts have been made to define a common set of emotions, no firm agreement has been reached so inconsistent constructs persist in the literature even at the most fundamental levels of analysis².

The second issue is the fractious standing debate over emotions as natural kinds. In 1990 Ortony and Turner challenged the belief that there might be neurophysiological and anatomical substrates corresponding to the basic emotions³. This perspective has been more recently championed by Barrett who has similarly argued that personal reports of basic emotions are not necessarily correlated with specific causal mechanisms in the brain and/or properties that are observable (on the face, in the voice, in the body, or in experience)^{4,5}. Panksepp has responded citing research that supports the existence of a variety of core emotional operating systems in ancient sub-neocortical regions of the brain, and arguing that these systems are primary-process ancestral birthrights of all mammals^{6,7}. But Barrett et al have continued to promote a psychological constructionist approach to emotion which has created a significant division within the field^{5,8}.

The Human Affectome project has been conceived to address both of these issues. While each issue represents a significant challenge in its own right, addressing the first issue (i.e., by developing a robust functional model for emotions and feelings that can serve as a common focal point for research in the field) will entail a substantive analysis of the evidence currently dividing the field on emotions as natural kinds. So there is good reason to believe that both issues can be addressed simultaneously.

References

- 1 Sander, D. in *The Cambridge Handbook of Human Affective Neuroscience* (eds J. Armony & P. Vuilleumier) (Cambridge University Press, 2013).
- 2 Izard, C. E. Basic Emotions, Natural Kinds, Emotion Schemas, and a New Paradigm. *Perspectives on psychological science : a journal of the Association for Psychological Science* **2**, 260-280, doi:10.1111/j.1745-6916.2007.00044.x (2007).
- 3 Ortony, A. & Turner, T. J. What's basic about basic emotions? *Psychological review* **97**, 315-331 (1990).
- 4 Barrett, L. F. Are Emotions Natural Kinds? *Perspectives on psychological science : a journal of the Association for Psychological Science* **1**, 28-58, doi:10.1111/j.1745-6916.2006.00003.x (2006).
- 5 Lindquist, K. A., Siegel, E. H., Quigley, K. S. & Barrett, L. F. The hundred-year emotion war: are emotions natural kinds or psychological constructions? Comment on Lench, Flores, and Bench (2011). *Psychological bulletin* **139**, 255-263, doi:10.1037/a0029038 (2013).
- 6 Panksepp, J. Neurologizing the Psychology of Affects: How Appraisal-Based Constructivism and Basic Emotion Theory Can Coexist. *Perspectives on psychological science : a journal of the Association for Psychological Science* **2**, 281-296, doi:10.1111/j.1745-6916.2007.00045.x (2007).
- 7 Panksepp, J. Cognitive Conceptualism-Where Have All the Affects Gone? Additional Corrections for Barrett et al. (2007). *Perspectives on psychological science : a journal of the Association for Psychological Science* **3**, 305-308, doi:10.1111/j.1745-6924.2008.00081.x (2008).
- 8 Lindquist, K. A., Gendron, M., Oosterwijk, S. & Barrett, L. F. Do people essentialize emotions? Individual differences in emotion essentialism and emotional experience. *Emotion* **13**, 629-644, doi:10.1037/a0032283 (2013).

The Approach

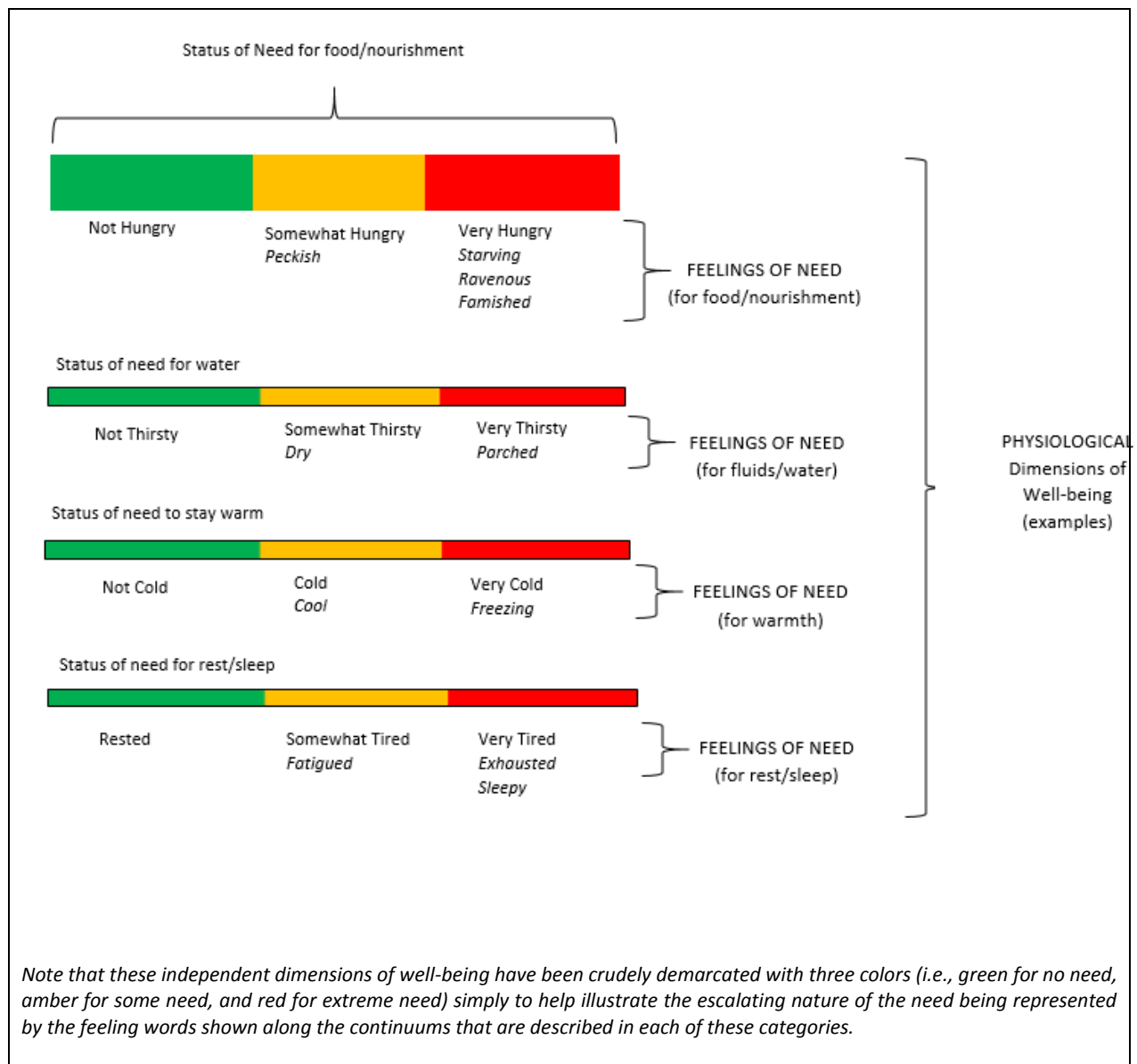
To address this issue, “Neuroqualia” was formed as a public-interest, non-profit NGO in 2014. We believe that we have a framework that can serve as a starting point for an integrated and holistic model of affect (i.e., one that can coherently map the landscape of feelings and emotions to individual needs, motivation, attention, arousal, decision-making and a wide range of related cognitive functions). This starting point has been vetted by our advisory board and it is our opinion that a conceptual breakthrough is needed to integrate and extend much of what has already been accomplished, so we have a collaborative framework in mind that should make this possible. We have dubbed this initiative “The Human Affectome Project” and we believe that success in this initiative will propel affective neuroscience forward, open up new lines of inquiry, attract new funding to the field, and have significant implications for the rapidly evolving field of artificial intelligence.

Specifically, it is our intention to organize a large taskforce of researchers from various sub-disciplines within the fields of affective research and neuroscience to take up this challenge. To that end, we have plans to spearhead a two-year initiative that will span the latter part of 2016, 2017, and the first half of 2018. The project will involve an initial workshop that will take place in Halifax, Nova Scotia on the 4th-5th August 2016 where researchers who are involved in the project will explore the initial framework and then engage in the production of a series of articles for a special issue of a top-tier neuroscience journal.

The Human Affectome Project will use a unique starting point to make headway that has not been achieved previously. The seed for the idea that resulted in this project began with nearly a decade ago and involved data collection which led the largest known compilation of “feeling” words in the world (nearly 4000 descriptors). These have now been roughly sorted and organized and matched with accompanying definitions. Despite the substantial breadth encompassed by these descriptors, the process resulted in a surprisingly coherent taxonomy of well over 100 discrete sets of feelings that describe the states of various dimensions of well-being across five domains (i.e., physiological, self, social, planning, and acting). Additionally, this initial taxonomy reveals that deficit states in each of these dimensions of well-being appear to be directly linked to four universally-evoked emotions (i.e., fear, happiness, sadness, and anger). Hedonics are tied to the state of these dimensions and when deficits exist in any of these dimensions, needs emerge (to achieve homeostasis), attention is focused and behaviors are influenced – see below:

Dimensions of Well-being

When one is confronted with nearly 4000 words that are commonly used to describe human feelings and emotions and then attempts to organize them into categories, it quickly becomes obvious that much of our affective vocabulary consists of language that describes the state of various dimensions of well-being. The diagram below illustrates how this is manifested in language. In the first instance, the status of our need for food/nourishment is articulated along a continuum that begins with “*not hungry*” at one extreme and *very hungry, starving, ravenous* and *famished* at the other extreme (with *peckish* and *somewhat hungry* shown in between and representing a middle state).



Domains of Well-being

As these types of feeling words are assembled into independent dimensions of well-being, and then further grouped into broader categories, they fall roughly into five major domains (i.e., physiological, self, social, planning, and acting) – see below.

PHYSIOLOGICAL	SELF	SOCIAL (HOW WE TREAT OTHERS)	SOCIAL (HOW WE ARE TREATED BY OTHERS)	PLANNING	ACTING
For Food/Nourishment	To be 'normal' (general)	To recognize others	To be recognized by others	To have Priorities/Goals	To be able to make sense of circumstances
To limit intake of food/nourishment	To be 'normal' (underweight)	To accept others (socially)	To be socially accepted	To have possible course(s) of act	To be able to make sense of location
For water/hydration	To be 'normal' (overweight)	To hear and understand others	To be heard and understood	To be able to choose a course of	To be able to make accurate predictions
To limit intake of water/hydration	To be 'normal' (size)	To like others	To be liked	To have confidence in path forward	To be proactive
To urinate	To be physically fit	To value others	To be valued	To have manageable task	To be organized
To defecate	To be gender-aligned (inclined to male)	To respect others	To be respected	To have capacity to act	To be ready
To stimulate bowels	To be gender-aligned (inclined to female)	To utilize others	To be utilized	To be ready	To have adequate time
To maintain a settled stomach	To be mature (enough)	To accept advice	To be heeded	To have adequate time	To have adequate time
For oxygen	To be youthful (enough)	To communicate clearly to others	To be communicated to clearly	To have adequate time	To have adequate time
To maintain a clear airway	To be attractive	To be socially stimulating	To be socially stimulated by others	To have adequate time	To have adequate time
To maintain sensory function	To be attractively dressed	To successfully persuade others	To be fully persuaded by others	To have adequate time	To have adequate time
For rest	To be graceful	To treat others honestly	To be treated honestly	To have adequate time	To have adequate time
To maintain strength	To be intelligent	To not harass or harm others	To be free of harassment	To have adequate time	To have adequate time
To maintain stability	To be knowledgeable	To not pressure others	To be free of harassment	To have adequate time	To have adequate time
To maintain physical mobility	To be sensiblewise	To not restrain others	To be free of harassment	To have adequate time	To have adequate time
To maintain mental coherence/clarity	To be self-confident	To not move/dislodge others	To be free of harassment	To have adequate time	To have adequate time
For sex	To be in harmony	To not suppress others	To be free of harassment	To have adequate time	To have adequate time
To heal (General)	To have good manners	To not suppress others	To be free of harassment	To have adequate time	To have adequate time
To heal (infection)	To be of acceptable social status	To not suppress others	To be free of harassment	To have adequate time	To have adequate time
To maintain nervous stability	To have self-control	To not suppress others	To be free of harassment	To have adequate time	To have adequate time
To maintain skin condition	To moderate	To not suppress others	To be free of harassment	To have adequate time	To have adequate time
To be clean (enough)	To moderate	To not suppress others	To be free of harassment	To have adequate time	To have adequate time
To minimize scent	To moderate	To not suppress others	To be free of harassment	To have adequate time	To have adequate time

****Note that this is a high level view of the framework; each of the individual dimensions of well-being in each of these categories contains many underlying feeling words.**

Deficit States and Universal Emotions

Comfort zones are an integral part of this model. As Panksepp has noted, “*emotional feelings (affects) are intrinsic values that inform animals how they are faring in the quest to survive. The various positive affects indicate that animals are returning to “comfort zones” that support survival, and negative affects reflect “discomfort zones” that indicate that animals are in situations that may impair survival*”¹. When considering the many independent dimensions of well-being that are described in the taxonomy above, it becomes clear that the comfort zone in each of these dimensions can vary considerably between individuals. But the fact that we have language to support extreme states of deficit within all of these individual categories of well-being is particularly useful, since a deficit state in any one of these dimensions (i.e., one that is outside of an individual’s comfort zone) appears to be linked directly to four universal emotions – as follows:

Fear – Anxiousness (mild state) and fear (extreme state) occur when there is a conscious or unconscious anticipation that one of these individual dimensions is going to end up in a state of deficit that is outside of the individuals comfort zone.

Sadness - Occurs when one or more of these individual dimensions is tending towards, or currently in, a state of deficit that is outside of the individuals comfort zone; or when anxiety or fear exists (i.e., there is a conscious or unconscious anticipation that one of these individual dimensions is going to end up in a state of deficit that is outside of the individuals comfort zone).

Happiness - Occurs when one or more of the individual dimensions that was/were tending towards a state of deficit and/or in a state of deficit and outside of an individual's comfort zone is/are altered such that the resulting need(s) has/have been met; or when anxiety or fear that existed is alleviated or extinguished or eliminated (due to a change in understanding or circumstances).

Anger – Can result when a loss occurs (usually caused by an external agent, i.e., someone or something) that results in one or more of these individual dimensions going into a state of deficit that is outside of the individuals comfort zone; or when a change in circumstances (usually caused by an external agent, i.e., someone or something) results in anxiety or fear (i.e., arising from a conscious or unconscious anticipation that one of these individual dimensions is going to end up in a state of deficit that is outside of the individuals comfort zone).

Given that all of these individual dimensions of well-being appear to be acting in a manner that is largely independent (of one another) and given that all are in various states at any given point in time, it should be noted that mixed emotions are fully anticipated in this initial framework.

Furthermore, each of these categories of well-being appear to be equally important. Any of them can be the primary drivers of motivation and behaviour at any given point in time if they are in deficit (i.e., outside of an individual's comfort zone). In other words, the four emotions that are mentioned above appear to operate on an interrupt-driven, priority basis. That is to say that the dimensions of well-being that are in the greatest state of deficit appear to be given priority.

Other Types of Feelings

Most of the remaining feeling words that exist within the English language relate to other categories of feelings that are not the same as feeling words that describe states of well-being – as follows:

- Feelings related to hedonics (e.g., *pleasure, pain* etc.)
- Feelings related to motivation (e.g., *apathetic, motivated*)
- Feelings related to the focusing of attention (e.g. *disinterested, attentive, focused, etc.*)
- Feelings related to attraction and repulsion (e.g., *attracted, repulsed, etc.*)
- Feelings related to states of arousal (e.g., *excited, despondent*)
- Feelings that relate to mirth, playfulness (e.g., *playful*)
- Feelings related to the direction of our thoughts (e.g., reflective versus expectant).

Words that relate to moods are different again, and speak mainly to the persistence and/or changing nature of the four emotions noted above.

The Initial Framework

Together, these various unique categories of feelings help us to clarify the nature of affective experience considerably, but it needs to be emphasized that the rough taxonomy that has been presented here is currently unpublished work. In essence, this is a linguistic starting for the Human Affectome Project and it is aligned with Gordon Allport's statement that psychology should reflect, "*the wisdom of common experience*". Although the underlying neurobiology may not adhere to the same structure, there are so many descriptors of feelings and emotion that when they are organized into groups of like kind, the similarities of like items, and the categories to which things belong, can be easily discerned. This is something that was not possible in the past so the framework should help us find an intuitive basis for agreement on fundamental terminology and vocabulary.

However, a second level of comparative analysis will also be crucial in this project since the function of the various components within the central nervous system are equally important and will need to be reviewed in light of this framework. So the reviews that are planned and the resulting synthesis will be clearly grounded in the neuroscience literature and the resulting work will be published in a peer-reviewed neuroscience journal. In other words, language will serve as our starting point, but the comprehensive functional model that will be developed will be carefully tied to what we know about the underlying neurobiology, and as such, the resulting framework should have broad utility for the field.

For example, the framework reveals more than one hundred independent variables that are tied to the same small set of basic emotions, which should allow researchers to produce much more nuanced experiments, and give clinicians better tools to understand the nature of emotional changes.

English Language Bias

It should also be noted that the linguistic starting point for this project is based on English language descriptors which is an approach that has definite limitations. First of all, even though a substantial number of feeling words were used to create this initial framework, this may not represent all of the feeling words that exist in the English language. Accordingly, The Human Affectome project will also incorporate the efforts of research specialists who are working in automatic or computer-aided analysis of large bodies of naturally-occurring language ("corpora") to help extend the framework.

More importantly, other languages may include additional constructs of relevance, but we will not attempt to include other languages in this initial framework in any sort of a comprehensive manner because the scope of this effort would quickly become unmanageable. However, there will be many people involved in this project who speak other languages, so we will be asking the teams to look for examples of constructs from other languages that don't exist in English. If examples can be found, these items will be gathered and shared in the work that results (for illustrative purposes). This will allow us to leave the door open for those who might wish to expand and/or refine the model using a comparable analysis in another/other language(s).

Emotions as Natural Kinds

It would obviously be a leap to assume that a linguistic model will be fully in alignment with the mechanistic underpinnings of affect within the central nervous system. Indeed, this is the essence of the arguments made by Ortony and Turner⁵ and of those more recently marshalled by Feldman-Barrett et al^{6,7}. So although a linguistics-based functional model might be useful to help us find common ground on definitions and terminology, a truly robust model will only emerge if it can also be reconciled with the neuroscience literature.

For example, Panksepp has argued that *cross-species affective neuroscience studies confirm that primary-process emotional feelings are organized within primitive subcortical regions of the brain that are anatomically, neurochemically, and functionally homologous in all mammals that have been studied*¹. So when each of the areas that are described within the model are reviewed, this experientially reported taxonomy will be compared with the state of the evidence that exists in the neuroscience literature and it will also include a review of the research that has been done on other mammalian species. This approach will ensure that any evolutionarily conserved biology that is relevant is identified and recognized as part of the project. This should allow the task force to speak authoritatively on the topic of emotions as natural kinds when the final synthesis is produced.

The Teams

Accordingly, “Neuroqualia” is now seeking expressions of interest from scientists who would be interested in being selected to join any of the twelve teams that will be producing the twelve reviews that are planned. The twelve main areas of depth that are encompassed within the taxonomy are as follows:

Dimensions of Well-being	Universal Emotions	Needs and Goals
Physiological Self Social Planning Acting	Fear Happiness Sadness Anger	Hedonics Motivation Attention

Once responses have been received, we will select and invite the strongest applicants to serve as team leaders (i.e., lead and/or corresponding authors for each of the reviews) using the following three criteria:

1. A demonstrated level of expertise in one of the twelve areas
2. A distinguished track record of peer-reviewed publications
3. A solid history of collaboration in the peer-reviewed literature

Once the team leaders have been selected, the remaining team members for each team will be invited to participate as well. The team member choices will be made in cooperation with the team leaders for each of the teams.

1. Domain Experts - The team leader for each of the twelve chosen topics will be a neuroscientist who will be supported by other experts who will collectively be responsible for producing a descriptive overview that encompasses the topic area, and any relationships that exist between that particular topic and the other topic areas under consideration. Given the scale of the framework that we will use as a starting point, the task of this group will be to produce a compact synthesis of the literature that focuses on the neurobiology as it is currently understood.

2. Interdisciplinary Approach – Ideally, each team will also have a number of other researchers (e.g., psychologists, sociologists, philosophers etc.) who can ensure that a truly interdisciplinary perspective emerges in each review. The field of affective science has benefited from the inputs of a wide range of contributors and it is therefore believed that each review will be improved with inputs and perspectives from a variety of relevant disciplines.

3. PhD Students and Post-doctoral Researchers – Each scientist who is selected to join the task force will also be able to nominate a single PhD student or post-doctoral researcher within their own lab to assist and participate in the team's work. These assisting researchers will also receive authorship recognition for their contributions to the team's review and the capstone article (i.e., two middle-authorships).

Consensus and Recommendations

The two-day workshop in Halifax (4th-5th August of 2016) will involve a full day of presentations, followed by a collaborative series of meetings on the second day that will give the teams an opportunity to consider the terms of the project, the proposed model, and the way forward. The goal of this project will be to gain consensus on an initial framework and then for each team to produce a detailed description of the domains that are encompassed by the framework, and to test the framework against the existing peer-reviewed literature.

The task force will also produce a fully integrated capstone article that will pull these pieces together with the goal of producing a landmark publication. All authors in the task force will therefore be involved with at least one review and in the writing of the capstone article, so every participant will have contributing author recognition in at least two articles.

Authorship and Outcome

Why take part in the Human Affectome Project? The first reward for participation in this unique task force is a substantial publication opportunity. All of the aforementioned reviews will be produced and submitted for peer-review and then compiled in a special issue of the top ranked neuroscience journal. At this stage we are planning a submission to Elsevier's "Neuroscience & Biobehavioral Reviews". Each task force member will have an authorship role in one of the initial reviews, and also be named as a contributing author in the capstone/synthesis paper (i.e., each task force member will be acknowledged as a contributing author in two peer-reviewed articles).



Neuroscience & Biobehavioral Reviews

This journal publishes review articles which are original and significant and deal with all aspects of neuroscience, where the relationship to the study of psychological processes and behavior is clearly established. Conversely, the journal will also publish articles whose primary focus deals with psychological processes and behavior, and which have relevance to one or more aspects of neuroscience. Submissions to the journal are actively encouraged which deal with topics not only in the more traditional areas, but also in neuropsychology, cognitive neuroscience, brain imaging, in vivo monitoring of the brain's electrical and biochemical activities, molecular biology, genetics and neurocomputation (i.e., whenever the reviews bring new insights into brain-behavior relations).

2014 Impact Factor 8.802

Additionally, this is an opportunity to be part of a bold project that has the potential to be groundbreaking. This task force is being asked to take on an incredibly challenging problem and affective neuroscience is complex, but the field is advancing quickly and we are rapidly gaining new knowledge so we believe that the timing is right for this unique approach. With the right people involved, we are confident that something truly extraordinary will result.

The Workshop

Halifax is a scenic city located on the East Coast of Canada. In the summer, the historic port attracts many cruise ships as the city is well known for its park and gardens, and it boasts a downtown that is both beautiful and historic. Visitors can enjoy the rich culture and vibrant atmosphere found in the many shops, restaurants, and pubs that are clustered around the boardwalk and the waterfront. While the more adventurous can choose from a wide range of activities such as bus tours, harbor cruises, golf and many eco-tourism and outdoor activities (e.g., sea kayaking, fishing etc.), since all of these possibilities are easily within reach of the city.



Workshop Facilities - Day Schedule

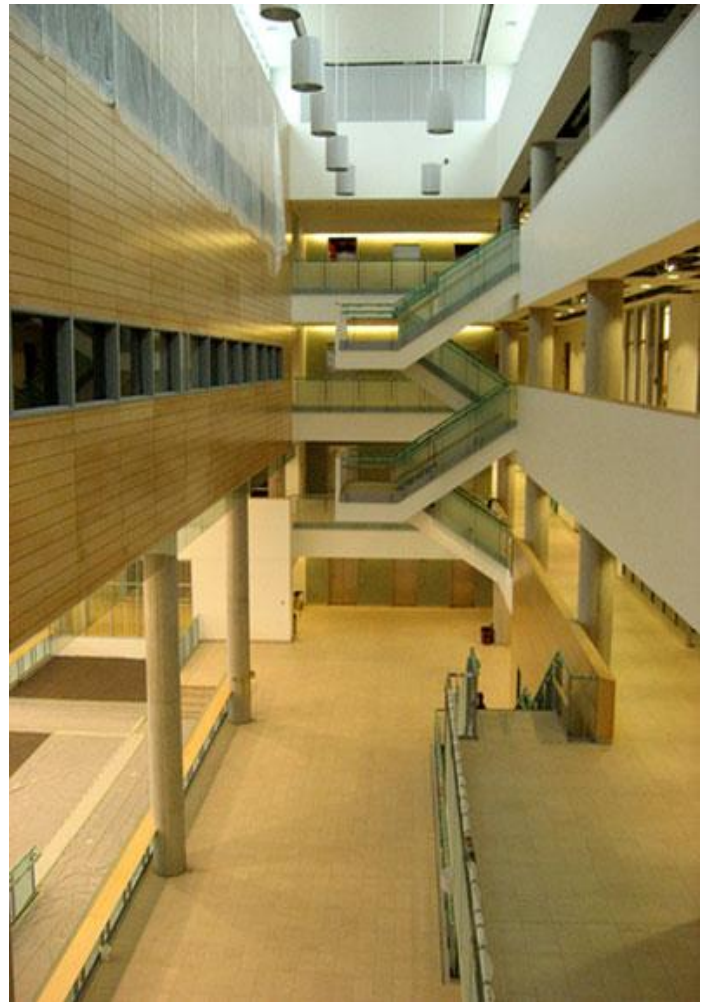
Workshop activities during the day will be held at the Nova Scotia Community College, Waterfront Campus. Participants will be picked up at the Westin Hotel each morning and shuttled by tour bus to this facility.

This new, environmentally-friendly campus features:

- modern design with open spaces
- 150 seat Presentation Theatre
- Meeting/classroom/project rooms,
- Library and computer labs
- Full-service cafeteria/food court
- State-of-the-art technology, including WIFI
- Daycare



Workshop Facilities - Day Schedule



Workshop Facilities - Evening Schedule

At the end of the day, participants will return to the Westin Halifax for a well-deserved break and then the group will reconvene for dinner at the hotel where additional speakers will address the task force.



Advisory Board



Adam Anderson, Ph.D

Associate Professor of Psychology and Co-Director of the Affect and Cognition Lab at Cornell University. The Affect & Cognition Lab (ACL) is an interdisciplinary research group focusing on the psychological and neural foundations of emotion and cognition. The team employs a variety of methodological approaches including functional magnetic resonance imaging (fMRI), peripheral psychophysiology, computational modeling, and rat models to investigate how the brain gives rise to complex mental events, such as emotions, attention, learning and memory



Jaak Panksepp, PhD

Baily Endowed Chair of Animal Well-Being Science and Professor, Integrative Physiology and Neuroscience (IPN), Washington State University and Head, Affective Neuroscience Research, Falk Center for Molecular Therapeutics, Northwestern University. Dr Panksepp's research is devoted to the analysis of the neuroanatomical and neurochemical mechanisms of emotional behaviors (in the emerging fields of affective and social neurosciences), with a focus on understanding how various affective processes are evolutionarily organized in the brain, and looking for linkages to psychiatric disorders and drug addiction. We conduct research on brain "instinctual" mechanisms of fear, anger, separation distress (panic), investigatory processes and anticipatory eagerness, as well as rough-and-tumble play. His lab is especially interested in how various brain neuropeptide systems regulate emotional feelings and social bonds. Dr Panksepp's working assumption is that all of consciousness was built on affective value systems during the long course of brain evolution and his research orientation is that a detailed understanding of basic emotional systems at the neural level will highlight the basic sources of human values and the nature and genesis of emotional disorders in humans. Many of the findings from animal models are ready to be evaluated in human psychological research. Accordingly, we are seeking to facilitate the development of new depth-psychological perspectives to understanding the human mind.



Elizabeth Kensinger, PhD

Director of the Cognitive and Affective Neuroscience Laboratory and Professor of Psychology at Boston College. Dr. Kensinger's research aims to elucidate how emotion affects the processes that give rise to episodic memory. Her laboratory investigates the effects of emotion on all phases of memory (learning, storage, retrieval) and examines how the effects of emotion may change over the adult lifespan



Ross Buck, PhD

Director of the Emotional Communication Laboratory and Professor of Communication and Psychology at the University of Connecticut. Dr Buck's research interest is the interaction of emotion and reason in decision-making in situations involving risk. The team at his Emotion Communication Research Laboratory does research on the role of emotion in communication, including studying relationships between emotional arousal, experience, expression, and communication. Particular foci include (a) fMRI brain responses and empathy (b) Emotional expression and communication in patient samples (schizophrenia, cancer, brain-damaged, autism, behaviorally-disordered). (c) Relationships between emotion and reason in persuasion, with particular reference to political and safe sex communication; (d) the nature of "higher level" social, cognitive, and moral emotions and their role in communication.



Charles S. Carver, PhD

Distinguished Professor in the Department of Psychology at the University of Miami. Dr Carver's work examines "self-regulation," viewing human beings as complex goal-directed systems that regulate their actions with respect to their goals. In addition to a model of action, these ideas have been used to create a view of the origin and function of affects that arise in the context of incentive approach and threat avoidance. Another issue in self-regulation is that people juggle multiple goals that aren't entirely compatible with one another; they encounter difficulties in moving toward goals, and they must decide how to respond to those difficulties. A core element in addressing this issue is that people who are confident are more persistent in their struggles than people who are doubtful. This point also is the basis for a separate (though obviously related) line of research on optimism and pessimism (i.e., generalized expectancies concerning important future outcomes), a personality dimension that has implications for the manner in which people cope with stressful experiences, and the success with which they cope. Dr Carver's recent interests have turned to self-regulatory processes that underlie aspects of psychopathology.



Edward C. Chang, PhD

Professor and Director of The Chang Lab at the University of Michigan. The Chang Lab is composed of several different labs that are in operation at any given time. The two main active labs include the Optimism-Pessimism Lab and the Perfectionism Lab. In addition to these labs, additional labs have come into operation from time to time, including the Chang China Lab, Sport Psychology Lab, Social Problem Solving Lab, American Dream Lab, and Violence Ideation Lab. Dr. Chang has served as an Associate Editor of the Journal of Personality and Social Psychology: Personality Processes and Individual Differences, the Journal of Social and Clinical Psychology, and Asian American Journal of Psychology, and is currently an Associate Editor of the American Psychologist and Cognitive Therapy and Research. He has published numerous works on optimism and pessimism, perfectionism, social problem solving, and cultural influences on behavior, and has ongoing collaborations with researchers from around the world, including China, Denmark, Turkey, Hungary, and India. Dr. Chang has been identified as one of the 70 "top producers" of scholarly works in clinical psychology, from a pool of 1,927 core clinical faculty from Ph.D. programs across the U.S. He was also selected by the American Psychological Foundation and the Society of Clinical Psychology for the Theodore Millon Award in Personality Psychology in 2012. His works have received wide media coverage, from The Chronicles of Higher Education to the Wall Street Journal.



Yulia Chentsova Dutton, PhD

Principal Investigator of the Cultural Psychology Laboratory at Georgetown University. Dr. Chentsova Dutton is a cultural psychologist. Her work is inspired by the core ideas of cultural psychology, particularly by the notion that it is possible for us to study culture in methodologically rigorous ways without losing sight of its complexity and essentializing it. Dr. Chentsova Dutton's research interests center on cultural shaping of emotions and social support. Her research bridges cultural and clinical psychology by examining how emotions and social support emerge from the interaction of universal tendencies (e.g., emotionally-valenced responses to personally relevant events, tendency to use social resources to solve problems), cultural scripts, and situational cues. Dr. Chentsova Dutton conducts research in East Asian, Russian and West African cultural contexts.



Hugo Critchley, DPhil, FRCPsych

Chair in Psychiatry & Co-Director of the Sackler Centre for Consciousness Science at Brighton and Sussex Medical School (BSMS) and University of Sussex. Dr Critchley trained in Physiology and Medicine in the University of Liverpool and received his doctorate in Psychological Studies at the University of Oxford. He undertook specialist training in psychiatry at Institute of Psychiatry and Institute of Neurology, in parallel with research fellowships including a Wellcome Trust Senior Research Fellow in Clinical Science, awarded 2004. Before his appointment in BSMS, he was a principal investigator at the Wellcome Department of Imaging Neuroscience, UCL Institute of Neurology and group leader at the UCL Institute of Cognitive Neuroscience. Hugo's research is now funded mainly by European Research Council and the Dr Mortimer and Theresa Sackler Foundation, and focusses on psychological medicine, biological psychiatry and neuropsychiatry. His research programme examines brain-body interactions, combining human neuroimaging with physiological monitoring and patient studies. The research addresses central autonomic control and interoception relevant to emotion. Through the Sackler Centre of Consciousness Science, the research also applies neural models of consciousness to understanding clinical disorders of mind".



Jennifer Crocker, PhD

Principal Investigator of the Self and Social Motivation Laboratory, the Ohio State University. Dr. Crocker's team explores the consequences of interpersonal goals for learning, self-regulation, relationships, and mental and physical health. Using longitudinal, dyadic, experimental, and psychophysiological methods, the lab's research aims to understand how people inadvertently create what they don't want in their lives when they are driven by the ego or self-esteem concerns; and how shifting to a different framework focused on what they want to create, contribute, or learn can help people create what they and others want. Ultimately, the team hopes to use rigorous scientific methods to provide conceptual and practical tools that can help people clarify and accomplish their most inspired and inspiring goals, in a sustainable way that is good for others as well as the self. In doing so, we hope to help people become more healthy, constructive, and effective human beings, connected to their inner resources, to other people, and to their passion.



Eve De Rosa, Ph.D

Associate Professor of Psychology and Co-Director of the Affect and Cognition Lab at Cornell University. Thus far, the field of cognitive neuroscience has primarily focused on the neuroanatomy of attention and learning. Dr De Rosa's team also considers the neurochemistry of these cognitive processes. Specifically, they examine the contributions of the cholinergic basal forebrain, the major source of the neurochemical acetylcholine to the hippocampus and cerebral cortex, to normal cognition. In rats, they employ pharmacological and cholinergic immunotoxic lesioning techniques. And in humans, they employ behavioural and functional magnetic resonance imaging (fMRI) techniques in populations associated with cholinergic deficiency.



Heath A Demaree, PhD

Dr. Demaree is Director of the Affective Neuroscience Laboratory at Case Western Reserve University. The members of this laboratory are currently investigating how different cognitive/personality variables – both trait (e.g., working memory capacity, BIS/BAS) and state (abstract/global versus concrete/local processing) – influence people's automatic reactions to emotional stimuli (mostly "approach" emotions to appetitive stimuli), as well as their ability to control emotional responses. Reciprocally, members investigate how emotion regulation (e.g., reappraisal) and global/local focus alters people's automatic motivational responses to emotional (mostly appetitive) stimuli.



Bruce H. Friedman, PhD

Associate Professor of Psychology and Director of The Mind-Body Lab at Virginia Tech. Current research uses psychophysiological methods to explore the mind-body relationship. Dr. Friedman's work is primarily focused on the relationships among affective phenomena, personality, and autonomic nervous system activity. Some specific topics of interest include anxiety, worry, stress, and hostility in relation to cardiovascular activity, autonomic specificity of emotion, and self-regulation and autonomic response patterns. The Mind-Body Lab's research is both basic and applied in nature and spans the domains of psychophysiology and behavioral/psychosomatic medicine. Non-invasive psychophysiological measures are used, such as heart rate variability, impedance cardiography, and blood pressure.



Justin Storbeck, PhD

Assistant Professor and Director of the Queens Affective Sciences Laboratory. Dr. Storbeck's laboratory investigates the cognitive consequences of emotion from perception to action. He examines the systematic effects emotion has on perception, cognition, and executive functions, which would then influence memory, decision-making, and social behaviors. We use multiple tools investigating these relationships between emotion and cognition including the use of the brain imaging technique of EEG/ERP and eye-tracking and other physiological measures, which allow us to directly observe neural correlates of behavior. The overall goal is to find biological markers that predict how emotional states and traits influence specific types of cognitions and executive functions. My research is also translational as it provides a model for how emotional disorders can reduce behavioral control and be psychologically costly. Finally, as part of a larger collaborative group, we are examining emotional and spatial deficits caused by neurological dysfunction associated with Systemic Lupus Erythematosus.



Edelyn Verona, PhD

Director of the Disinhibition and Affect Regulation (DARC) Lab in the Department of Psychology at the University of South Florida, in Tampa, FL. Dr Verona's team is interested in applying affective science technologies to understanding the emotional deficits or excesses associated with externalizing and dysregulated traits and behaviors in adults and adolescents. Syndromes of interest include psychopathy, aggression, criminality, personality disorders (e.g., borderline, antisocial), impulsive suicide, and substance use. The main goal is to identify risk factors for these problems, and examine the biopsychological processes (genetics, stress/adversity, personality traits, and cognitive-affective processing) that mediate risk.



Andrew Kemp, PhD

Associate Professor at the University of Sydney. Dr Kemp's research spans affective neuroscience through to epidemiology, bridging the gap between biological mechanism and long term public health. His program of research aims to better understand the relationship between mental and physical wellbeing, and involves a multi-pronged research strategy including focused hypothesis driven experimentation, meta-analysis and epidemiological study. His work makes use of a variety of techniques including EEG, ERP, ECG, fMRI and genetics, and involves studies on healthy participants and individuals with mood and anxiety disorders. Major programs of research include 1) the neuropsychobiological correlates and impacts of treatments (e.g. antidepressants, oxytocin) on emotion processing and its regulation, 2) mechanisms underpinning the link between emotion, physical health and longevity, and 3) the prediction of treatment response in the mood and anxiety disorders



William D. Killgore, PhD

Professor of Psychiatry, Psychology, & Medical Imaging and Director of the SCAN Lab at the University of Arizona. Dr. Killgore is a clinical neuropsychologist whose research focuses on understanding the brain systems involved in emotional processes and cognitive performance. His work combines neurocognitive assessment with state-of-the-art neuroimaging methods to study the role of emotion in complex cognitive processes such as moral judgment, decision-making, and risk-taking. He is also interested in how these brain-behavior systems may be affected by environmental and lifestyle factors such as insufficient sleep, nutrition, light exposure, physical activity, and stimulants such as caffeine. In particular, Dr. Killgore has explored the role of sleep as a mediator of psychological and emotional health and the potential role of insufficient sleep as a contributor to psychiatric disturbance, emotional dysregulation, and risk-related behavior.



Mark R. Leary, PhD

Distinguished Professor of Psychology and Neuroscience and Director of the Interdisciplinary Behavioral Research Center at Duke University. Dr. Leary's research focuses on social motivation and emotion, and on the effects of excessive self-preoccupation on psychological well-being. He has been particularly interested in emotions that arise from interpersonal concerns (such as social anxiety, embarrassment, and hurt feelings), the social and emotional consequences of interpersonal rejection, and the importance of distinguishing between interpersonal and intrapersonal motives in understanding emotion and behavior. Most recently, his work has explored the emotional and interpersonal features of hypo-egoic states in which people display a low degree of self-focus and self-interest.



Daniela Schiller, PhD

Associate Professor of Psychiatry and Neuroscience at the Icahn School of Medicine at Mount Sinai. Dr Schiller's lab is interested in discovering the neural mechanisms underlying emotional control and flexibility. Because the environment we live in is constantly changing, we need to continuously update our emotional responses. In extreme situations, when emotional memories become traumatic, we might even wish to 'erase' emotional memories altogether. Her research team uses neuroimaging, pharmacology and psychophysiology to understand the neural mechanisms that make such emotional flexibility. They examine emotional processing in the normal brain and in patients with anxiety disorders, and hope to promote new forms of treatment. Dr. Schiller is a Fulbright Fellow and a Kavli Frontiers of Science Fellow, and the recipient of the NYAS Blavatnik award for young Scientists and the Klingenstein-Simons Fellowship Award in the Neurosciences for her research about modifying fear memories.

Project Funding

This project is not funded externally. Researchers who are invited to join this task force will need to pay a \$475 USD participation fee**, which will mainly be used to cover publishing-related costs associated with the special issue in the selected journal.

Researchers who attend the 2-day workshop in Halifax, Nova Scotia will also need to pay an additional \$275 USD workshop fee which will cover costs associated with workshop meals, outside speakers, transportation and incidental facility costs. Not all participants are required to attend the workshop, but since the workshop is a key part of the project launch, preference will be given to candidates who have institutional support, or another source of funding to cover travel costs and the workshop fee so they can attend.

****Fee-Waivers:**

- The project participation fee of \$475 USD and the workshop fee of \$275 USD will be waived for researchers who are selected as team leaders.
- The project participation fee of \$475 USD will be waived for PhD Students and/or Post-doctoral researchers who are assisting a team leader, advisory board member, or any other researcher who has paid to take part in the project.
- The project participation fee of \$475 USD will also be waived for a select number of researchers from low-to-middle income [countries](#). Researchers who fall into this category (i.e., those who are interested in joining the taskforce) should submit an expression of interest form online at <http://www.neuroqualia.org> as well as a brief email request to info@neuroqualia.org (simply indicating that you are interested in this support).

Expressions of Interest

If you are potentially interested in participating in the Human Affectome project task force, please submit an expression of interest form online at <http://www.neuroqualia.org> Team Leaders will be selected first and then team members will be selected for each of the 12 teams.

The Human Affectome Project

Author Invitation



Questions? – Please email us at
info@neuroqualia.org