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“Is Mathematics Similar to Morality?”

Upon first inspection the spheres of morality and mathematics appear to have little similarity. Common opinion would have us believe that cold, dispassionate mathematics deals in innate truths and falsehoods, far removed from the nebulous and ever shifting concepts of morality with its polysemous distinction between right and wrong. In this essay however I will be arguing that an exploration of the conceptualisation and philosophical groundings of both mathematics and morality reveals their similarities, with the schools of thought trying to define both disciplines having many commonalities.

The age-old question in mathematics that has captured the attention of both ancient and modern thinkers alike asks whether mathematics is “invented or discovered?”. From the time since our very first uses of basic arithmetic humans have been questioning whether they had merely invented a convenient system of logic to be used as a tool to explain the world around them, or discovered an innate truth, intrinsic to the properties of the physical world. This question is inseparable from the way humans think about and use mathematics and many of the greatest advances in mathematical thinking have required a fluidity in its philosophy; from accepting the imaginary number to comprehending the infinite sum in calculus. However, it also draws a striking parallel to some of the central issues of meta-ethics, the study of the metaphysical, epistemological and psychological presuppositions and commitments of moral thought, talk and practice. Within the field of metaethics, philosophers grapple with the nature of moral statements, asking how they should be interpretated and by what faculty or authority we are to learn of them. Just as in mathematics, moral philosophers are tasked with determining whether morality is a quality to be found in the real world or merely a construction of the human mind.

The now famous “slave boy experiment” in Plato’s *Meno* illustrates, and is intended to prove, Plato’s concept of the immortal soul; that all knowledge is known previously by our soul and all we need do to extract this knowledge is question ourselves and engage in a period of introspection. Plato takes a slave boy, ignorant of mathematics, and leads him to discovering the Pythagorean theorem simply by asking him questions, thereby proving his hypothesis. Such proof as offered by the slave boy experiment is arguably insufficient for the grandiose assertion that Plato articulates, but it illustrates the idea of mathematics as being discoverable within the natural world simply by observation and deduction without the capabilities of invention. From Plato’s belief in a world of Forms was birthed the view of the mathematical Platonists, although it now excludes much of Plato’s philosophy. Mathematical Platonism is the metaphysical view that there are abstract mathematical objects whose existence is independent of us and our language, thought and practices.

If the Platonists hold that mathematical objects exist independently of human construction, and thus mathematical truths have the same property, can the same be said about moral statements? Within the many schools of thought of metaethics can be found the moral realists, who claim that morality, whether an action is right or wrong, is an independent fact, to be discovered and used by people to guide their actions. They believe that moral facts exist despite any beliefs or opinions we may have about them, and so the immorality

or otherwise of an action remains, regardless of whether the whole of a society might agree that the opposite is true. This appears very similar to the Platonist conception of mathematics, the mathematical fact that two plus two equals four holding true regardless of whether or not we want it to. Here, morality and mathematics appear to be highly similar under the ideas of two schools of thought, the Platonists and the moral realists; we can no more wish a mathematical truth to be false than we can declare a morally right action to be wrong.

In contrast to this, the arguments against Platonism and realism are more heterogeneous but nonetheless similarities remain. Amongst those that refute the Platonist view of mathematics, known as the Non-Platonists, are the nominalists who claim that there is in fact no such thing as mathematical objects like numbers and that in so far as they exist it is solely in our imaginations. As a subset of the nominalists, the paraphrase nominalists deny that mathematical statements make verifiable declarations about mathematical objects. Instead, they posit that a statement about a mathematical object merely asserts something within the rules of mathematics we have constructed, in the same way as the assertion “the bishop can only move diagonally” is true only in so far as within the rules of chess.

This position bears resemblance to the position of the non-cognitivists within meta-ethics. The non-cognitivists, like the paraphrase nominalists, deny that by making a moral statement you are making a verifiable claim with either a true or false answer. They believe that whilst moral claims might have the surface grammar of statements, they are to be interpreted in some other way. The emotivists might hold that a moral statement such as “murder is wrong”, rather than expressing some intrinsic moral quality of murder, simply expresses your own distaste of the act. Similarly, the prescriptivists elevate the action guiding function of morality above all else, claiming that the statement “murder is wrong” merely states your wish that no one murder, rather than assign a moral quality to murder. Further similarities can therefore be found in the way we conceptualise morality and mathematics, not just within the viewpoint of the moral realists and the Platonists, but also in opposing views, such as nominalism and non-cognitivism.

There are however differences between the philosophical conceptualisation of mathematics and philosophy, chiefly in the differences between the interactions of arguments commonly used by moral philosophers to deny the position of the moral realists and the effects of those same arguments upon mathematical Platonism. An example of two famous arguments used against moral realism, as deployed by J L Mackie in his construction of the error theory of morality, are the arguments from relativity and queerness. The former has as its premise the well-known variations in morality between different societies. But disagreements between two societies on important moral judgements such as slavery does not show that there is no such thing as moral truth. Just because humans have at one point disagreed about the heliocentric model of the universe does not disprove that there exists an answer to the question. Rather the argument from relativity states that if moral truth was real then we would expect some kind of new evidence to motivate changes in ethical thinking as society finally became able to comprehend the moral truth that was always waiting for them. But this has not been the case. No new evidence came to light against

slavery and no one suddenly found a compelling argument against torture that had never even been conceived of before, rather morality has evolved and as such can only be a construct.

The argument from queerness states that if moral truth was out there then we would need some kind of sense to perceive it in order for it to have any bearing on us. In becoming aware of morality or determining whether an action is moral or not we do not use any of our normal faculties. Morality is not able to be seen or heard and it does not appear to come from a long period of introspection or a logical deductive process. It must therefore rely on some supernatural intuitionist sense we have which becomes immediately unpalatable to any true realist. As Mackie wrote “a special sort of intuition is a lame answer, but it is the one to which the clear-headed objectivist is compelled to resort”. Mackie also highlights that there is clearly a link between natural properties and moral properties. The ethereal property of being wrong must in some case be linked to a natural property, such as a wanton act of cruelty, but how can it be linked and by what sense do we perceive this link? Mackie concludes that a subjective framework, whereby we attribute the quality of being wrong to our own subjective response to a natural property is far more accurate.

Here we see a divergence in the response of Platonism to how Mackie argues against realism. In pointing out the flaws of moral realism with the argument from relativity, Mackie could be strengthening the case for Platonism. If it is the variation from society to society of moral truth with seemingly no fresh evidence to motivate this change that dooms moral realism, then surely Platonism stands much more robust against this test. Two plus two has always equalled four, to ancient and modern alike. Indeed, where mathematical truth has appeared to change it has done so motivated purely by evidence, surely a stronger counter argument to any challenge that the argument from relativity could put to Platonism were it to be extrapolated. The argument from queerness also faces a divergence in its interaction with moral realism and Platonism. To the Platonists mathematical truth is not perceived by some queer intuition but rather by a logical deductive process, removing the objection that if there were Mathematical truth, we could not perceive it except with some supernatural intuition.

Other anti-realist arguments also expose differences between the responses of Platonism and Moral realism to challenges against the existence of objective moral and mathematical truths. In conjunction to Mackie’s famous challenges to realism, Gilbert Harman questions the significance of the existence of moral facts, if moral beliefs are sufficient explanation of all human action. Harman claims that there is nothing that cannot be equally well explained by the existence of moral beliefs as the existence of moral facts. Somebody acting morally or immorally could just as easily be motivated by their beliefs as the mysterious guiding force of a concrete moral truth. In fact, Harman posits that the only remaining philosophical “use” of the existence of objective moral facts would be if they were the reason and basis for our moral beliefs, but this seems unlikely. People appear able to change their moral opinions over the course of their life without suddenly becoming aware of a moral fact, perhaps proving that moral beliefs are equally well explained by socialisation and cultural values than innate moral truths. From this basis Harman argues that as moral truths appear

to serve no purpose of themselves or in explaining moral beliefs, their existence is therefore obsolete, describing them as “metaphysical danglers”.

If we were to extrapolate Harman’s anti-realist argument into the realm of mathematics as a challenge to the Platonists, we can see it faces some additional problems not found within metaethics. The existence of an objective mathematical truth is clearly far more useful in itself than the existence of an objective moral truth. Whilst we may be able to explain morality on beliefs, the mere belief that two plus two equals four is insufficient to drive mathematics. It appears vital to accept that at the very least the mathematical argument two plus two equals four is true within the framework of rules constructed for mathematics, even if we do not believe it is a completely independent truth. Harman’s argument, when extrapolated to mathematics appears to reveal a fundamental difference between the two fields of philosophy, with the distinction between moral belief and moral truth being much more ambiguous than the distinction between mathematical belief and mathematical truth.

In conclusion, whilst on the surface mathematics and morality are decidedly different in their practice, maths being grounded in the cold reason of logic and morality seemingly permitting a more subjective practice, deeper exploration of both reveal similarities in the union of the Platonists and the moral realists and also in their counterpoint arguments of the paraphrase nominalists and the non-cognitivists. However, space remains for incompatibility and non-equivalence allowing for those who believe that both mathematical truths exist in the world as independent objects and that moral truths do not, or vice versa. What is clear is that many of the approaches to explaining both maths and morality share commonalities in process, progression and conclusion and it is with that in mind that I conclude they are similar if defined by their constitutive arguments.

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