

A Pyroclasm of Color Has Meaning  
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**Introduction**

What you are about to read will perhaps be puzzling at times. Sometimes the language will be non-standard, and sometimes it will appear as if this paper lacks direction. That is, in some part, because I am still not sure what it means, even after writing it. A herald for confidence, I'm sure. That aside, I believe I will be working towards an argument for a meaningful use of private language, even if it is not a communicative meaning.<sup>1</sup> I will first discuss some problems with expressing sensations and the various ways one might explore them; thus I will try to eliminate the private aspect of it. I will move on to discuss the limitations of our present explorations of private language, and where those leave us. These will be done with specific examples in mind, but I will attempt to be open-ended, as I believe this discussion will not be limited to my specific examples, but to all similar circumstances regarding uncertain sensation.

**Problems:**

**Language, a problem in itself:**

Every thought is somewhat enslaved by language, which forms without regard to private sensation. I can't be certain that when I say I see the cup as blue<sup>2</sup> in optimal lighting conditions, that someone else experiences the same sensation in duplicated conditions. Certainly we will both call the cup blue, objects of that type have always produced a consistent sensation within us, and everyone else calls the sensation the cup spawns in them 'Blue'. Language is insufficient to describe sensation to one another because not only does sensation come before language, it is an incomplete medium of transferring ideas.

**If Brain = Self / If Brain ≠ Self:**

If the electrical impulses bouncing around your head are equal to thought, then the world of sensation becomes much less private. At that point, we simply need a machine so incredibly sophisticated that it can pinpoint and catalogue all mental activity when the mind

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<sup>1</sup> Even if the word to express a private sensation (i.e. the exemplar of the private language) does not communicate the exact private situation, it still communicates something derivative that is in some way meaningful.

<sup>2</sup> See Glossary of Terms

is passively sensing (and cataloguing nothing else). We would then use this machine to establish whether or not two individuals actually do have the same thought when they both look at this blue cup in optimal lighting conditions. If they had the same electrical activity, and all other thoughts were removed from the calculation, then the machine would tell us that they had the same sensation.

“One common form of distinction between brain and mind is to regard the mind as the functional organization of the brain (the usual analogy is to the capability of different physical processors to run the same computer programs and, in this sense, have the same functional capacities). This doesn’t imply privacy for minds (any more than for computer programs) and it is generally taken to be a form of physicalism or materialism.” (Helman, Correspondences).

If this sort of relationship between ‘brain’ and ‘mind’ exists, the mind may still be found out from a study of the other, much as a very sophisticated diagnostic program might read a ‘frozen’ processor chip to see what exactly it was doing when it froze.

However, if the brain’s activity is not equivalent to thought and thought cannot be determined from a study of the brain’s activity/structure, then there is something beyond those electrical impulses that I cannot conceive of any way to measure scientifically. Even if there is such a thing separate from brain that is ‘mind’, I assume it is in some way contingent upon the operations of the brain. If such a distinction between ‘brain’ and ‘mind’ is made, then there will always be some degree of uncertainty and privacy concerning sensation, and any talk of correspondence/non-correspondence is total speculation.

The distinction

### **Non-Correspondence:**

“Famously, a case that forms the basis for an argument for CONTINGENCY was described by Locke, in his *Essay Concerning Human Understanding*. Suppose, Locke said, that ‘by the different Structure of our Organs, it were so ordered, That

*the same Object should produce in several Men's Minds Different Ideas at the same time.*" (Byrne and Hilbert, xiv)<sup>3</sup>

This is *the* problem with any discussion on the nature of color. Whether or not one person's sensations correspond to another person's sensations in such a way that like circumstances produce like sensations is a topic of heavy philosophical debate: one that I cannot do justice in the course of this paper. Perhaps it would suffice to summarize the arguments on each end and suggest how it might come to pass that this obstacle is surmounted.

The primary concern here is that if two relevant individuals in any colloquium have different sensations when given the same environmental data<sup>4</sup>, then perhaps either there is something wrong with at least one of these individuals, or non-correspondence is the norm. If we are to grant the former, then any technology that would accurately allow sensation to be made public would quickly reveal the disparity, yet such technology is presently undiscovered and is likely impossible considering the next problem. If we assume the second, then we can never talk meaningfully about sensation anyways. As I've already implied, I believe that there is still something meaningful to discover, so tentatively, we shall assume that meaningful discussions concerning private sensations necessarily are found in 'broken' minds.

### **The Private Nature of Sensation:**

Because sensation is something internal, unsharable, and exists before any description, it approaches impossibility to discuss sensation in any public context. Only if we assume correspondence can we actually talk about sensation with any worth. However, assuming correspondence goes too far. We therefore have need of some way to communicate sensation in order to establish correspondence, yet that is exactly what is

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<sup>3</sup> In two parts: Lock here suggests that one object may induce in two different humans two completely different sensations; Byrne and Hilbert here imply that the possibility that this might occur forms the foundation for contingency. To be clear, contingency refers to the dependency that sensations might have on the mind of the person they arise in.

<sup>4</sup> See Glossary of Terms

impossible. Even if we developed a method for 'transmitting sensation' from one person to another, the method of communication would be just as dubious as our present language. The difficulty remains that sensations are private because they are the final point in a chain of events. Everything we can share about them actually concerns the events leading up to sensation, but not the actual cognitive state of sensation. I can tell you everything you want to know about the environmental data hitting my corneas and the filtered data hitting my retinas and perhaps (with enough science) the exact electrical impulses traveling down the axons and dendrites of my neurons in my occipital lobe which appears to be the point at which sensation occurs. Because we can observe nothing that happens after a sensation, we can only define it at the end of a chain of causality. This makes any understanding of specific sensations subjective to our own experiences with the stimuli that provoke those sensations, not what we express to each other through the language game.

I have two rather outlandish examples to highlight the difficulty of trusting sensation as a final step in the visual process. Suppose that we develop the mind reading/writing machine described above, and then develop another, more sophisticated machine that allows the control of electrical activity in a human brain on the same level of exactness as our mind-reader. Suppose you have one person look at the blue cup in optimal lighting conditions, and scan that person's brain with our mind-reader. Now use our new mind-printer to insert that mental activity into another subject who has also looked at the blue cup in optimal lighting conditions. This new subject might tell us that the print-spawned sensation and the sight-spawned sensation are the same or different. However, we have no idea whether the same neuron pattern firing in two different individuals produces the same sensation or a different one. Suppose neurons 45982 and 83442 firing together for Subject A produces in A what I would call a blue sensation, while those same neurons firing together in subject B produces in B a what I would call a red sensation. We still don't know that the same pattern of neurons firing in two different arrangements of gray matter will produce the same sensation in each mind. This machine system would not reveal that disparity to us. It is

simply a more elaborate way of communicating sensations, not a means of disproving contingency.

For the second example, assume for a moment that all humans woke up tomorrow with telepathy. Further assume that one of the things which we could telecommunicate with one another is vision. Now, if I sent you a picture of what I see, would this really solve the issue of trusting mutual correspondence? Wouldn't we still doubt whether there was some sort of filter in the arrangement of our neurons that changed the data that was sent through telepathy such that the sensation was not the same in the sender and the receiver? I believe we would. The communication of private sensations seems to be an insurmountable obstacle, but that difficulty does not preclude meaningful descriptions of private sensations: more on that later.

### **Is Interpersonal Correspondence Worth Talking About?**

There is no way around the doubt for correspondence between different thinkers. The only way to actually get to some endpoint of these many If-Then problems is to postulate one and 'roll with it'. For that, I shall begin by postulating what I believe: that Brain activity equals mental activity. Further, I assume that Brains are not built equally. Neurobiological dissections of various brains reveal that their macro-development is different from one another, and when placed under a microscope, the neural connections formed in every brain are different. Although there are certain parts of the brain that *are* equal, those areas, unfortunately, do not include the occipital lobe. In this example, the mind reader would tell us whether or not a person's sensations are consistent with their previous sensations that resulted from the blue cup in optimal lighting conditions, but would be unable to tell us whether those sensations correspond equally to another person's sensations resulting from the blue cup in optimal lighting conditions. It is noteworthy that human minds change, and that given enough time, the same neurons firing might not correspond to the same sensation because other neurons (previously not present neurons) were created. However, if we had a sophisticated enough machine, it might take into account

these new neurons and still give an accurate mind-reading, such that it were still able to give a meaningful readout of its scanning.

The second example is where brain activity does not equal mental activity. For reasons mentioned above, this type of sensation cannot be communicated across entities with any certainty, and as such cannot verify or deny correspondence. This model removes all potential to discuss correspondence in any meaningful way immediately.

It is certain that different people have different brain structures. Knowing that, it doesn't matter whether we assume that sensation is located within the brain or the mind: In each of these examples, there is cause to doubt sensual correspondence. Feeling I have come to an end of usefulness in discussing corresponding sensation between separate beings, and believing I have covered the various contingencies of corresponding sensation, I reject the usefulness of further discussion concerning public sensation. I turn instead to a discussion concerning non-correspondence within a single entity: where sensation is still private, yet can be communicated in a meaningful way to one's self.

### **Examples:**

#### **I Provide My Own Doubt:**

I am afflicted with two different eyes which do not provide me with similar sensations when I use them exclusively from one another. More clearly, when I look upon this blue cup, one eye reports it as what I would call blue, the other reports it as what I would call purple. I am told that my condition is actually quite common, and that many people have disparate vision from birth. The difference between those individuals and myself is that I am somewhat more certain of which eye is 'broken', assuming that it is only one eye that is malfunctioning.

I assume that either my right eye or left brain has incurred some damage (likely due to the neurological disease I contracted in my childhood), such that it provides me with inaccurate data of the world. For reference, the right eye and the left half of the occipital lobe correspond to one another, and I assume that it is my right field of vision that is broken.

Why do I assume my right eye? Two reasons: one, because I have other nerve damage on the right side of my body which is not symmetrically exhibited on the left side of my body; and two, because I have very vague memories involving colored objects, and when I look at similar objects in the present, my left eye's vision corresponds to that memory. I further assume there was some orderly nature to the loss of my faculties, such that my memories have not been altered to match my now-damaged senses.

On some level, I have to accept the doubt that I may have simply at one moment 'picked' which eye was not the 'broken' one and comported my public language concerning colors to that eye. There is no reason I can't have lucid conversation with my peers concerning colors so long as I use the same word as they do when we both speak of the blue cup. Yet my memories assure me that my left eye/right brain provide me with sensations that are at least *mostly* accurate, so I am inclined to believe that my pairing of blue sensations and the word 'blue' occurred before my nerve damage, in my developing years, just like everyone else. Further, because my right eye appears to be less capable of distinguishing differences in wavelengths at each end of the visible light spectrum, it would appear that if I have only one damaged faculty, it is indeed the right eye/left brain combination.

The end goal of any discussion here is to be able to communicate something that is in some way 'private' experience in as explicit a manner possible. This goes somewhat against the grain by claiming that anything vested in the realm of private sensation can be meaningfully communicated at all.

### **Limitations of Private/Public Language**

The strongest opposition I have at my disposal presently is contained in Wittgenstein's *Philosophical Investigations*. In fact the opposition comes in many points, which I will attempt to address separately, but primarily focuses around the question of whether or not there is any *meaning* at all in discussing sensation. If all this speculation

concerns something that cannot meaningfully be expressed to another individual, then perhaps the arguments concerning it are meaningless as well.

Wittgenstein claims that temporality is a difficulty that a private language catalogue is unable to resolve. The claim is that memory is inherently unreliable – that my perception of blue at one time cannot be compared to my past experiences of sensing blue, because it might simply be that “I believe that I believe [that it is blue]” (Wittgenstein, §264). But this does not form a solid objection to a present-state evaluation of non-correspondent vision. Memory is perhaps untrustworthy, but my ability to recognize one sensation from one eye and one sensation from the other at precisely the same time is not so doubtable. In effect, temporality is a non-issue in the cases of asymmetrical brain damage because all meaningful dialogue concerning it does not involve the fourth dimension.

How is it we might look at an object, note it to be blue, and then one second later look at it, not it to be red, and be surprised? Do we distrust our capacity for sensation more than the world’s capacity for consistent environmental data? Most people will assume some magician’s trick has been pulled to change the environmental data the sensor is provided with; we do not assume, when presented with differing sensations from perceivably the same object, that our sensations are in error. Perhaps that reveals something meaningful about the extent that we trust our memory, and the extent we trust our senses.

He also claims, more importantly, that “the essential thing about private experience is really not that each person possesses his own exemplar, but that nobody knows whether other people also have *this* or something else” (Wittgenstein, §272). It seems that his primary motivator for believing that there is no meaning to private sensations in public language is that there is no way to analyze two sensations at the same time. The meaninglessness also becomes a facet of private language for him because there is no difficulty in following a rule of the language game used to describe a consistent world so long as there is no way to view two sensations at the same time. This is also not the case with non-correspondent vision. Perhaps it would be meaningless to the average human, but



private sensations are a meaningful domain to neuropathologists who attempt to diagnose difficulties in a person's biology.

“‘I know how the colour [blue] looks to *me*’ – surely that makes sense! – Certainly: what use of the proposition are you thinking of” (Wittgenstein, §278). Little, but could this be a useful analogy: ‘I know how my left arm should articulate based on my right arm, but it's broken right now, and won't budge?’

Would Wittgenstein say that having non-correspondent vision in some way discloses the privacy of sensation in a way that his examples do not? Certainly not; it still maintains the possibility of various problems, but it might provide a description for a previously unconsidered aspect of perception. I consider visual correspondence between two eyes to be something private. It is certain that no one could tell that my eyes are different by simply looking at me, and perhaps that is an indication that it is as private as a beetle box<sup>5</sup>. I would hope that he would agree with me, and I don't think he would consider it any sort of objection to his philosophy that there is some way in which this private sensation might be described without destroying the private/public barrier. One could imagine a patient seeing a doctor and saying “hey doc, my right eye is blurry, what's up” and something meaningful being expressed. Would Wittgenstein go on to say that the disclosure of that privacy would make sensation for that individual a part of the *public* language game? Perhaps.

In fact, much of the difficulty of finding a use for private language can only be absolved through the use of situations where a person's privacy *needs* to be made public. The usefulness, even then, exists only in pointing out that there *is* a difference between one state and another, and describing what that sort of difference is to another person. The only times of ‘need’ would arise through broken or variable sense organs, and perhaps those are the only meaningful as warnings of disabilities.

### **More Meaningful Language**

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<sup>5</sup> See Glossary of Terms

I suggested earlier that we trust our senses more than we trust our environment, provided there is nothing peculiar about the environment (such as colored lighting or extreme heat causing gases to rise in between our eyes and the object we observe). We trust our memories more than we trust sensations that mismatch with them. The easy example would be if someone were to look at an object in brief, realize that it does not correspond to their memory, and then that person *looks again*. At the very least, we trust our memories enough to require in-depth consideration to discredit them.

The action of looking again exemplifies the trust we have in our own memories and senses at the same time. We look again because we trust both our memories *and* our present sensations, and believe them to result from the same object. In this circumstance, we trust everything, and attempt to discern the fallacious element through our only means available: further sampling. When we finally come to the conclusion that our most recent samplings accurately reflect the object we have two choices: blame our sensations for the error; blame the environment for changing. Something meaningful has occurred here when we actually voice which of these we do not trust. If we fault our sensations, we acknowledge that we could be wrong about both our memories and our present sensations. If it is the object we distrust, we distrust that the environmental data is in fact the same as it was in our previous sampling. If we assume the latter, we seek a trickster, and explore ways of detecting the deception. If we assume the former, we seek help, and seek a way to express what it is we need help with.

Perhaps a more explicit case of meaningful language concerning sensations results from a friend of mine, who contracted Meningitis and Encephalitis as a child, resulting in a state of total blindness for a period of approximately thirteen months<sup>6</sup>. During this time,

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<sup>6</sup> Theories exist as to how blindness can be temporary, but it is generally agreed upon that the swelling that accompanies a neurological infection of the scale required to destroy a significant portion of the occipital lobe is not necessarily severe enough to destroy all of the occipital lobe permanently. As a matter of fact, we do not use all of our minds, and over time, our brains 'learn' how to use other neurons to function in the manner previous neurons were able function. These cases are extremely rare, as the infections are usually

there were no meaningful visual perceptions, but there was still meaning to color-talk. She still knew what 'blue' had meant to her at one time, and she still understood how strange a blue rose might appear. Even though she no longer participated as a sensor of visual data, she was able to rely upon her memories of past data samples and construct a mental image of what someone might describe. Even though her 'beetle box' was empty, she was still able to use her imagination to construct images based upon another person's description. However, this imagination had to be supplied with public symbols in order to be put to work. She was told her cane was whit, and that her sunglasses were a dark shade of gray. When she would receive new clothes, she would have to be told approximately what color they were. She was not used to using precise color descriptions before her blindness, so the blue that she might imagine might be different from day to day. She could describe the way she might look, holding a white stick and some rather unfashionable sunglasses. Is this the domain of public language, or is it private? At this point, probably a mixture of both: public because she is using common symbols to reference other people's familiar private meanings (which correspond to those private symbols), private because it is *her* construction that she describes, and cannot be verified by another person in the same way that a Beetle box cannot be explored.

Her vision recovered slowly, but I recall that one day she seemed surprised that the handle of her cane was, in fact, not white, and that she had never thought about its slow 'yellowing' from her skin oils from constant use. Had anyone told her that the handle was aging, she would have been able to construct that image on her own, absorbing public language into her private game. Had she told anyone that her visual 'world' appeared like a pyroclasm of colors she had never seen before, that might have been a public disclosure of something private. Granted that this nebula could not be veridical with someone else's imagination of what that world might look like, but if a doctor knew that 'total blackness is

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fatal. However, most patients, upon recovery, note that there is surprisingly little difference between the way they perceive colors before and after their blindness.

bad, and nebulas mean recovery is taking place', the language is not without purpose.

Unique experiences

Meaning is not necessarily found in the ability to replicate a sensation to another individual. Meaning can be translatable from one person to another through various accepted public language symbols. If our sensations were different, that is precisely how humans would communicate visual images to each other anyways. That is the commonly accepted public language. Further meaning might be attached to color talk if it was used to determine something objective about biology (blurry vision perhaps implying cataracts). But these are public meanings. This use of private language is still only meaningful in a private context, wherein it might only serve to remind her of the sensation of seeing impossible colors. However, she demonstrated an ability to remember colors accurately for thirteen months of blindness, that should reflect well upon her ability to remember those phosphenes that are not a part of the public language game. A symbol, S, might be the only way to represent those sensations, and it would also be the most conducive of reminding her of those sensations after they had ceased. For her, it would have a very definite meaning, even if it were not able to be communicated.

I don't think it would be very good of the reader here to doubt the memory of an individual in the capacity to remember a sensation; after all, we tend to trust our own memories, and remember them that much better when we have some sort of story, word, or other sensation to go along with it. However, playing devil's advocate, let us assume that she is unable to remember those phosphenes accurately. What of it? Her new, false memory, still has a private meaning, and it is a private meaning that is in some way sharable with others, in that it is able to be distinguished from the realm of visible light. The sensation itself cannot be shared, but it is in its inability to be shared that any language concerning it finds meaning.

**Trying to Conclude**

“Sounds which no one else understands but which I ‘appear to understand’ might be called a ‘private language’” (Wittgenstein, §269). Private language also has no meaning in the public language game. Myself, and many other individuals, however, have found that although our situations are privately known, they can be publicly expressed adequately to be meaningful to health professionals. Something is missing here. Either what we are disclosing is not private in the first place, or there is a way to know something meaningful about a sensation without experiencing it. It could be the former, in that we are *not* expressing what would be normal in the public language game, and it is in our *not participating* in the public language game that in effect lets us communicate publicly (an apparent paradox, but it makes sense). It could be the latter, but I am unable to adequately give any good argument for it. I simply leave it an open possibility.

**Appendix 1: Acknowledged Assumptions**

I would like to acknowledge that all the theories and arguments contained within are based upon the assumption that the human ‘self’ does not extend further than the brain: no soul and no mind, in so far as they are anything independent of the brain. Rather, these things are representative of physical states of the human brain. Any time I use such words as mind, I will be referring to it as a simple convenience for describing mental states. The sum of mental activity, for me, is contained in neurobiology. I believe this purely on faith, and do not attempt to bicker about it with others. If there comes a time where something I say might be doubted based upon this prejudice, please entertain this way of thinking and reread the difficulty, accepting that the entire argument might be contingent upon an argument for biologically dependent states of consciousness.

I assume that for many readers – indeed, most of them – this work will seem entirely pointless. My colleagues assure me that there will be little or no gain from this work. I assure them that if they were one of the uncertain individuals discussed in the ‘problems’ section, that it would matter, and that they are dismissing this work as unhelpful for the sake of personal disinterest. The sorts of problems presented herein require a certain degree of imagination and sympathy. Therefore, I ask the reader to imagine, as they read through this, that there are problems in the neurology of other people’s brains, and any effort offered to discussing those problems more precisely will lead to less confusion in its treatment.

I also assume that technology will evolve such that observing minute areas of mental activity will no longer be an obstacle. This is a simple assumption that is an attempt to defend against accusations that this topic might only be valid in a science fiction novel. It might not be possible right now, but it was also at one point impossible to see the polio virus; give it time.

## **Appendix 2: Glossary of Terms**

**Beetle Box:** Wittgenstein uses this term to refer to a private sensation that is, for him, impossible to disclose. The box refers to the scope of sensation, and the beetle itself refers to that which is contained within that scope.

**Blue:** In most of these cases, I will be referring to a blue cup, which seems to reflect wavelengths of light in the 450-470nm range. In component form, this refers to approximately (0,0,200 on an RGB light value scale of 0-255).

**Environmental Data:** This is the light that hits the cornea of the eye.

**Filtered Light 1:** This is the light that has passed through the cornea of the eye and stimulates the retina of the eye via rods and cones.

**Object Data:** This is what I will use to refer to the surface qualities of an object.

**Sense Data 1:** Here I refer to the product of filtered Light 1 in the optic nerve

**Sense Data 2:** Here I refer to the product of Sense data 1 in the occipital Lobe

**Sensation:** Here I refer to the mental state that accompanies the processing of Sense Data 2 in the occipital lobe. This is where I assume 'colors' are materialized by the brain. The reason I use a different word than the traditional 'Sense Data' for this is twofold: first, I'm not referring to whatever it is being traded around in the brain but rather the state of the brain trading around that data. Second, I'm vindictive and am out to confuse my readers.

**Optimal Lighting:** Here I refer to white light, which results from surface temperatures of stars of approximately 9600 K. This light is not always available, but it is assumed by most scientists to be the optimal medium for transmitting color accurately.

**Veridacity:** I shall use this term as a qualifier of the state of accuracy in vision. If an object really is red, and also if the sensation that accompanies a person looking upon this object is red, then this sensation is veridical.

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I never knew how to cite someone who chose to remain anonymous... In any case, I didn't make up my friend's circumstances, and were the result of conversations in April –June 2004.

If anyone gets really bent out of shape about the improper format of this bibliography, I'll go ahead and update it for you. As of now, it seemed more important to get this to the printers before class.