

Rescuing Qualia

by Molly Graham

“I see you tucking eagerly into a helping of steaming cauliflower, the merest whiff of which makes me feel faintly nauseated, and I find myself wondering how you could possibly relish *that taste*, and then it occurs to me that, to you, cauliflower probably tastes (must taste?) different.” (*Quining Qualia* p. 383)

1. Introduction

Hi, my name is Molly and I’m a PhD student studying philosophy, particularly philosophy of mind. While working on my bachelors in psychology, I was introduced to qualia through a course on sensation and perception. Early on, it became apparent that there is indeed scientific support for qualia which had not been addressed by philosophical literature, and that this was worthy of further exploration. So today, I want to clarify what qualia are and where they come from. But first, let’s familiarize ourselves with the debate to better understand what this concept entails.

In *Quining Qualia*, Daniel Dennett provides us with a number of reasons why he believes qualia, or phenomenal experiences, are incoherent philosophical concepts. Because these feelings are hard to articulate, Dennett thinks this concept can be disregarded and is not required for explaining human consciousness.

Dennett discusses four properties associated with qualia:

Private – as other people are unable to access or know another’s internal thoughts and feelings

Ineffable – where no description adequately captures their nature. Dennett states that qualia appear to be indivisible, or “atomic and unanalysable... ‘simple’ or ‘homogeneous’...” (p. 385), making it difficult for individuals to describe or depict these inner experiences

Intrinsic – as in, phenomenal experiences are associated with external stimuli in a regular way

Directly accessible – appearing as “immediate phenomenological qualities” (p. 385) and arising from interactions with the world

2. Intuition Pumps

To argue against qualia, Dennett provides the reader with fifteen “intuition pumps” which are similar to thought experiments or hypothetical scenarios. In the next section, I’ll introduce you to a third of these intuition pumps which involve our sense of smell and taste, and the sound of a guitar. My hope is to clarify Dennett’s concerns and discuss these examples in further detail to show how qualia are, in fact, central to human experience.

- Cauliflower and *Brassica* Vegetables

In IP1, Dennett discusses his dislike for the taste of cauliflower, wondering why some enjoy it while others do not. While there may be one specific flavour associated with cauliflower, Dennett suggests there must be different ways of tasting cauliflower since we all have different preferences. He continues by explaining that flavours have a contextual factor to them as well, as flavours may change based the presence of other foods. He appeals to an example involving orange juice tasting sweeter if syrup or pancakes were present at the same time. Because these flavours change based on contextual factors, Dennett sees this as a problem.

I'd like to suggest that confusion in this area may be clarified by considering how preferences operate independently of the detection of tastes or flavours. Cauliflower and other *Brassica* vegetables are known to release bitter tasting compounds, and individual differences in saliva composition and oral microbiome suggest some may experience an intensity in flavour which others do not.

These types of interactions between stimuli and physiology gives rise to a quale's intrinsicity, as cauliflower's flavour results from both the compounds themselves, as well as the tongue and nose which detect the presence of chemicals. While seasonings may alter the way cauliflower tastes to some degree, sensitive individuals are still likely to notice some degree of bitterness due to the continued presence of these bitter compounds. Therefore, the taste of cauliflower, as a particular quale, can be identified as existing independently of contextual factors like the presence of other flavours.

- Wine Tasting

In the second intuition pump, Dennett wonders whether the Gallo Brothers could replace their human testers with a machine. He claims that a machine would never come to truly enjoy the taste of wine like humans do, and that the properties of the machine's internal states will not be "special in the way qualia are" (*Quining Qualia* p. 384). Additionally, because it is difficult to articulate what makes these human experiences special, interpersonal comparisons of qualia are impossible.

Though the machine may perform better than humans at detecting certain objective properties of wine, our biological heritage provides us with a unique perspective which may be modified with repeated encounters. Through reflection and introspection, individuals may improve their ability to notice a wine's various qualities, such as its body or top-notes, especially as one compares their experiences to existing knowledge, expectations, or memories of previous encounters. If there were no perceptible differences between grapes, each regions wine would taste similar with no noticeable differences from year to year. Although human belief may shape the way wine is perceived and therefore valued, experts will still argue for the existence of something inherently similar between certain batches or environments.

- Taste of Coffee

The next two scenarios involve Mr. Chase and Mr. Sanborn, two individuals who work for Maxwell House coffee as consistency tasters, ensuring the flavour remains unchanged over the years. After roughly six years, Chase tells Sanborn that he no longer likes the taste of Maxwell House coffee despite it still tasting the same. Sanborn replies with his own account of the coffee's flavour and states that it no longer tastes like it used to, and that he prefers the original flavour. Although Chase's phenomenal experiences of tasting coffee have not changed, his feelings about the flavour have, while Sanborn is experiencing the exact opposite; his attitude towards the flavour has not changed but his perception of Maxwell House coffee has. Dennett suggests that situations like these demonstrate inconsistencies as we cannot determine how changes in perception and preference arise.

Now, it seems feasible that over time, Chase's employment has expanded his ability to detect particular qualities inherent to specific regions or beans, and as a result, no longer likes the Maxwell House blend. Sanborn, on the other hand, has experienced a perceptual change rather than a shift in preference, and assuming the coffee has not changed over time, suggests some aspect of his ability to taste has changed. To better understand what may have occurred, Sanborn could consult a neurologist, and while they may not be able to verify the contents of his experience, Sanborn's reports still provide clues as to what might be happening in his body. Similarly, the neurologist's training and expertise provides an understanding of the body's functional mechanisms which allows them to speculate on the potential causes of these changes. Working together, Sanborn and the expert use their combined knowledge to

determine which factors are likely to have contributed to a shift in experience. While only Sanborn is capable of knowing his private phenomenal experiences, he is unable to independently determine how his nervous system operates, indicating that subjective information is illuminating but incomplete.

- Beer Drinking

Switching to the experience of drinking beer in IP9, Dennett discusses acquired tastes. If one were to refer to *that taste*, are they pointing to the quale present after the first sip of beer, or the one arising many years later? Claiming that no one likes the first sip of beer, Dennett suggests that it seems the taste one comes to enjoy is not the same as the taste experienced the first time around. The problem, however, is that this relocates the quale of beer from existing as an intrinsic property to being an extrinsic, relational property that changes over time. This idea is also mentioned in IP10, as Dennett discusses how certain genes code for specific physiological outcomes, like a sensitivity to gustatory bitterness. Since subjective reports may be dependent on one's genetic constitution, it seems as though there is no inherent property in certain chemical compounds which is responsible for a particular quale to arise.

As we looked at in a previous IP, intrinsic elements arise as a result of the interaction between a stimulus and the human body. While one's preferences for certain flavours may change over time, like an acquired taste for hops in beer, other flavours may remain notably unpleasant irrespective of context, like bitterness arising from poisonous plants. The difference here rests in the chemical composition of the substances themselves, where one may be associated with some type of harm or adverse reaction upon contact. This effect, however, is still dependent on the way a body responds to a particular substance, suggesting the intrinsic properties of qualia are tacitly reliant on the physiological systems which produce them, a topic I will explain further later on in the video.

- Sound of the Guitar

The last intuition pump to address is IP15 which involves the sound of a guitar. Dennett asks whether this sound contains "describable parts" or is instead "one and whole and ineffably guitarish" (p. 409). He suggests we often consider the sound to be entirely guitarish, and in an effort to demonstrate the different components of a sound wave, Dennett appeals to the presence of harmonics or overtones when an open string is plucked. When a guitar player lightly places their finger on the string at the fret an octave higher than the open string, the instrument isolates the overtone so it can be heard without the lower frequencies from the open string. Although the two notes sound alike, the sound qualities are not identical, suggesting our notion of *guitarishness* may be more complicated than we believe it to be. He also mentions that we are able to refine our ability to hear and describe these sonic components, suggesting qualia have parts that might contribute to, or detract from, their overall form. As a result, this complexity and inconsistency makes it difficult for us to identify and articulate these experiences. He concludes by stating that because of all of these problems, perhaps there are no qualia at all.

Interestingly, this IP provides us with a fairly easy example of qualia given how much we know about sound, music, and auditory processing, in addition to possessing a lexicon and set of concepts which provide a foundation for exploring these phenomenal experiences. The property Dennett is implicitly referring to in IP15 is *timbre*, or the tonal, textural qualities produced by physical features of the instrument. In fact, Dennett himself provides us with this definition immediately after introducing the harmonic example: "After all, it was by the complex pattern of overtones that you were able to recognize the sound as that of a guitar rather than of a lute or harpsichord" (*Quining Qualia* p. 409). Instead of discussing timbre further, Dennett goes on to state that while our subjective experience of the open string may be different after having heard the isolated overtone, the sound of the open string itself has not changed. While this is true, there is more going on than he describes here, some of which is

mentioned in a previous IP when Dennett inquires as to whether “your middle C is the same as my middle C” (*Quining Qualia* p. 406). Here, he is referring to a specific pitch or frequency, namely 261.6 Hertz, where its *fundamental frequency* is the lowest frequency present. Dennett also wonders whether different people have distinct discriminatory profiles, suggesting we may experience sounds in slightly different ways, given that we can improve our abilities through listening exercises like the one provided in IP15.

Given this, we can conclude phenomenal experiences contain an element of perceived wholeness or consistency given their physical origins, however, different individuals may perceive distinct aspects of the stimulus. Overall, while Dennett’s arguments against qualia identify many areas of confusion and uncertainty, it seems that discarding this concept is not necessary, and instead needs further elucidation.

Before providing a scientific explanation of qualia, I want to discuss their role in the creation of art and other forms of self-expression. Once we have taken a look at the answer to the *hard problem of consciousness*, I will explore the development of qualia in humans before diving into a metaphysical explanation of qualia and its four properties.

3. Music

Given that one person’s favourite genre of art, movies, or music may be another’s least favourite, it seems there is something which causes these feelings to emerge in people. You can ask yourself this question too; “what is it about *my* favourite painting, film, or song that I appreciate?” Although the answer may be murky, our emotions and feelings indicate to us that some type of qualia must exist, as without them, we would likely feel indifferent about art and music in general. Moreover, considering *guitarishness* comes in different flavours, as a performer’s playing style influences the way music is created and perceived by others, subjective qualities must exist to explain how individuals arrive at an opinion on a certain work or genre of music.

One of the most notable examples of depiction through timbre is the symphonic work *Peter and the Wolf* by Sergei Prokofiev. It tells a story of a boy living on a farm with his grandfather and a few animals, where each character is represented by different musical instruments.

Peter is represented by strings while his grandfather is portrayed by a bassoon; a duck is depicted by an oboe, a flute portrays a songbird, and the wolf is represented by horns. The reason Prokofiev chose these instruments is because the qualities of their sounds remind us of the sounds of animals or specific voices, as from our point of view, there is something-it-is-like to hear a guitar or a songbird. By identifying these associations, artists can reference different ideas that others can immediately understand. Additionally, music can be systematized and expressed in symbolic notation, enabling musicians to depict these subjective experiences visually or conceptually through a theory and vocabulary designed to articulate the relationship between subjective events and objective stimuli. Therefore, range of ideas can be expressed or communicated by playing musical instruments in a certain way. While some qualia may seem ineffable, others have resulted in entire fields of study.

4. The Hard Problem

The *Hard Problem of Consciousness* posed by David Chalmers inquires about why is it that we have phenomenal experiences in the first place. It seems, however, an answer can be provided to this question when we investigate literature from evolutionary biology.

Two researchers have put together an explanation for how consciousness arose in living organisms over millions of years of evolution. Publications by psychiatrist and neurologist Dr. Todd Feinberg and biologist Dr. Jon Mallatt describe how self-organizing systems produce emergent behaviours which give rise to system-level capacities like phenomenal consciousness with qualia.

This emergence is a result of the organism's ability to adapt to environmental changes as it strives for survival, relying on simple sensory motor reflex programs in response to incoming stimuli. The reason consciousness is ancient is because it originates from millions of years of biological development with precursors identified in elements of life itself. As the nervous systems of organisms continued to expand over millions of years, animals developed unique physiological solutions to mitigate various challenges as they arose from the environment. Creatures like worms, jellyfish, and sponges are considered non-conscious because their nervous systems respond automatically to stimuli, forming fixed patterns of responses and behaviours.

Vertebrates, on the other hand, are phenomenally conscious organisms given their neural complexity, improved sensory organs, and a capacity to store memories. Since these capacities aim to facilitate an individual's continued survival, their resulting subjective experiences are therefore properties of the body aimed at responding and adapting to environmental changes. Eventually, brains developed sophisticated skills that we can identify in species today like elephants and corvids, however, it was humans that specialized in central nervous system activity.

An example of the relationship between qualia and the physiological protection is readily apparent in the fracturing or breaking of a bone. The pain which arises signals an injury has occurred, motivating individuals to temporarily alter their behaviours to prevent the break from getting worse or failing to heal properly. This is why there is something it is like to "break a leg" as experiences are an adaptive trait inherent to relatively complex nervous systems, a trait which facilitates the execution and governance of adaptive behaviours.

Qualia are explained similarly by Dr. Pentti Haikonen as part of a discussion on the requirements for creating conscious machines. He articulates how qualia arise from percepts produced by sensory mechanisms as physiological systems respond to various aspects of the environment. Because qualia are generated as a result of sensory organ functionality, their content serves as a representation of real-world properties from the subject's perspective. The examples Haikonen appeals to are "blueness" and "sweetness" to show how from an external point of view, nothing exists to suggest a particular hue or taste is present when inspecting chemical compounds or waves of photons. Rather, it is the act of interpreting certain compounds or wavelengths through the body which then gives rise to qualia. Given the primacy of these sensations, Haikonen suggests qualia are self-explanatory, requiring no further interpretation to determine their meaning or relation to the environment. Unlike symbols, which require further processing or interpretation to be understood, the meaning of qualia are directly apparent to individuals as physical experiences. Haikonen also connects qualia to the *hard problem of consciousness* by stating "to be conscious is to have phenomenal experience with qualia" (*Consciousness and Robot Sentience* p. 35), where the awareness of subjective experiences arises from the integration of information within and between different neural networks.

These investigations into the origins of the human brain and its functional capacities suggests a naturalized theory of conscious exists, suggesting the *hard problem* is neither difficult nor an issue for philosophy after all. Although qualia may seem to be quite ineffable due to the fact that their existence predates reflective awareness, the development of the neocortex and human culture has expanded our ability to understand and articulate phenomenal experiences. Since species living in social groups usually require a means of communicating to one another for cooperation, these settings carry the potential to further develop the bodies and behaviours of its members for improved communication.

Through evolutionary processes, species like humans develop cultural practices and communal knowledge for the sake of organizing the group and shaping the behaviours of its individual members. Since this knowledge likely includes information about the internal states of group members, certain qualia may become less ineffable than others based on their familiarity, as a frequently experienced sensation is more likely to be noticed and referenced.

5. Communities

Generally speaking, living in social groups promotes survival because individuals work together toward a shared goal, where community members are expected to conduct themselves in a manner which considers the needs and desires of others. Since this typically involves protecting others from environmental harms, the personal experiences of group members are often useful for determining ways to ensure the safety and security of others. By appealing to qualia, many individuals can learn about phenomenal experiences which occur as a result of interacting with some stimulus. For example, the entire group does not need to test an unfamiliar mushroom to know that its ingestion leads to a stomach ache, provided one individual reports their experiences after trying it for themselves. Those witnessing the situation are able to learn about the mushroom's effects and subsequently communicate these outcomes to other individuals at a later point in time, allowing information and meanings to be disseminated to those absent at the time of discovery. Consequently, the mushroom takes on a specific meaning by the group as something to be eaten or avoided due to the experiences of one individual, potentially saving members from experiencing either the mushroom's ill effects or starvation. In this way, sharing one's experiences with other group members facilitates the production of knowledge about the world as it affects individuals from an embodied perspective.

While certain qualia may be communicated through linguistic descriptions, there are limitations given that phenomenal experiences arise from the body as physiological functioning. For others to properly understand what another is referring to, specific words or concepts must be identified which can adequately represent the sensation or experience one is attempting to convey. If the recipient of the message is able to understand the message and relate its contents to their own experiences, a similarity between the depiction and its bodily referent has been identified and articulated. Consequently, descriptions of our sensations and experiences often appeal to similes and metaphors which create an analogy or comparison individuals can use to deduce the referent. Therefore, the ineffability of qualia may be reduced if cleverly represented by propositions or utterances, however, translating propositions into bodily experiences involves considerably more introspection.

The ability to relate to the subjective experiences of others also generates positive outcomes for the group as individuals feel more connected to those around them. If enough people are able to relate to a particular feeling or quale, it may become better articulated by cultural attitudes, norms, or ideas and even exported to other communities. These intersubjective phenomenal experiences, or social qualia, can be fostered by settings and practices aimed at causing a particular sensation within its members. An example of a social quale is the Danish *hygge* which refers to a feeling of relaxed well-being with an appreciation for small pleasures. Derived from the Norwegian verb which means "to console, to encourage", *hygge* it provides a window into a cultural ideal which strives for positive sociality and togetherness. Conceptually, it encompasses aspects of physical and social environments that can be referred to when individuals attempt to articulate their subjective experiences. In this way, Danes partake in an adaptive cultural experience which is made explicit through both language and behaviour. Therefore, we can state that there is something-it-is-like to experience and practice *hygge*, an omnipresent quale overtly expressed in Danish society.

Now, even if I have convinced you to quine Dennett's opinion on qualia, there remains a lingering question: what are qualia?

6. Information

As representations of environmental stimuli, qualia exist as information generated and supported by the nervous system and its electrochemical signals. It is important to note that this idea of "qualia as information" is explored briefly by David Chalmers in his self-proclaimed *proto-theory* of consciousness (*The Conscious Mind* p. 277), suggesting information states representing phenomenal experiences arise with the realization of physical information states in the brain. From here, Chalmers thinks that by connecting these two domains, we may uncover a set of laws which provides a "fundamental theory of consciousness" (*The Conscious Mind* p. 287). Although it may seem as though Chalmers is on the right track, he does not specify how these two information states are ultimately related, leaving the theory open for further discussion. This final section analyzes *information theory* to determine the relationship between phenomenal experiences and their physical foundations.

Since information theory is a complex topic and spans multiple disciplines, this section will only introduce a few necessary concepts for discussing 'information' in a general sense. Oftentimes, information is considered to be *semantic*, or referring to concepts or states of affairs in the world, where messages are embedded in symbols or text to be identified by a reader. Alternatively, information can also refer to the data or conceptual structure that the message is embedded in, since this structure is capable of transmitting the message from one source to a destination of some type.

By 'data', I am referring to the taxonomically neutral concept which suggests that singularly, a *datum* is relational entity where *data* represents the relational structure generated from the relations between entities. Examples include the black and white stripes of a bar code, or the strings of ones and zeros storing text or images inside electronic devices. Therefore, information can refer to two ideas simultaneously, namely, semantic content, or a structure with embedded meanings.

Information-processing refers to the series of steps or functions that aim to translate or transform incoming data to identify or obtain a message. The human body works similarly to computer systems insofar as data produced by the environment is processed by the system for the purposes of generating some type of output. In most other respects, animals including humans and computers work very differently from one another, but that's a topic for some other time. Using our wide variety of sensory modalities, multiple types of data produced by the environment can be detected, where specific physiological processes are only triggered by certain physical properties or states. For example, light waves are unlikely to elicit a response from the inner ear but are likely to activate cells in the retina instead, suggesting inherent properties of external stimuli are important when considering functionalist explanations for aspects of human consciousness. While our experiences are highly dependent on the physiological processes supporting them, they are also dependent on individuals interacting with specific types of incoming data as well.

The idea that qualia exist as information also seems to have evidential support. In a publication by neuroscientist Dr. Roger Orpwood, experimental findings suggest neuronal activity indeed represents semantic information as messages are encoded in networks of cells firing in response to a stimulus. Appealing to Claude Shannon's distinction between information as semantic or structural, Orpwood describes the reciprocal relationship between the two versions of information as it exists in neuronal activity. While information structures, existing as networks of neurons firing in response to some stimulus, may represent information messages, messages must also be identified from information structures through processes involved in recognition and identification. Furthermore, Orpwood

describes how these networks communicate by receiving, interpreting, and transmitting information to and from other populations of neurons, preserving the information message as the structures which express it are modified through subsequent processing. Neural networks can also use their own outputs as inputs to create a local feedback loop where the network re-identifies the information message inherent in the information structure. As a result, not only does the output represent the information message, the output also represents the fact that this representation is identical to the message last identified by the network. This re-referencing allows individuals to better identify the information message as an image or internal representation of the external stimulus. To demonstrate this using an example, Orpwood appeals to the olfactory processing of hydrogen sulphide, a chemical compound which smells like rotting eggs. Individuals with their attention directed to the scent are able to form an inner representation of the odour as a result of information feedback loops supported by a specific network of neurons. He concludes the paper by presenting an array of experimental findings which support this explanation, suggesting that although much about this proposal seems promising, further research into the distinction between conscious and unconscious processing is required.

As an organizer of information, the human brain is responsible for ensuring individuals behave in ways they deem appropriate for meeting demands emerging from a variety of different settings. While it may be physically comprised of neurons and electrical signals, the information stored and processed by the central and peripheral nervous systems is only accessible to the body's owner, the self-aware individual. While humans may have created methods for indirectly portraying this information, the ability to verify subjective content requires a means of uncovering the messages embedded within neural structures. As such, the gap between subjective content and objective verification can be accounted for, but not removed, by appealing to information theory, as the dual nature of 'information' as structures and messages explains why subjective experiences are private. To eliminate this gap, however, new technologies will be required to read and interpret meaningful content from decoded neuronal signals.

7. Conclusion

In this video, we looked at evidence for the existence of qualia from a variety of domains. While we still lack verification for the private *contents* of subjectivity, evidence for the existence of phenomenal experiences has been identified by both the arts and sciences, suggesting that attempts to cast aside this notion are overall detrimental for our understanding of subjectivity and phenomenology. As humans and as sensing, biological beings, qualia are what adds richness and dimension to experience, even when one encounters unpleasant stimuli.

To recap, we began by looking at a few of Daniel Dennett's intuition pumps, specifically ones discussing flavours and scents like cauliflower, wine, coffee, and beer, along with one surrounding the sounds emitted from a guitar. Although Dennett's aim is to demonstrate just how confusing qualia are, motivating his argument to do-away with this notion, these examples provide a good introduction to human perception. Additionally, Dennett's guitar example provides us with a clear illustration of one quale in particular: timbre, the quality of an instrument's sound. Not only does an acoustic guitar have a specific sound associated with it, this sound also differs from an electric guitar.

From here, we investigated art and music a little further, specifically Prokofiev's *Peter and the Wolf*. The reason I chose this piece of music is due to its use of timbre to tell a story, where characters are portrayed by different musical instruments like oboe, flute, and horns. Moreover, the musical score of *Peter and the Wolf* provides musicians with an entire language and formal system for reproducing this work, where musical elements are articulated in ways which provide musicians with an idea of how

convey the story appropriately. Music, however, is just one domain of artistic inquiry, and other fields of study like painting and sculpture also study elements of creativity and design to better understand exactly what is occurring when artistic works intend to convey an idea or message.

That being said, to further motivate the existence of qualia, it is also necessary to discuss the scientific aspects of qualia and their relation to sensation and perception. Recall David Chalmers's *Hard Problem of Consciousness* which asks why it is that we even have these phenomenal experiences at all. Luckily for us, two hard working researchers, Dr. Feinberg and Dr. Mallatt, have put together scientific materials which are able to finally answer this notorious philosophical question. Their work outlines how sensation and perception arose from millions of years of evolutionary development, where subjective experiences aim to provide certain biological creatures with information about their external environment along with their own bodies and physiological processes. This information is used to further the organism's aims, whether it involves finding food or escaping dangerous situations. Additionally, we looked at Dr. Haikonen's account of qualia to corroborate this answer to the Hard Problem, where a quale's subjective appearance is a result of physical processing performed by the body. The sweetness we taste, for example, is a result of our bodies processing external stimuli like various forms of sugar, and is not inherent to the crystalline structure of the chemical compounds themselves. Taken together, these two empirical accounts for phenomenal consciousness demonstrates how qualia are directly accessible, as the body sends messages to the brain in reaction to changes in the physical environment. The intrinsic nature of these messages, like the pleasantness of sweetness for example, is derived from the sensory organs themselves as they respond to aspects of the physical world.

As the brain and early hominids continued to evolve, our forms of representation did as well. The externalization of subjective experiences portrayed by various mediums like visual art and vocalizations serve as a source of environmental information for others. This ability is significant for communal living as group members require a means of communication for the sake of informing and protecting the group and its individuals. Keep in mind that this also includes seemingly unrelated feelings like comfort and joy, as mentioned in our discussion of the Danish quale *hygge*. As human communication and artistic expression evolved to include systematic, symbolic forms, the content of *what* individuals are able to convey and discuss became a topic of philosophical inquiry. Because these experiences are produced by the body, articulating these experiences in ways others can relate to can be challenging. Thousands of years of evolving human culture, however, has invented new ways of representation such that others are able to relate to certain experiences. Private feelings can be made public through cultural products, and disciplines like engineering and computer science provide new language and concepts which can be used to organize a philosophical framework for explaining the physics of phenomenal experiences.

Metaphysically, qualia exist as information, or meanings supported by physical structures like neurons. In this way, qualia can be connected to the physical world we study, while maintaining their mystique and uniqueness from other domains of science like physics and biology. Instead, the contents of qualia are best studied through the arts and humanities, as the messages encoded in neurons must be depicted through the individual experiencing them, rather than scientific instruments. Empirical support for this idea can be found in a publication by Dr. Orpwood which states that it is the re-identification of a stimulus by a specific set of neurons which enables the articulation of the stimulus in question, like the smell of rotting eggs. While the scientific details of this re-identification process may still need further examination, Dr. Orpwood's paper provides a strong foundation for just how it is that we are able to recognize and represent these private experiences.

Thus, qualia simply refer to bodily forms of representation about some aspect of the world and emerge from physical interactions. One thing I will mention briefly that I did not discuss in my paper *Rescuing Qualia* is just how we rely on qualia for internet memes. If there were no qualia, then these wonderful cultural developments would not have had quite the uptake that they currently do. Arguably, the reason we love to look at and share memes so much is because they often find special or novel ways to depict human experiences such that others are able to relate or find funny and entertaining. In my mind, internet memes are definitely an art-form.

Thank you so much for watching, it means a lot to me that you took the time to check out this video and think about your own feelings and experiences in more depth. My hope is that this presentation is informative for your understanding of subjective experiences, especially about your own. Despite our physiological similarities as humans, never forget that your own experiences are deeply personal and important for leading a fulfilling life, and that they are something to be cherished and appreciated. This is why qualia need rescuing.

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→ Full essay at mollygraham.net/wp-content/uploads/2021/11/Rescuing-Qualia.pdf

☺ With many extra special Thank Yous to all of my teachers, mentors, and friends ☺

♥ Dedicated to Mauricio ♥

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