

**Title 3: “Labels are a necessity in the organization of knowledge, but they also constrain our understanding.” Discuss this statement concerning two areas of knowledge.**

**(Word count: 1598)**

A label is a brief descriptor of an individual or object, generalisable to wider audiences. Its basis is a specific shared characteristic of several objects. Emphasising shared characteristics affects the constructed body of knowledge. Organising knowledge depends on knowledge’s intrinsic and shared characteristics. However, emphasising the shared characteristics can lead to judgement almost solely on that basis, ignoring any other relevant intrinsic characteristics, causing bias. We then ponder whether labels are necessary for cohesive knowledge or if their substitution can improve the knowledge’s cohesion and descriptiveness. An unclear understanding of individual traits renders the overall body of knowledge imprecise. Excessively emphasising individual traits blurs their connection to the overall body. Interconnecting these traits and labelling to summarise a body of knowledge comprises its organisation<sup>1</sup>. This leads us to our first knowledge question: to what extent does the organisation of knowledge assist in interpreting it? Organising and quantifying knowledge are synonymous: to simplify an overall body of knowledge, we first break it down into smaller parts and simplify them individually. Labelling further summarises a body of knowledge under a single description using shared characteristics. A summary of a text is simpler to interpret but is not as detailed, which affects our perception. This leads to our second knowledge question: to what extent is our perception

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<sup>1</sup> “Why “Labeling” In Learning Isn’t Always Bad | Education Advice.” <https://qwertyed.com/why-labeling-in-learning-isnt-always-bad/>. Accessed 28 Sept. 2020.

of a body of knowledge affected by its quantification? In this essay, I intend to investigate the influence of this labelling in the Arts and Natural Sciences.

To what extent does the organisation of knowledge assist in interpreting it? In the arts, we observe this with art connoisseurs, whose knowledge of the subject lends them an informed opinion of an artwork. Connoisseurs can interpret art specificities that other observers may not. For example, they can understand the reasoning behind colour usage in artwork, while others would only be influenced by their observations, with little real understanding.

Connoisseurs can accurately perceive artistic parameters like texture, colour, and value. They can better identify emotions communicated through physical characteristics than ordinary observers through tuned sense perception, implying that subject-specific knowledge enhances one's perception of the arts and makes its language accessible, enhancing personal knowledge. My Visual Arts subject benefited me similarly. Artwork labelling merely facilitates this process of deduction, providing a basis to analyse the work.

We observe this in Natural Sciences in study structuring by scientific terminology. A concise abstract in scientific studies is essential for accurate understanding. Studies use scientific language throughout for a singular, precise perception. Concisely framing statements leads to reason influencing perception more, adding to its objectivity, making the knowledge more concise. Criteria division in sciences helps properly label content based on intent. Design documents divulge knowledge about interface functions in the Computer Science IA while programming documentation highlights how code creates them. Disorganised knowledge prevents syllogistic conclusions, threatening its validity with fallacies. Criteria organisation makes logical conclusions easier, strengthening personal knowledge. Organising knowledge helps accurately interpret the overall body,

provided one's contextual proficiency, and accurate sense perception. Labelling through criteria division thereby benefits one's understanding of the knowledge divulged.

However, this skews interpretations, due to imprecise language and unreliable sense perception. Certain framing of information can influence the nature of conclusions reached.<sup>2</sup> Some abstract artists like Clyfford Still deliberately left their art unlabelled<sup>3</sup>, to leave them completely open to a viewer's interpretation<sup>4</sup> from their perspective. Providing discrete titles immediately connects to artworks' meanings. Clyfford Still's art consists mainly of completely random colour fields (incorporating various texture, shape, and colour combinations) imposed over one another. The artist, painting impulsively on the canvas, imparted emotional knowledge as perceived by the viewer. He titled artworks by batch and number, to remove further bias; for example, PH-534 (1944). Thus, the lack of organisational labelling helps construct unbiased personal knowledge using the viewer's perception. The batch labelling hence suggests a larger body of knowledge without disclosing the artwork's intrinsic qualities, because it would bias and limit viewers' perceptions. I similarly abstracted my artworks' names to avoid misinterpretation.

In Natural Sciences, labelling various blood cancers as leukaemia<sup>5</sup> illustrates this. Chronic lymphocytic leukaemia exhibits very different symptoms from more common leukaemias. Despite this, many practitioners misdiagnose this as general leukaemia without specifying further, causing patients to suffer from "atypical" symptoms. This misdiagnosis heavily

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<sup>2</sup> "Evaluating framing effects - ScienceDirect."

<https://www.sciencedirect.com/science/article/abs/pii/S0167487000000325>. Accessed 1 Oct. 2020.

<sup>3</sup> "Clyfford Still Museum." <https://clyffordstillmuseum.org/art-artist/clyfford-still/>. Accessed 29 Sept. 2020.

<sup>4</sup> "Why Many Artworks Are Untitled - Artsy." 4 Jul. 2019. <https://www.artsy.net/article/artsy-editorial-artworks-untitled>. Accessed 30 Sept. 2020.

<sup>5</sup> "Is "leukemia" an appropriate label for all patients who meet the ...."

<https://www.sciencedirect.com/science/article/abs/pii/S014521606002657>. Accessed 29 Sept. 2020.

affects the patients' shared knowledge, indicating further specificity is required to acquire precise knowledge. In Psychology, researchers withhold knowledge similarly due to ethical concerns. It becomes consequently insufficient to compose accurate knowledge in the patient, showing the restriction on deriving personal knowledge because of the shared knowledge's organisation.

To what extent is our perception of a body of knowledge affected by its quantification? In the arts, we observe many artworks with similar art styles. Linking them contributes to shared knowledge about that style. Upon researching artists applying that art style, we connect data and eventually attribute the artworks to that artist. For example, Vincent Van Gogh's art style is very distinctive, producing scenes from singular small strokes.

Observing art with this style, we can safely infer its link to Van Gogh. This connects to shared knowledge about Van Gogh's life and perspectives via historical context, like in art portfolios. Broadly quantifying his artworks under a single art style thus determines our perception, constructing contextually accurate personal knowledge, provided fit connections exist. This overarching labelling of the art styles hence benefitted the knowledge gathered, due to its broad scope.

Natural Sciences depends on quantified knowledge from data sampling and theorisation. Quota sampling samples populations using proportionally quantified shared characteristics, letting us infer further shared knowledge by improving target generalisability. For example, numerous diseases in Africa spreading through animal contact like the Nipah virus have

been found<sup>6</sup>, arising from bats and spreading via pig meat to humans. Testing various animal samples with pathogens, and using existing statistics, studies show that livestock amplifies these diseases the most<sup>7</sup>. These results influenced shared knowledge about zoonotic pathogens, the sampled animals, and resultant behaviour. This generalisation thus yielded accurate results, appropriate for shared knowledge, confirming the cohesive benefits of general labelling in producing a body of knowledge.

However, this may not be the case with digital arts. We digital artists apply pre-programmed tools to translate our artistic vision<sup>8</sup>, which may partly skew due to tool limitations. Additionally, further translation of the canvas to binary depends on the tools' degree of precision. This, however, lets digital artists make their art more interactive and expressive. Programmers like me also perceive digital art as replicable algorithms stored in tools to create artworks. Artists would consider it irreplacable, because of the incomplete translation of artistic intent into the final artwork. They consider qualitative aspects of art, whereas programmers' perspectives replicate the artist's physical action. It also depends on the viewer's interpretation of the artwork and its rationale. This lack of translation of intent because of imprecise labelling of the work can produce inaccurate knowledge, not covering the various aspects that the work may encompass, hence limiting perceptions of the body of knowledge produced.

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<sup>6</sup> "Africa's growing risk of diseases that spread from animals to ...."  
<https://cgspace.cgiar.org/handle/10568/108990>. Accessed 1 Oct. 2020.

<sup>7</sup> "Domesticated animals and human infectious diseases of ...."  
260915066\_Domesticated\_animals\_and\_human\_infectious\_diseases\_of\_zoonotic\_origins\_Domestication\_time\_matters. Accessed 1 Oct. 2020.

<sup>8</sup> "The quantification of art and fractals, by William Wang - Tiltfactor" 28 Jan. 2012, <https://tiltfactor.org/the-quantification-of-art-and-fractals-by-william-wang/>. Accessed 30 Sept. 2020.

Similarly, in Natural Sciences, representative sampling can cause biases<sup>9</sup>. Individual characteristics may skew results when samples are based only on shared characteristics, seen in biological studies dealing with population and speciation. Using quadrat sampling provides a wide range of values, with a higher degree of accuracy for larger samples. However, this has several drawbacks. A study surveying the efficacy of sampling methods in an Egyptian reef transect<sup>10</sup> revealed that metre-grid quadrat sampling along its full length provided ineffective results by considerably underestimating fish populations. This imprecision clouded the perception of data gathered, leading to inaccurate knowledge. Here, the grids within the quadrat organise and quantify the unitary data analysed. Margins of error (eg: quadrat size) may cause inaccuracies. Conversely, fish may be wrongly tagged, causing inaccurate results. Hence, quantifying knowledge can cause false interpretations, particularly if involving emotion. These quadrat applications hence clouded and limited the overall body of knowledge because of data and structural inaccuracies. Similar sampling issues made our Psychology study insignificant.

Qualitative and quantitative analysis are the two primary methods of analysis of knowledge. Judging either method's appropriateness in situations involving both types of

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<sup>9</sup> "Sampling for natural and social sciences - SlideShare." 4 Apr. 2015, <https://www.slideshare.net/maxwellranasinghe/sampling-for-natural-and-social-sciences>. Accessed 1 Oct. 2020

<sup>10</sup> Leujak, W., and R. F.G. Ormond. "Comparative accuracy and efficiency of six coral community survey methods." *Journal of Experimental Marine Biology and Ecology*, vol. 351, no. 1-2, 2007, pp. 168-187. *ScienceDirect.Com*, <https://www.sciencedirect.com/science/article/abs/pii/S0022098107003036>. Accessed 1 March 2021.

data is essential to make accurate conclusions. An analysis is precise when provided knowledge is precise. This precision improves the personal knowledge constructed. However, structuring is always required to make sense of knowledge. This essay thus evaluated the effects of structuring on the perceived validity of knowledge, while additionally focusing on implications of summarising and quantifying data on the perceived validity of knowledge. To further validate personal knowledge, it is important to implement the findings of this essay in an appropriate context, if such a situation arises.

We can conclude that data organisation like labelling helps apply reason in perception, quantifying any knowledge using simplification. However, excessive organisation insinuates clashing conclusions, affecting perception. Excessive quantification/labelling misses details during an evaluation, making personal knowledge inaccurate, affecting objective knowledge less and subjective knowledge more. Maintaining a logical flow while avoiding excessive label condensation is thus important. Evaluating the extent to which labelling helps elicit condensation would benefit this research, if not for the essay scope. Elders, who have more real-world experience with these topics, would leave a margin of error to interpret knowledge while accounting for real-world variability. Because of this, they contribute more valid, concise knowledge than younger individuals. They recognise the extent to which knowledge can be safely labelled and quantified. This makes their shared knowledge more accurate and persuasive than that contributed by younger individuals. We attribute this to a better understanding of the effects of labels on different types of knowledge, letting us then construct more valid and accurate bodies of knowledge.

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