"Labels are a necessity in the organization of knowledge, but they also constrain our understanding." Discuss this statement with reference to two areas of knowledge.

Candidate Code: jct466

Session: May 2021

Word count: 1597

When I read the word “label,” an encyclopedia immediately leaped into my mind. Encyclopedie are organized into “entries,” ordered alphabetically. Without these entries being neatly titled, would it be possible to find information in those door-stopping books? But the question that arises is: does calling a dog a dog discourage research that would establish that a dog is actually a part of the cat family? While this example is far-fetched, the crux remains — we humans have a propensity to use labels often. A label is a name attached to ideas and objects, that helps us know a little bit about them immediately. So, the central knowledge question here is, “though labels help us organize knowledge, to what extent do they limit our further questioning and understanding?” I think that while labels are useful, they are extremely limiting — for example, when I’m trying a new dish knowing it contains an ingredient I don’t like, I’m unable to let go of the label-caused bias and enjoy the dish completely. To explore this view, this essay aims to use the areas of knowledge of the natural sciences and the arts to help answer the knowledge question, using a combination of claims and counterclaims to that end.

The natural sciences use a complex system of interlinked labels, often called “terminology,” each with its own definition. These labels, while being of much use in categorizing shared scientific knowledge, feel more like an end than a beginning from which knowledge acquisition can occur. This also spawns numerous misconceptions, especially amongst people without a lot of understanding of the sciences. For example, when I first learned about atomic theory in chemistry class, I was simply introduced to the idea of an “atom,” defined as an “infinitely small, indivisible sphere.” Looking at a photograph labeled “atom” further stymied my inquisitiveness, because it seemed like there was nothing more to an atom than a definition and a picture, that there was nothing more to learn about it. It also led to me believing that, if I folded a piece of paper seven times, until it could no longer be folded, it would become

an “atom.” Many of my classmates also believed this, demonstrating that this label prevented us from researching any further into the topic, while also giving us a fundamentally flawed understanding of what an atom actually is. Only after entering high school and taking courses in physics and chemistry did I realize the multifaceted nature of an atom, and the multiple theories that surround its composition and structure. I understood that the label “atom” my textbooks had simply introduced and vaguely defined years ago was a blanket statement that discouraged further exploration. However, the label, being meant for organization, acts as a means for people with vast amounts of scientific knowledge, like chemists, to evidence and structure their arguments properly. Generally, labels frequently prevent further research in the sciences, but this is more due to what we humans make of labels than any characteristic inherent to them.

However, labeling can sometimes serve as an engine for deeper research, by linking together and organizing large amounts of data. The system of biological taxonomy, defined as “the science of recognizing and delimiting species,”[1] is one such example. As part of my Extended Essay, I researched the effects of fungicides on hornwort, labeled taxonomically as *Ceratophyllum demersum*. By simply looking at the label, I reasoned that the plant was from the genus *Ceratophyllum*, making it easy for me to find information about the plant’s biology online. In addition, I had done research on another *Ceratophyllum* species during an online course, and so I could relate that research with my current one. Because of this, I was stimulated to do even further research into the plant’s family and their properties, which then helped me refine my research methodology, making my exploration effective and useful. This can also be seen on a much larger scale — taxonomy and the labels it uses are considered crucial for conservation and

[1] Thomson et al. (2018). “Taxonomy based on science is necessary for global conservation.” *PLOS Biology*, 16(3).

allocation of government funding for research[2], since they allow for information about the size of a species' population and their conservation status to be collated. Labels therefore make it easier for shared knowledge to be discovered, while also providing a simple way for governments and other foundations to split funding. These two factors actually augment the standard of scientific research done, hence improving our understanding and shared knowledge.

Looking at the natural sciences, I have now understood that labels constrain questioning in certain cases, especially amongst those who do not have much prior knowledge within the field. However, from the perspective of experts in the natural sciences, labels are certainly a highly beneficial way to organize and increase knowledge.

Within the area of knowledge of arts, labels provide a framework, which, along with sense perception, is used by the audience to "judge" art. However, this punishes the artist for moving away from the *status quo*, and hence prevents them from exploring and questioning the world outside the boundaries of how their art is labeled. For example, the band Linkin Park was labeled as a "nu-metal" or "alt-rock" band when they appeared on the scene in the early 2000s[3], which led to them having massive success across the globe. However, I remember when their seventh album, *One More Light*, released in 2017. It was met with a lot of controversy and backlash, receiving very poor reviews, because it was considered a pop album. Fans slammed the band for moving away from their labels, with critic David Sackllah describing it as a "muddled mess … an album from a band that completely abandoned any sense of identity."[4] Hence, by attempting to move away from their labels, Linkin Park were attacked, creating a system of peer

[2] McClure et al. (2020). "Towards reconciliation of the four world bird lists: hotspots of disagreement in taxonomy of raptors." *Proceedings of the Royal Society Part B*, 287.

[3] Hyden (2017). "Linkin Park's Chester Bennington Was A Rock Star At A Time When Rock Stars Were Rare." *Uproxx Magazine*.

[4] Sackllah (2017). "Linkin Park – One More Light." *Consequence of Sound*.

pressure that would prevent them from experimenting with new sounds in future albums. In a way, by placing these labels on the band, the public stopped Linkin Park from evolving, and gaining a better understanding of their abilities and true desires. It could be that Linkin Park would have been much better suited to a lower, softer pop sound, but this understanding was constrained by the labels placed on them.

Of course, it is still important to note how key labels are in the discovery of new knowledge within the arts. Taking the example of Linkin Park itself, many people discovered them only *because* of their labels. I listened to some nu metal music and decided that I liked it, and so tried to find bands that were labeled as "nu metal bands," which led to me stumbling upon Linkin Park, leading to more knowledge acquisition about the genre and music in general. This can be applied to other aspects of art as well. In English class, we learned about the painting *La trahison des images*, by the Belgian artist René Magritte. It involves a picture of a pipe, below which is written "ceci n'est pas une pipe" (this is not a pipe). This can be considered a label, but this actually *encourages* further exploration. The outrageous nature of the label, specifically how it is seemingly an oxymoron in terms of sense perception, considering the pipe directly above it, piqued many people's interests, leading to a flurry of theories about the meaning behind the label. Therefore, it was the label alone that instigated further questioning.

The controversial sculpture *Fountain*, by French artist Marcel Duchamps, provides some commentary on labels in art. *Fountain* is a men's urinal, placed on the ground, with the name "R. MUTT" written on it. According to thinker and artist Beatrice Wood, the urinal's "useful significance disappeared under the new title," hence creating a "new thought for that object."[5] Hence, by the use of the label, the urinal was looked at as a fountain. Duchamps' personal

[5] Wood (1917). "The Richard Mutt Case." *The Blind Man*.

knowledge of the urinal being a fountain *transformed* into shared knowledge as a direct result of the labeling, or rather, mislabeling. The label hence widened my understanding of the world.

Generally, while labels in the arts can constrain the range of artistic expression, labels form links that can lead to further knowledge acquisition. In addition, deliberate mislabeling, and the controversy and confusion that stems from it, can lead to the very foundations of our thought processes being questioned, leading to paradigm shifts and new shared knowledge in the arts being created.

Overall, then, the use of labels for organization is unquestionable and absolutely necessary. However, due to the inherent simplicity of a label, it minimizes the importance of the ideas it labels. As humans, we have a fundamental need to simplify and link together complex thoughts. However, in the process of doing so, we imply that the thoughts are nothing but their labels — this is what restricts further questioning, such as in the example of the atoms. In addition, we have a propensity to treat labels as infallible and static, even though things, and hence their labels, constantly need to change and evolve. It is because of this that deliberate mislabeling causes such controversy and theorizing.

Labels absolutely do constrain further research and understanding in some cases. However, I have realized that this is due to human nature — labels do not innately constrain understanding. In conclusion, labels only limit further questioning when they are considered unchangeable representations of an idea, which is what beginners believe they are. Experts know that labels, above all, provide a knowledge framework to characterize and order information, and hence, they remain unlimited by labels. To them, labels are simply samples of the vast swathes of knowledge held by the universe.

References

Hyden, Steven (2017). “Linkin Park’s Chester Bennington Was A Rock Star At A Time When Rock Stars Were Rare.” *Uproxx Music*, https://uproxx.com/music/linkin-park-chester-bennington-obituary-legacy/. Accessed 9 January 2021.

McClure, Christopher J. W., et al. (2020). “Towards reconciliation of the four world bird lists: hotspots of disagreement in taxonomy of raptors.” *Proceedings of the Royal Society B*, 487(*1929*). doi: 10.1098/rspb.2020.0683.

Sackllah, David (2017). “Linkin Park – One More Light.” *Consequence of Sound*, https://consequenceofsound.net/2017/05/album-review-linkin-park-one-more-light/. Accessed 9 January 2021.

Thomson, Scott A., et al. (2018). “Taxonomy based on science is necessary for global conservation.” *PLOS Biology*, 16(*3*). doi: 10.1371/journal.pbio.2005075.

Wood, Beatrice (1917). “The Richard Mutt Case.” *The Blind Man*, archived at http://sdrc.lib.uiowa.edu/dada/blindman/2/index.htm. Accessed 9 January 2021.