

Developing an Idea of Teleology through Notions of Infinity:  
A Critical Perspective on Spinoza and Fichte  
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Introductory Remarks

The concept of a goal, which is integral to the definition of a *telos*, does not intuitively bear a connection with something quantitative, but rather some terminal state of affairs that has a qualitative meaning. Furthermore, teleological concepts seem to require some basis in knowledge in important ways, since there is a non-accidental correspondence between the form of the effect with the form that governs the whole of the activity through which it is generated.<sup>1</sup> That is to say, it is implied that there is an all-encompassing awareness of some agent that underlies the relation between cause and effect. As such, this aspect does not challenge our initial intuition since knowledge is not necessarily connected with mathematics either. The infinite, though, naturally carries a special meaning with respect to man's knowledge insofar as it is a notion that both eludes and transcends it. In the realm of possibility, it can refer to an agent's analytic and imaginative powers and quite simply, the will, underlying his moral aspirations, creativity, and potential avenues to self-fulfillment. We can define the actual infinite either intensionally, as being a whole which expresses a reality consisting of neither negation nor reducibility to its parts; or extensionally, as representing a never ending series of existing beings, both physical and mental.

Still, while we now have a clearer idea of how notions of the infinite relate to certain metaphysical or ontological presuppositions, we have not yet established any true connection with knowledge, which seems to be a challenge since as has been said, one is beyond the reach of the other. The solution becomes conceivable when we consider two possibilities by way of Spinoza and Fichte who approach the problem from opposite perspectives insofar as how they situate their unconditional grounds, either more remotely or more enclosed at the level of our own moral awareness. In Spinoza, we have an actually infinite intellect, belonging to God, that refracts knowledge as a prism would do unto light, sustains the unique essences of finite modes, and sets into a motion an infinite chain of physical causes and effects; and in

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<sup>1</sup> Fugate, Courtney. "The Teleology of Reason." 2014. See Academia.edu.

Fichte, there lies a ground which facilitates knowledge through moral self-determination in a way that reflects both an infinity of possible actions and the possibility of an infinitesimally continuous trajectory of progress into the infinite. In both scenarios, we have some entity that is not truly knowable, but rather thinkable due to both its proportions and activities, which gives rise to some form of order and goal-seeking processes which are what make knowledge possible.

One might argue that a more intuitive model for teleology is one that relates more closely to the life sciences because we can easily detect the connection between the form with the system's functionality. For example, Harvey discovered that the vasculature and heart are designed for the sake of transmitting blood and maintaining life, through proving experimentally that the blood circulates.<sup>2</sup> Another example would be the role played by the lungs in breathing. Biology is also where life manifests itself concretely, of course, and therefore it is in this sphere where we can observe the realization of goals, or on the other hand, trials and errors. Although Spinoza and Fichte do not delve deeply into the telic aspects of biology, the material field of action constitutes an end point of their deductions. It is where the ideal and the real intersect. For both thinkers, the body and spirit are closely intertwined and constitute one reality. Spinoza defines God in terms of Nature, his substance as comprising both mental and physical aspects, and the nature of a thing as being the striving towards the preservation of mutual relations of motion and rest of its parts, indicating an intelligence that governs our physiology. In the *Wissenschaftslehre*, Fichte not only puts forth an original view of how our anatomy and physiology jointly reflect a form of self-reference, representing a union of mind and body, but also merges the transcendental with the empirical through his definition of self-consciousness as hinging upon an externally induced moral self-determination in the *Aufforderung*. Despite the possibility to situate these teleological conceptualizations in relation to some philosophy of the life sciences, or at least a standpoint that integrates bodies more directly, it shall be my contention in the thesis that how these thinkers approach notions of the infinite is what determines the ordering and progression of both life and thought in their systems. I think that it is an important endeavor because it is not up until now a claim that has truly been postulated and the secondary literature, in fact, often reflects a contrary opinion that stands on unstable ground.

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<sup>2</sup> Previously, it was thought, namely by Aristotle, that the heart itself was the first generative principle of the embryo.

In her Winter 2018 essay, “The Imagination in Kant and Fichte”, Virginia López-Domínguez attempts to make the argument that in Fichte, a more constitutive imaginative function is essential to a unity that underlies the different faculties of the human mind and a homeostatic balance there and cosmically. For this reason, she claims that Fichte grants it the status of the “basic faculty of man”, building upon its role in Kant as that which mediates between sensibility and the spontaneous understanding, into the most profound of all processes that *generates* the categories of the understanding as well as the pure forms of sensibility, time and space. Its intimate connection with the sensible realm, and by extension feeling, is the source of the creative and vital capacities of an organism, taking us back to this more ‘bio-centric’ based form of teleology, she claims. López-Domínguez contends this line of thought represents a shift away from Spinoza’s geometrically ordered *Ethics* to discredit the view that the mathematical references by Fichte represent anything more than a form of imagery.<sup>3</sup> She is right to point out the expanded role for the imagination, given Fichte’s innovative choice to build his system of freedom around the *Thathandlung*, or action, for it is that faculty which helps one to envision one’s possible actions. As man goes out into the world and encounters obstacles, it is the imagination that constructs possible alternatives; in times of danger, it envisions possible threats; and it is the imagination that presents to him the object of his desires. She argues, therefore, that Fichte adopts this central role for the imagination and in the process diverges from Kant, who adopted the long held view of the faculty as subject to error, delirium, and unwanted representations, and as a result subordinated its role to other faculties of the mind.

Unfortunately, this kind of interpretation fails to recognize the deeper underpinnings of Fichte’s modifications of Kant’s system. While it is true that the German Idealist diverges from Spinoza’s assumptions about mathematics – those corresponding with Euclidean geometry and an analytic viewpoint, and indeed does so in order to construct his own teleological system, it does not indicate any kind of diminution in his

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<sup>3</sup> In secondary literature on Spinoza, there is a similar tendency as illustrated in *Spinoza’s Geometry of Power* by Valterri Viljanen. Viljanen uses geometry as a model to represent God’s power which is purely actual since in geometry, necessity is the overarching principle. He also references geometric deductions based on definitions to explicate Spinoza’s concept of essence, which is that set of properties jointly sufficient and severally necessary for identity, as well as that principle by which everything pertaining to God can be inferred from his definition.

thought of how centrally mathematical ideas figure, but rather an evolution and possibly an advancement in his philosophy of mathematics, in comparison with that of the 17<sup>th</sup> century rationalist from Amsterdam. Indeed, Fichte does relate the synthetic aspects of the imagination as well as the generalizing and certain nature of its 'inner-eye', the intellectual intuition, with that of geometry, to explain both the necessity and the freedom with which the mind acts. What Lopéz-Domínguez overlooks is that the mathematizing processes of the mind in the *Wissenschaftslehre*, and possibly Fichte's notion of mathematics and the infinite, serve as a kind of *check* on the aberrations of the imaginative function. On the other hand, it is really Spinoza's metaphysics that revolves around the maintenance of a kind of homeostasis in a way that is integrated with his mathematical assumptions, and it does so without any active intervention by the imagination to boot. Indeed, his analytic perspective on mathematics – that which relies purely on non-contradictory definitions, is precisely what justifies his indivisible substance and devaluation of the imagination, which counts by dividing things. Fichte does propose a rather robust form of teleology, but it is driven more by a pursuit of progress, and it is not so much fundamentally fueled by the imagination as it is by the synthetic notions of intellectual intuition and the universal will. Further, as I shall demonstrate, it is through developing a grasp of Fichte's philosophy of mathematics that we can carry out a comprehensive assessment of how unified and effective his brand of teleology truly is. It is true that the imagination is a very important aspect in Fichte as it ultimately serves as a bridge which unites the mind's operations underlying theoretical knowledge with those underlying practice. But it is his philosophy of mathematics, which includes a constructive form of geometry, that constitutes the more fundamental channel by which we can gauge both the unity and trajectory of his system. The same is true for Spinoza and that is part of the reason that we ought to compare their competing perspectives in this light.

Given the foregoing, it is worth stating from the outset that we seek to avoid any preconceptions about how to define a thinker, namely Spinoza and Fichte, or a given concept, such as 'infinity' or 'teleology.' Spinoza is known for his affinity for geometry through the title and argumentative style of his work, *Ethica: Ordine Geometrico demonstrata*, but it does not bestow upon him some monopoly on this notion of employing mathematics in metaphysics. On the other hand, while Fichte is generally thought of as occupying a philosophical standpoint

diametrically opposed to Spinoza, there are certain common threads, not only in terms of the pivotal role of their respective philosophies of mathematics, but also in terms of how they define man's relationship with God, the elevated status of the intuition as a form of knowledge, certain aspects of their designated grounds of reality, and their striving to achieve a complete unity. That is to say, Fichte, who of course came later, was inspired by the system building Spinoza, perhaps to an equal degree as he was by Kant's 'Copernican revolution' to an internalist epistemology. By evaluating the merits of the different arguments for analytic versus synthetic views of number and geometry, as well as considering the viability of other concepts such as Cantor's transfinite numbers,<sup>4</sup> we aim to ground our discussion of infinity from a theoretical standpoint. In terms of teleology, it is generally understood as referring to the development of concepts referring to activities whose ends lie within themselves, which seems to be some condition of this non-accidental relation between cause and effect we took note of earlier. How or whether it is possible to synthesize such notions with chance and to determine the necessity or form of changeability therein, are other problems that shall be explored. Moreover, there is the possibility to define teleology either with respect to the unity of the mind's processes and/or that of those corresponding with the universe as a whole, and so we will need to establish a working definition that takes into account the various perspectives advanced in the history of philosophy and by our own analysis.

Before we address the significance of their differences in their philosophies of infinity, we should recognize the high value they both ascribe to mathematics in general, and the link they establish with some form of intuition, which figures at the top of their epistemologies. The basic metaphysical point of reference used by Spinoza and Fichte, respectively, is that of God defined in terms of substance or his infinite intellect, and the self that constructs a world. The forms of knowledge that they prize are in turn applied to these respective domains – namely, substance and its modes in Spinoza, and the self's operations in Fichte. In their magna opera, *Ethics* and the *Wissenschaftslehre*, that aim to lay the foundation for knowledge as such, and elsewhere in their oeuvre, for instance Spinoza's *Treatise on the Emendation of the*

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<sup>4</sup> In the case of Cantor's transfinite numbers, they were at least not originally integrated into interpretations of Spinoza's or Fichte's systems. By incorporating perspectives that are theoretically relevant to these thinkers' premises but which do not necessarily inhere directly in their works, we stretch the limits of that set of possible discoveries from our analysis.

*Intellect*, which seeks to guide man on his path to perfection, both philosophers make the case for regarding mathematics very highly such that its methods can be taken to be a model for their own metaphysical strategies, themselves necessary for acquiring what is arguably the most profound form of knowledge.

Aside from its intuitive meaning, both philosophers rate mathematics highly or highest because of its certainty, exactitude, and reliance on deduction. Spinoza makes the additional point that by knowing a mathematical truth, one comes to “know what it is to know something,” and that this is not true for other sciences. Although, because of his metaphysical constitution of God (consisting of infinite attributes beyond thought and extension), he does not extend this insight into a complete self-reflectivity for man, Spinoza hints here at how his mathematically inspired, deductive metaphysical system can illuminate how one’s knowledge or true ideas are a derivative of the divine infinite intellect. At a more ontological level, the homeostasis alluded to earlier can essentially be understood with respect to a balancing of activity with passivity, or in more physical terms, motion and rest. Naturally, one can employ mathematics to measure to what extent these relations vary or approach an equilibrium. Spinoza’s selection of the intuition used to derive the unknown term in a ratio equated to another ratio, as the highest form of knowledge, takes on significance for these relations of motion and rest, which bears a close relation to a thing’s *conatus*, the force by which it perseveres in existing. Further, the intuition, specifically what he calls the *scientia intuitiva*, reflects an advantage over formulating a procedure or axiom based on experience, in that one grasps the truth immediately, “in a single glance,” without recourse to a more mechanical sort of method which stands independent of true comprehension. The point Spinoza is making is that an intuition based mathematical analysis enables one to precisely and self-evidently define the activity of one part or one mode based on that of the surrounding entities. What I believe will be found to be even more important is how we can come to understand the nature of the ultimate ground, in terms of what kind of infinity by which it can be measured, that sustains these modes and essences. For it is that quality that will prove critical in how the ground modifies the activities of these entities.

The nature and implications of the departure by Fichte from the relativity and metrically driven mechanism<sup>5</sup> of Spinoza will be made

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<sup>5</sup> That is, the notion of defining essence mechanistically and in numerical terms (mutual relations of motion and rest).

clear during the course of this thesis. Fichte first establishes a foundation through some modified form of mathematics to introduce an alternative perspective and ultimately a comprehensive framework to help ensure that both freedom and unity govern his metaphysical system. It seems counter-intuitive to ground mathematics, a science so focused on calculations and relative comparisons, in qualitative, non-metrical standards, and absolute principles of judgment. Yet that is precisely what Fichte does to avoid the trap of a mathematics limited by empty formalisms and circularities, like that found in Euclid's Fifth Postulate, and it is indeed by employing the intuition as his weapon of choice that he achieves this aim. Fichte develops the thought that without a normal line with normalizing direction to serve as a standard for a determination of the parallelism of other lines, there emerges a circular logic between the measure of the two interior angles and the intersection of the corresponding lines, which is what we encounter in the Fifth Postulate. The idea is that without an absolute standard, lines can be demonstrated to be parallel to each other only on a more relative basis, which becomes inevitable especially in non-Euclidean spaces. The straightness and directionality, which are essential to these normalizing lines, are discoverable synthetically by intuition insofar as they are qualities grasped to be necessary to connect two points with each other. Euclid and his follower in Spinoza, by contrast, do not think about geometry in terms of directionality; rather the line is an aggregation of points, which is an analytic definition. The objective at this level of the discussion in the thesis is to establish how these features of Spinoza's and Fichte's presentation are not merely for illustration purposes, but rather serve as groundwork both for their explanations as to the source of knowledge and the nature of teleology. We go through this exercise to show why they elevate mathematics as a form of knowledge, to present the assumptions behind their respective stances on whether mathematical truths are analytic or synthetic, in order to set up the core discussion on notions of teleology and the infinite. As I indicated above, there is some ambiguity about how to define teleology adequately to begin with, and this problem is complicated further when we take into consideration the influence of or interaction with notions of mathematics and specifically, infinity.

It seems that knowledge, and specifically intuition, is integral to how we ought to think about teleology, and its connection with notions of infinity is certainly a subtle one. In our analysis of Spinoza, the first goals here will be to define intuition and then explicate how an intuition of individual essences of finite modes follows from an intuition of God's

infinite essence. The next step, which naturally follows, is to understand the connection between his concept of intuition and mathematics. Although the problem of how to derive the finite from the infinite (necessary to derive the unique essences of things) is not a new one, this *scientia intuitiva* is generally viewed as a form of knowledge that is not necessarily connected with mathematics *per se*, despite Spinoza's choice to use an example of an algebraic equation involving proportions. It will be my contention that the example from mathematics is not truly contingent given different indications some of which has been discussed above. As has been said, what is more fundamental is his notion of an actual infinity, which may have problematic consequences for how to interpret the possibility of some equilibrium of mutual relations of motion and rest, a state of affairs that reflects some form of teleology and one which is graspable by means of intuition. To what extent other analytical forms of infinity, such as Cantor's transfinite numbers, can establish a more seamless transition between different kinds of modes, and potentially a more stable system, will need to be proven.

In Fichte's concept of mathematics, we see traces of his metaphysical strategy to relax the suffocating grip of necessitarianism that we see plainly evident in Spinoza. Whereas the Dutch rationalist, following the doctrines of Leibniz and Wolff, views essences of things as absolutely necessary, akin to the properties of a triangle, Fichte draws inspiration from Kant to deconstruct geometry, concerning himself with the conditions of possibility for the triangle – the point, line, and space. As a result, he determines that geometric truths are synthetic, since the predicates are not contained in the original definition. This carries a meaning for our deliberations over infinity and ultimately, the form of teleology employed in his system. We can see these connections demonstrated first by Kant through his doctrine of mathematical purposiveness since it is there that he establishes a common ground that provides for the serviceability for the solution of many geometric problems in infinite ways. That is, he finds that we need to consider that deeper level of conditions of possibility of geometry, because there are theorems, for instance those that relate to properties of rectangles, that can be unexpectedly derived from other geometric figures such as circles. Furthermore, there are infinite possibilities of solutions to these problems. Although Fichte does not specifically elaborate on Kant's doctrine of mathematical purposiveness, as we have seen, he endorses Kant's stance on geometric propositions as being synthetic, and also seeks out the infinite in this domain. As we have said, a



synthetic proposition is one that reflects ampliative reasoning in some form as we are moving beyond the confines of the original definition. For a notion of the infinite to be synthetic may seem paradoxical, since it already has a never ending quality to it. Nevertheless there are naturally possibilities, namely those that reflect either some limit or some other complementary quality, such as that of unity. Taking the circle as some mathematical representation of God or the absolute, Fichte notes the impossibility and internal contradictoriness of the quadrature of same, and so deduces from this that we can only think in terms of a *potential infinity*. A potential infinity represents a possible advantage for Fichte because it can translate into an unboundedness at the level of the mind that is reduced down to a finite in empirical reality, which is by definition more easily graspable. On the other hand, in another way, it also points to a striving that is not fully actualized.

As we have seen, Fichte develops a foundation for synthetic geometry, which is the basis for his potential infinity, that averts certain problems of Euclidean geometry, such as the circularity in the Fifth Postulate. But one can detect a circular logic in one of his metaphysical preconceptions dealing with the *Aufforderung*, insofar as a recognition of an external moral cue and corresponding other is within one's self-awareness, and yet are also conditional of it. This dilemma seems to underlie other weaknesses in Fichte's system which flow from this intersubjective puzzle. For example, it is unclear how to reconcile the apparent freedom of the will with how the system as a whole progresses morally – that is to say, it is left unexplained who receives priority. Although Fichte resorts to some form of predetermination, in which the first summons was between God and Adam, to in some sense solve the problem, it is not clearly consistent with his other premises, and therefore not fully satisfactory in my view. It is in this context that we can determine which synthetic notions<sup>6</sup> of the infinite can be adapted to Fichte's system to adequately unify it. After all, there is an aim of resolving circularities at a more purely mathematical level, so we should apply the same strategy to the metaphysical one, while preserving that mathematical link.

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<sup>6</sup> For example, problems in Graph Theory, like the Königsberg Bridge Problem, are goal driven and are classified as synthetic. Other mathematical expressions, such as the autonomously differentiating inverse ratio formulated by Hegel to describe the dynamic of the centrifugal and centripetal forces, could be useful in describing the reciprocating and self-limiting Summons.

In the final section of the thesis, I shall articulate how notions of the infinite, drawing on various sources, can shape modern concepts of teleology, in light of what we will have learned and concluded from our analyses of Spinoza and Fichte, taking into consideration their flawed preconceptions and strengths. This is a methodology which draws inspiration from Aristotle who, in his treatise, *On the Soul*, uses a dialectical method to compare various theories of the soul taking into consideration the virtues and pitfalls of each to develop his own solutions. Besides the prospect of making discoveries in this metaphysical enclave, it is my hope that through pursuing this strategy, I will encourage others to approach the history of philosophy in a way that fosters independent thinking and theoretical advancements, rather than limiting that enterprise to a faithfulness to its key figures, notwithstanding the importance of that goal.