



## The domains of quantitative and qualitative research and my resolve in the latter: Is it only surfaces?

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**Abstract:** In this essay I define the limits of quantitative and qualitative research and in so doing, argue both for their separation and their unity. In terms of the former this defines the parceling of reality into distinct disciplines that attempt to describe reality, namely the hard sciences and humanities broadly speaking. In terms of the latter, the surface (or form) that both approaches yield only apparently appear completely different, but may yet describe the same reality, only in different terms according to a different language. In that sense, the narrative of knowledge is constructed and attenuated according to our modes of inquiry or research methods, I conclude with the value that qualitative research may hold which is significant in an increasingly sterile and scientific-materialistic culture.

**Keywords:** quantitative research, qualitative research, interdisciplinary; knowledge

### I. Introduction:

In this essay I argue that both quantitative and qualitative research methods have definite advantages, but that their scope or use only applies to particular domains. Certainly, there is an area that is somewhat murky and that may incorporate both research methods as its mode of inquiry, but in the main they apply to distinct realms.

While such a claim may seem obvious, it is important to argue. For rather than one ousting the other or thought to be superior, one recognizes that certain disciplines require one methodology and not the other, but that this does not undermine the value of either. In this light, one needs to reclaim space especially for the qualitative approach, as an increasingly technicist and cold society, based on reductionism and numerical knowledge, is not sufficient in these areas, nor desirable as a mode of educating and even constructing knowledge. As a writer in the fields of art and philosophy, I thus make an argument for the bounty that qualitative research may yield and its necessity.

With this apparent dualism one may divide knowledge such that at its apex are two distinct

nodes: The sciences and the humanities. Stemming from each of these are all the various branches of knowledge – the hard sciences on the one hand, the soft sciences in between and the artistic and literature and so on at the other pole. Disciplines such as psychology include both aspects. One could apply a qualitative analysis in the field of art, but it would be sterile and not about art as such or producing any content on art as such, but as simply an analysis of variables. On the other hand, one might apply a qualitative analysis on science, but in that case one intercludes the humanities within the sciences (such as the history of science). Nevertheless, for the sake of clarity, rigor and “purity” of the medium, one recognizes each strand of knowledge requires a distinct methodology, operating as discrete (particle) and yet also intercluded (wave), such that each discipline mirrors every other, though it has its distinct language and lexicon. In this sense, one can speak of the art of mathematics or the mathematics of art.

#### 1. *Observation 1: Distinct polarities*

In the empirical sciences, the central task is to quantify and explain what something is, how it works and in what context. If one needs to assess the potential value of a drug on liver rehabilitation, then one needs to run tests or experiments to see if the drug worked over time. This is measurable in effect, in numerical output: what dosage; time periods; efficacy across a population; effect on other health factors and so on. All this is measurable; deterministic; empirical and factual. In this respect, only quantitative methods apply.

In the humanities (such as art history, philosophy, literature, theory of drama, music, theology, dance and so on) one is dealing with ideas, conjecture. Certainly, there is a numerical aspect: comparison of similar styles; historical context; collating and categorizing, perhaps even a cultural-social quantity analysis of the reception of art and the like. However, to do philosophy or make a philosophy requires more than simply chronological truth or measuring the play of culture in society, it



requires the kind of writing and research that is itself an “object”, text or artwork – it adds value. Certainly, there is an argument and logical coherence, but it is also imaginative, passionate, speculative and has less to do simply with fact as it does with producing flights of thought, of interpretation and even may have a visionary aspect to it. For example, to say that Van Gogh reveals the deep agony of human existence, is more than stating a fact, it is a literary image and perspective that speaks to the whole person and encompasses more than objective fact, but also subjective experience – and the latter is no less important in terms of a humane approach – hence it is rightly called the humanities. Only qualitative research methods can accommodate this.

Whereas in the case of the hard sciences, the objective is to produce research that has demonstrated value in terms of utility, speaking as it does about real world phenomena, the humanities lodges itself in the theoretical world of thought, emotion and intuition. The former is necessary to solve certain real-world problems or at its most aloof and purist, provide theories and models about the actual world, the latter offers metaphor, imagery, alternative perspectives and appeals to both intellect and emotions. Prevailing opinion may conclude that the former is therefore useful and the latter merely subjective relativity with no claim to truth. In the sense, quantitative research is better than qualitative research. However, this is shortsighted for the very project of incessant research according to quantitative research is precisely a sign of the time, the game playing society, the language limiting the world, the medium attenuating what we can perceive, and it is only a qualitative approach that may draw awareness to this and offer new ideas to the prevailing status quo.

A simple example will make this clearer: One can engage in a project of trying to count or estimate the number of stars in our galaxy. This would require sophisticated tools of observation and equally highly sensitive skill in mathematics. While answering such a question is certainly interesting and has value and may lead to other discoveries and types of knowledge, it does not cancel another mode of research concerned with the beauty of stars or how one might relate one’s feelings towards stars in a painting or dance and so on. Each domain has its value, methods, language and limits, neither cancelling the other, yet it would be discouraging to favor only one such perspective. The challenge today is to harmonize these “worldviews” rather than to be extreme either way.

Describing something in terms of properties is a different activity than arguing abstractly about philosophies and whereas analytical philosophy tries to avoid mere speculation and adhere to logic as a means of accessing truth based on a scientific-positivistic outlook, the content of philosophy itself remains abstract while the sciences, even in theoretical modelling, is about substances, things, and not simply theoretical and abstract (this includes mathematics in my estimation where a number asserts “there exists  $x$ ...items of this type or a variable which describes some kind of propensity, property or value).

The point is that qualitative research and to the items of objects, in the sense of becoming a form (read: philosophy) rather than simply being an analysis of existing philosophies (or whatever the domain happens to be). The question is does the object, form or text become simply another surface or is it an abstract formulation. It appears that while form reveals meaning, meaning itself becomes yet an additional surface (form). The quintessential point is neither meaning (semantics) nor form (syntax). Form is an epiphenomenon of meaning. It arises out of it; consciousness precedes form, yet itself is embedded in form. In this sense, neither quantitative nor qualitative research can claim neutrality and objectivity. In any event, as a general rule the humanities are exemplified by qualitative methods and the hard sciences by a quantitative approach.

## 2. *Observation 2: The space between these polarities*

Between the extremes of the hard sciences and the humanities, are the social sciences and soft sciences. Areas such as psychology, anthropology, theology, aesthetics, art history and so on can be addressed using both research methods. There is an attempt to categorize and collate information analytically, descriptively and scientifically. On the other hand, there is an imaginative dimension, a speculative space and a theoretical argumentation that goes beyond facts or seeks explanations not immediately obvious according to the surface features of that domain and the particular analysis or question so researched.

In this sense, I argue for the necessary interrelatedness of knowledge and experience, which at the same time elides an absolute description of reality. This is not simply a case of the limitations of our knowledge and experience or one’s partial grasp of reality, but that the very fact that, to borrow a metaphor from physics, light behaves not simply as a particle, a discrete



something, but also flows and vibrates as a wave; it is, as it were spread out and imprecise. It is this nature of nature that precludes a total grasp or elides definitive analysis and understanding. Yet one may experience this interrelatedness or oneness, in the same way our senses cojoin in say the experience of eating a meal, even if one sense (or discipline within the field of knowledge) may be dominant at any one time.

Each such discipline is both independent and inter-dependent. Insofar as each such branch is independent, each discipline is marked by its own internal coherence or form. It exists as a seemingly self-sufficient, robust system and can be understood in its own terms. In this sense it constitutes a language. Now, a language has syntax and semantics and can be learnt, developed and operates as a system of signification. It is based upon rules; its own internal logic (which could be otherwise) and forms a cultural game, that is to say one may apply Wittgenstein's notion here, namely that it is integral to a "form of life" and that its meaning is in its use.

Insofar as each such branch is inter-dependent, one cannot simply understand the form (of knowledge, of a language...) without reference to something else, whether it is a world; another language; other disciplines or branches of knowledge; other systems of knowing and acting in the context of a certain "form of life". A game is only a game, insofar as there is that which is not a game. Ideas, definitions and so on are therefore necessarily inter-dependent in order for there to be a system of signification, even in the instance of one dealing with polar, dualistic oppositions.

Let me make both notions of independence and inter-dependence less abstract and provide a few examples to strengthen this point: One can "do" history of art or say, pure mathematics without reference to anything outside the system. In the former case, I might analyze the formal changes and shifts in style over a period of time and discern the development of such styles within a given period. I may attribute a certain meaning to these shifts in technique and thus establish a picture of stylistic innovations over time and place, depending on the focus of such a study. In the latter case, I can multiply an unknown variable with the same variable and add the exponents without any reference to what these equations or sums so refer; it is simply a formal game that follows its own inherent logic or grammar. One can take any discipline and follow the same reasoning—one simply follows the dictates of its own principles and "does it" accordingly, without any such connecting to other domains. History is history. Politics is

politics. Biology is biology. Mathematics is mathematics. And so on. Its meaning is not simply tautological or redundant or simply a formal game bereft of meaning, for within its own ambit of principles, axioms and analysis, one accrues knowledge within that domain and so progress is made. Indeed, in simpler terms: a cricket game, say a test match is self-enclosed game over 5 days that may be experienced on its own merit -and perhaps in relating to the history of cricket, certainly its rules- without any care or reference to anything beyond or outside those perhaps glorious five days, if one were so inclined. Yet, there is another way to see knowledge and experience; one which recognizes the necessary unity and interrelatedness of knowledge, of things. It would appear perhaps "messier"; on the other hand, it can also yield knowledge and is necessarily a part of each such game, system, language or branch of knowledge at the same time.

Returning to the initial point, one might also envisage a particular discipline as a circle in which are contained further details (circles) and that once again, it is, because it is not something else (another discipline). Paradoxically, in that separation, they are connected, that is to say, the circles overlap (or bond). In this hypothetical image, a line barely exists for constituted by circles or points, it is but a useful fiction or mode. The image approximates, just as the visual sense of seeing is a partial description of a thing and requires the other senses as well as the assimilation of qualia in terms of rational systems of thought: categorizing; naming; counting and understanding processes and so on. To render this less abstract, I can draw from exemplar cases in various domains or disciplines: In physics, one might say particles are "pulled together" via the strong force; in cosmological terms masses are attracted via gravity; in chemistry, the charges create bonded structures; in the life sciences, organic bodies "eat", "replicate", dispose of waste and so on—and in the humanities one can speak of the overlap of say art and history, which one might then call "the history of art" and so on. The upshot of all this is the interrelatedness of all such branches of knowledge. The humanities and the sciences as the apparent furthest ends of the spectrum or line or form or body of knowledge, are connected insofar as science is necessarily human science, not so much that reality "in itself", but our mediation structures, namely our means of understanding it (reality), limited by our senses, categories of thought or methods and perhaps, whether the cup of coffee this morning has rendered me alert enough to pen this down.



With these images and abstractions in mind, one can argue for a “space between”, an overlap, and that whichever discipline or mode of inquiry (research) one employs, their terrain is limited, specific to that language and yet related in some kind of mirroring holistic framework. This will substantiate my argument and convey one way wherein aesthetics, art history; science and sport - apparently disparate and unrelated fields (points or circles)- might be connected. If this is sound, then indeed one can see the explanatory and pragmatic power of the idea that I propose. Admittedly, even if valid, this is but one example and “purists” may dissent and argue for the formal coherence and separation of fields of knowledge; that this isolated example is random, a chance event—and that in the main, one cannot confuse A and B. Fiction is fiction. Nonfiction is nonfiction. My idea (somewhat) equates fiction and non-fiction and that sounds nonsensical. Yet, on close inspection it is not. As the poet is wont to say, reality is a dream. And the physicist might quip, some particles appear to not exist and do not even possess mass.

3. *Observation 3: My approach is in the humanities and therefore qualitative research is most appropriate.*

Having argued for the dual approach of quantitative and qualitative research and then a sort of amalgamation and “unity” of the branches of knowledge, it is still important to emphasize the “split” and apply an appropriate research method. In the case of philosophy and art, and the kind of non-analytical approach I favor, I tend towards a qualitative methodology, just as is the case in the formulation and writing of this article.

The value of this method is:

- A) Open-ended
- B) Creates an “object” (text) with content
- C) Rather than numerical relevance, it proffers ideas
- D) It embraces the subjective, experiential, humane
- E) Counters the overly technicist, scientific cultural

The concept of knowledge is a sort of language-narrative-construction. And their many kinds of stories just as there are many languages. Hence one can approach the object of knowledge – reality – from multiple perspectives and through various tools of analysis. No one method is complete in itself; knowledge is always partial. The necessity of the qualitative approach is one where the construction of knowledge develops the narrative in new ways and seeks understanding that

accommodates and embraces and satisfies not only an analytical bent, but the intuitive and emotional. This does not mean it is simply subjective, for while the sky above may aptly simply be thought of as a conglomerate of stars of certain sizes within the milky way, it is also the starry heavens whose light, both beautiful and mysterious, are harbingers of the future, and indeed the past.

## II. Conclusion:

I have argued in the foregoing that while there is a divide between quantitative and qualitative research methodologies and that they usefully apply to distinct domains of knowledge, there can also be an interdisciplinary space, a space between the hard sciences and humanities. Nevertheless, when dealing with the latter, it is generally such that the qualitative approach is applied, and this is a necessary “weapon” against an overly sterile and cold culture where “reality” is said to be constituted by substances arranged in numerical patterns, rather than as ideas, impressions, feelings – that which falls under the scope of the arts.

In this respect, content applies to qualitative research, while the relationship between variables and their logical distribution (language) applies to quantitative methodologies, yet it is without adding value, like for example the difference between analytical and continental philosophy or between pop art and abstract expressionism. Can there be unity and oneness wherein both sides are equal no matter the value of  $x$ , for example  $5x = 5x$  is true for any value of  $x$  because it expresses an identity. This suggests that although there appears to be a divide between the humanities and sciences and their respective research methodologies (quantitative and qualitative), that surface or appearance conceals their actual identity, their oneness.