

Causality and Becoming: Scotistic Reflections

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Abstract: Becoming is a process in which a thing moves from one state to another. In Section 1, the study will elaborate on the discussion of the Aristotelian causes taken broadly, primarily focusing on the relation between efficient and final causes. In Section 2, the study discusses the implications of Scotus's conception of contingency and freedom, as they are reflected in the relation of the future to the past, for the efficient and final causalities. Similarly in Section 3 an examination of Scotus's conception of matter is conducted. Based on the ideas established in these sections, the study attempts to present an initial Scotistic view of becoming.

Becoming is a process in which a thing moves from one state to another. Following Aristotle, the Scholastics spoke of four types of causes that describe the process of becoming: material, formal, efficient, and final.¹ The material cause refers to what the thing is made of while the formal produces what is formed, the role of efficient causality is to produce transformations in matter or move things from their initial place to another, and final causality pertains to an end.² In Section 1, the study will elaborate on the discussion of the Aristotelian causes taken broadly, primarily focusing on the relation between efficient and final causes. In Section 2, the study discusses the implications of Scotus's conception of contingency and freedom, as they are reflected in the relation of the future to the past, for the efficient and final causalities. Similarly in Section 3 an examination of Scotus's conception of matter is conducted. Based on the ideas established in

Abbreviations: *Lect.* = *Ioannis Duns Scoti, Lectura: Prologue, I-ii, ed. Commissio Scotistica, vol. XVII-XXI, Opera Omnia (Città del Vaticano: Typis Polyglottis Vaticanis, XVII:1966, XVIII:1982, XIX:1993, XX:2003, XXI:2004).* *Ord.* = *Ordinatio, Prologue, I-iv, ed. Commissio Scotistica, vol. I-XIV, Opera Omnia (Città del Vaticano: Typis Polyglottis Vaticanis, I:1950, II:1950, III:1954, IV:1956, V:1959, VI:1963, VII:1973, VIII:2001, IX:2006, X:2007, XI:2008, XII:2010, XIII:2011, XIV:2013).* *Quodl.* = *Quaestiones Quodlibetales [God and Creatures: The Quodlibetal Questions (1975)], trans. Felix Alluntis and Allan Wolter, vol. 12, Ioannis Duns Scoti Doctoris Subtilis Ordinis Minorum Opera Omnia (Lyons: Wadding, 1639).* *QM.* = *Quaestiones Super Libros Metaphysicorum Aristotelis, Libri I-Ix, vol. 3-4, Opera Philosophica (Franciscan Institute Publ. St. Bonaventure University, 1997).* *Rep. I-A* = John Duns Scot, *Reportatio I-a, Prologue, D. 1-48: Latin Text and English Translation*, trans. Allan B. Wolter and O. V. Bychkov, vol. 1-2 (St. Bonaventure, NY: Franciscan Institute, 2004, 2008). *Rep. IV-A* = John Duns Scotus, *The Report of the Paris Lecture, Reportatio Iv-A* (Franciscan Institute Publications, 2016).

¹ For further discussion of the Aristotelian and Medieval discussion of causes, and the difference between them, see Jakob Leth Fink, "Introduction," in *Suárez on Aristotelian Causality* (Brill, 2015), 6-17.

² Following Aristotle, Aquinas defines final causality in the following way: 'And since, as Aristotle says in book 2 of the *Metaphysics*, everything that acts, acts only by intending something, there must be some fourth thing: namely, that which is intended by that which is acting. And this is said to be the end'. Thomas Aquinas, *De principiis naturae* 3.351, in *Opuscula philosophica*, ed. R.M. Spiazzi (Turin and Rome, 1954), 123.

these sections, the study attempts to present an initial Scotistic view of becoming. Through an integration of key Scotistic conclusions from previous elaborations, this study will primarily deal with extrinsic causes and will not present an exhaustive discussion of Scotus's understanding of causality, e.g., the distinction between essential and accidental causes.³

§1 Preliminary Consideration of Causality

Though the four causes doctrine has had a long and varied history, its interpreters, for example Aquinas and Suarez, did not stray much from the spirit of Aristotle's works. As the Scholastics of the late 13th century were well acquainted with the thought of Aristotle, they used the four causes as an integral part of their discussions. In contrast to Suarez who devoted disputations 12-27 to a discussion of causality, and in particular the four causes (13-14 material causality, 15-16 formal causality, 17-22 efficient causality and 23-24 final causality), Duns Scotus uses the four causes throughout his investigations as an integral part of his examinations. As this study does not intend to present a detailed discussion of Scotus's conception of the four causes doctrine but rather to examine how conclusions from previous elaborations shed new light on the understanding of causality and the question of becoming, the following does not rely solely on Scotus's statements but also bases itself on those of his contemporaries, such as Thomas Aquinas. In addition, Scotus's statements will be used to focus on points that are relevant for our examination, particularly on our attempt to develop new insights.

Aquinas explains that while material and formal causes 'are called "intrinsic" to the thing, because they are parts constituting the thing', final and efficient causes 'are called "extrinsic" because they are outside the thing'.⁴ Whereas all the four causes bring about change, only the efficient cause addresses how the change takes place:

The material cause is responsible for change in that it is the item that persists through and underlies the change; the formal cause is the characteristic which the changing thing comes to possess; and the final cause is that for the sake of which the change occurs. But

³ A discussion on this matter can be found in Richard Cross, *Duns Scotus on God*, Ashgate Studies in the History of Philosophical Theology (Aldershot, Hants, England ; Burlington, VT: Ashgate Publishing, 2005), 17-28.

⁴ Thomas Aquinas, *De principiis naturae* 3.352, in *Opuscula philosophica*, ed. R.M. Spiazzi (Turin and Rome, 1954), 124. See also Suarez's *Metaphysical Disputations* 17.1.6.

in addition to these three, something more is needed to account for how the change actually comes to take place.⁵

Whereas the modern mechanistic understanding of efficient causality is concerned with the delivery of motion or momentum from the cause to the effect, the Aristotelian tradition identified efficient causality not solely with the transmitted change but emphasized that what makes an efficient cause a cause is the fact that the change originated from it: it is that from ‘where’ the change begins. In the *Physics*, Aristotle explains that the ‘where’ of the efficient cause is both a ‘where the origin of the motion [comes] from,’⁶ that designates the location where the change begins, as well as, and even more importantly, the source of origination or beginning of the motion.⁷ By holding that efficient causality is that from where the motion of a change begins, efficient causality must be understood from the point of view of agency, not simply as transmitting motion, as the mechanistic billiard-ball view of the universe understands it, but rather as something that actualizes the motion. This origination of change needs to be understood both insofar as the agency uses instruments to exercise causality and insofar as quantity cannot originate an act of its own volition but requires an agency to actualize the quantity in a certain manner. In the first instrumental respect Scotus explains that

“cutting apart” insofar as it is an action does not come from the saw. For if cutting apart is a locomotion, then the saw does not actively move [anything], but merely is moved passively by the principal agent. ... the saw does not of itself possess [the capacity for] cutting apart, but the motion that is imparted by the hand, as well as the cutting apart that follows, are two effects of an agent that acts according to a certain order. ... Therefore neither the saw nor the ax acts with efficient causality, but only passively, insofar as each is moved by an agent.⁸

Instruments are used passively by the agency to bring about the change. In the second respect, because quantity alone cannot effect efficient cause, Scotus explains:

⁵ Thomas M. Tuozzo, "Aristotle and the Discovery of Efficient Causation," in *Efficient Causation: A History*, ed. Tad M Schmalz, *Oxford Philosophical Concepts* (NY: Oxford, 2014), 25.

⁶ Aristotle, *Physics* 243a33-34.

⁷ Tuozzo, "Aristotle and the Discovery of Efficient Causation," 25.

⁸ *Rep.* IV, d. 1, n. 28

[A]ctual quantity is not a principle of any action... how does food nourish by its substantive power? ... in the food itself there is no efficient cause for growth; rather this is to be found in the living [organism] converting the food.⁹

Aristotle did not attribute the ‘where’ of origination only to efficient causality. In the same place in the *Physics* he spoke of the ‘where’ of origination as both efficient and final causalities.¹⁰ This dual attribution is an expression of the fact that final and efficient causes cause together and that this co-causation forms a hierarchy in which final causality governs efficient causality. Final causality does not cause in the manner efficient causality causes, i.e., by bringing things into existence but rather ‘the causality of the final cause is to move the efficient cause to act’.¹¹ Scotus thus does not understand the four causes as being distinct from one another but rather as co-causing in an essentially ordered and unified causation:

The four kinds of causes are essentially ordered in their causation of one and the same thing. ... how then will they [the four causes] produce the same thing if they do not at least cause together? Insofar as they are causing the effect, then, they possess a unity of order. By reason of this order they become a functional unit as regards causation.¹²

From this preliminary discussion we conclude that both efficient and final causes are kinds of causing agencies that, together, co-cause a change, one in reference to its how and one pertaining to its end.

Contingency, Past and Future

In the wake of the scientific revolution led by mechanistic physics, our commonsensical understanding of causality reduced final cause to efficient cause, and our understanding of efficient cause was transformed from ‘a power that brings a potentiality in something else into actuality’ to a ‘mechanical transfer of motion between colliding bodies’.¹³ As defined by the

⁹ *QM*. IX, q. 14, nn. 58-59 (2:580)

¹⁰ Tuozzo, "Aristotle and the Discovery of Efficient Causation," 25-26.

¹¹ *Ord.* I, d. 1, q. 5, n. 182 (2:121). See also *Ord.* I, d. 8, p. 2, q.u., n. 240 (4:289); *Ord.* I, d. 2, p. 1, qq. 1-2, n. 89 (11:80-181); *Quaest. Meta.* V, q. 1, n. 20, 26; cf. n. 20 (1:).

¹² See *De Primo Principio*, 2.29-30; See also *QM*. V, q. 1, nn. 54-59 (1:354-55).

¹³ Tad M Schmaltz, "Introduction," in *Efficient Causation: A History*, ed. Tad M Schmaltz, *Oxford Philosophical Concepts* (NY: Oxford, 2014), 7.

mechanistic imagination, we perceived the world as governed by posterior events that through mechanical and determined collisions dictate posterior effects, which in turn bring about sequential determined effects. According to this view, particularly regarding non-thinking beings, the past contains within itself the power to determine the future and does not require final causation. William Ockham, a forerunner of the mechanistic revolution, stated that

it is no real question to ask for what reason a fire is generated... . [N]atural agents proceed anew from rest into action at the moment when an impediment is removed. For instance, a fire is now close to the wood and previously was not.¹⁴

Henrik Lagerlund explains that wood ‘burns, because that is just what fire does, which means that you only need efficient causality to explain the burning of wood by the fire’.¹⁵ The problem with Ockham’s claim, that is in line with Scotus’s key distinction between natural and volitional faculties/powers, is that his postulation that wood burns because it is what fire does, is not necessarily a true statement, and one could easily imagine a world where fire does not burn, or an instance where a bush burns without being consumed – a theological fact Ockham must accept.¹⁶ This means that one cannot claim that efficient causality is ruled by necessity, though in specific settings it might act quasi-necessarily. This is exemplified in Scotus’s distinction between two types of necessity:

[N]ecessity is twofold: one is necessity of immutability and another of inevitability. One speaks of the necessity of immutability when [something] cannot be otherwise: God is a necessary being in this way. Necessity of inevitability, however, is [present] when an outcome of some future matter is said to be inevitable, although in itself [the thing

¹⁴ Ockham, *Opera theologica IX*, 299-300. Ockham follows Scotus’s definition of natural active potency: ‘the potency of itself is determined to act, so that so far as itself is concerned, it cannot fail to act when not impeded from without’. *QM. IX*, q. 15, nn. 21-22 (4:680, 608)

¹⁵ Henrik Lagerlund, "The Unity of Efficient and Final Causality: The Mind/Body Problem Reconsidered," *British Journal for the History of Philosophy* 19, no. 4 (2011): 593.

¹⁶ Scotus says similar things in *Ord. I*, d. 3, p. 3, n. 525 (3:313). However, the necessity that is presumed does not speak of necessity in the strong sense, i.e., as one whose opposites are contradictory, but rather as necessary to an ordained system but that could have been ordained otherwise. In a recent study Löwe discusses Scotus’s distinction between intrinsic and extrinsic respects. Whereas in intrinsic respects a respect exists necessarily if its extremes exist (e.g., if two things are red then they are similar in respect to their color), extrinsic respects do not necessarily exist when extremes exist. Löwe’s example is ‘you can have the fire and the wood, even in close proximity, and yet no action/[passion] of burning, say, because the wood is wet’. The important point for our argument is that the burning is dependent upon something that is external to the nature of wood or fire and that could easily be different in another possible world. See Can Laurens Löwe, "John Duns Scotus Versus Thomas Aquinas on Action-Passion Identity," *ibid.* early view(2018): 13.

involved] is neither immutable nor necessary. For example, it is necessary with the necessity of inevitability that the sun will rise tomorrow, and other natural movements are necessary in this way, and nevertheless they could be otherwise, and hence are not necessary nor immutable in an unqualified sense... [N]ecessity in an unqualified sense is not found in things or in any effects, but only the qualified type is: because in relation to their proximate causes some effects (namely, every natural effect) are necessary. But in every effect or thing willed by us - qua such - there is no necessity but only contingency.¹⁷

In the Scotistic framework, the laws of nature are necessary not in an absolute manner but are inevitable within a specific ordained state of affairs: ‘Even one that acts by nature, acts for some end, where the teleology is less obvious’.¹⁸ Their necessity is only *secundum quid*, qualified and localized to support God’s preordained goals. In fact, Scotus’s radical conception of freedom, primarily God’s radical freedom, brought him to claim that, if God desires, he can act absolutely and replace the ordained laws with new ones.¹⁹ Efficient causes are thus local to the specific ordained environment that governs specific systems. This ordination is not natural for it requires ordination of one possible system against other possible systems, i.e., the ordination is determined by an act of will which dictates the governing system that rules efficient causality. This localization of efficient causality to an ordained context qualifies the *howness* of the efficient causality insofar as this howness is calibrated to an intended ordained system that serves an intended end, i.e., it is qualified to serve final causality. As the Scotistic world is contingent through and through, except those things that entail a contradiction — to which the laws of nature do not belong — it follows that the laws of nature should be seen as ‘necessary’ for creatures insofar as, in their specific state, God desired them to produce only whatever they produce, but from the point of view of God they are contingently designed to serve his prior and eternal desires.

¹⁷ *Rep.* I-A, dd. 39-40, qq.1-3, nn. 25, 27 (II:471-72).

¹⁸ *Rep.* I-A, d. 2, p. 1, q. 1, n. 32 (II:123-24).

¹⁹ This follows Scotus’s distinction between *potentia dei ordinata* and *potentia dei absoluta*, i.e., when one acts in conformity with an ordained law or when one acts ‘beyond or against such a law, and in this case its absolute power exceeds its ordained power’. *Ord.* I, d. 44, n. 3, (VI:363-64). Wolter’s translation from Allan B. Wolter, *Duns Scotus on the Will and Morality* (Washington Catholic University America Press 1986), 254-55. This, as is well noted in the vast literature, stands in opposition to the common understanding of the distinction between this world as it was actually ordained versus the set of possible worlds out of which God picked this one. For further reading see William J Courtenay, *Capacity and Volition: A History of the Distinction of Absolute and Ordained Power*(1990).

This essential understanding, that efficient causality is also determined externally, stands at the center of the Scotistic reading that subordinates efficient causality to final causality: the ability to determine the future, which is by definition contingent, requires the capacity to choose otherwise, and such a capacity is by definition volitional and future oriented. The Scotistic view holds that there is nothing in the ‘past’ or within efficient causality that makes it capable of determining which future will come about. The past only determines a point of departure that opens a manifold of possible futures. But as it lacks the ability to choose a specific future from among other possible futures, it cannot serve as that which brings about the becoming of the future. The Scotistic contention is that, as reality and the laws that govern it are radically contingent, their determination fundamentally falls under the category of the will, i.e., the capacity to determine one possible alternative rather than another. Thus it follows that past events and efficient causality, even when they do not involve thinking beings, produce effects from within themselves only in a secondary manner, i.e., insofar as they were determined to act in this or that way. Consequently, the movement from the past to the future does not follow naturally from itself, and as neither efficient causality or the past are capable of discriminating and choosing between contingent possibilities, the future must be determined by another type of causality that ‘can perform either this act or its opposite, or can either act or not act at all’, i.e., a causality that falls under the category of freedom.²⁰

Does this mean that only our will decides what will take place? Of course not. We all experience daily the fact that almost everything that happens around us is determined externally. These determinations do not present themselves as possible futures of our choosing. Instead they present themselves as possible alternative futures that will be determined externally, i.e., contingent futures that can be determined otherwise but not by our will. In this respect, whatever determination comes about is simply given to us as determined.²¹

²⁰ *QM*. IX, q.15, nn. 21-22 (4:680, 608). This another type of causality is equivalent to another ‘type’ of physics that is moving from the past to the future as well as from the future to the past in an asymmetrical yet complimentary manner. Whereas classical mechanics is moving deterministically from the past to the future, and thus there is no essential difference between the two, quantum mechanics is sensitive to the asymmetry between the two – and the need to give a *sort* of causal account to the contingent determination of the future.

²¹ It is possible to translate Scotus’s qualification of the distinction between *potentia dei absoluta* and *potentia dei ordinata* to distinguish between situations where the will can or cannot influence the determination of the future. Scotus distinguishes between situations where one has the power to exceed the ordained situation and effect his own desire upon the given (translation: where the will can influence the future), and where one is subjugated to the given situation without the power to use his will to alter the outcome of things (translation: where the will cannot influence

The leap from the past to the future requires a discriminating faculty that determines a specific future and such discrimination is set by a desired end. The Scotistic view is focused on possibilities and the fact that a determination of possibilities requires a will, means that the becoming of the future requires a ‘past’ from where efficient causality exercises its power to leap into the future. As we recall, the ‘where’ of efficient causality has two aspects: 1. the ‘where’ from which efficient cause brings about the leap or change, and which determines the scope of open future possibilities; 2. the ‘where’ of agency whence the change or leap originates. This ‘where’ points to an agency that brings about the execution of the will by using the ax to cut the wood.

Turning the commonsensical-mechanistic perspective of causality — which views the unfolding of events as a sort of pushing from the past to the future into a modal leap model, where one leaps from one set of possibilities to another — means that ultimately causality also works discretely from the future to the past, limiting many possible futures to specific futures. Efficient and final causality works in a complementary manner. Efficient causality determines which futures are possible both in respect to their ‘location’ and to their capacity for actualization. Final causality is the kind of causality that determines the leaping destination, distinguishing it from other possibilities. Though efficient agency determines how much leaping power we have, it is not a quantity but rather something which *has* quantity and knows how to mobilize quantity and instruments to achieve a change. As such, efficient causality does not desire or want whatever it produces.

Efficient and final causalities co-cause together. The question is what kind of co-causation is involved here. Scotus examines two ways by which causes can co-cause essentially, termed by William Frank ‘participative’ and ‘autonomous’.²² Participative co-causation is an instrumental co-causation, such as when the hand and the pen join together in the act of writing: ‘the inferior only exercises its causality by participating in the causality being exercised simultaneously by

the future): ‘But when that upright law—according to which an agent must act in order to act ordinally—is not in the power of that agent, then its absolute power cannot exceed its ordained power in regard to any object without it acting disorderly or inordinately. ... But whenever the law and its rectitude are in the power of the agent, so that the law is right only because it has been established, then the agent can freely order things otherwise than this right law dictates and still can act orderly, because he can establish another right or just law according to which he may act orderly. ... And therefore such an agent can act otherwise, so that he establishes another upright law’. *Ord.* I, d. 44, nn. 4-5, 8. (6:364-66)

²² See *Ord.* I, d. 3, p. 3, q. 2, n. 496 (3:293).

the superior'.²³ In this kind of co-causation the superior cause moves the inferior and thus the inferior cause is only responsible instrumentally for the product, which leaves the superior cause essentially responsible for the effect. In autonomous co-causation both causes, whether equal in power or not, are independent, and no production can come to be without the participation of the other cause. An example of that is the conception of a child where the father and the mother are its co-causes which are independent of each other. As we have seen earlier, Scotus attributes to efficient causality some aspects of autonomy, e.g., he maintained that the ax as an instrument alone does not suffice to explain the movement and that an agent is required to explain the act of cutting the wood. Similarly we have seen that Scotus contends that the food alone cannot act as an efficient cause and that an efficient cause needs to give an account of the process by which the food is transformed into flesh or energy. Efficient causality thus manifests a natural origination of processes. In contrast, final causality causes the origination of things freely. The co-causation of efficient and final causality is that of an autonomous co-causation since no production can come about without the participation of the other cause. However, this co-causation is not between equals for it is the latter causality that governs the former as nature serves the will.

Again, how can final causality actually cause or bring about the future? Aquinas explains that 'the final cause is the cause of the efficient cause, not in the sense that it makes it be, but inasmuch as it is the reason for the causality of the efficient cause. For an efficient cause is a cause inasmuch as it acts, and it acts only because of the final cause'.²⁴ Similarly, understanding that final causality lacks the efficient force required to enforce the bringing about of the future, Scotus accepted Aristotle's contention that in contrast to efficient causality that 'moves properly', 'the final cause moves metaphorically the efficient cause to bringing about its effect'.²⁵

In his commentary on the fifth book of Aristotle's *Metaphysics*, Scotus devotes extensive treatment to the question of in what sense the end can function as a cause. In other words, if the end in itself does not 'really' exist, in what sense is it said to exist at all, and more importantly, what is the manner by which it causes? Scotus holds that the end as a cause is something that has

²³ William A Frank, "Duns Scotus on Autonomous Freedom and Divine Co-Causality," *Medieval Philosophy & Theology* 2(1992): 154.

²⁴ Thomas Aquinas, *Commentary on Aristotle's Metaphysics*, trans. John P. Rowan(Chicago: Regnery 1961), 5.2.775.

²⁵ *Ord* I, d. 1, q. 2, n. 78 (2:59-60). See also *Ord*. I, d. 2, q. 1, n. 57 (2:163); See also *QM*. V, q. 1, n. 39 (1:351).

a quasi-objective and formal being (*quasi esse obiectivum et esse formale*). He rejects the idea that an end as a potential being can be a final cause that causes the efficient cause and contends that the final cause must be real and really exist. A final cause does not move as a future or potential entity, but rather when it is good or desirable in the mind and willed or nilled by the will. The final cause is thus an intended and desired object: ‘The end is a cause insofar as it is in the mind of the agent. ... it is there as having a quasi-objective and formal being’.²⁶ The end exists in the mind insofar as it is desired, and this desire is prior to the efficient act whereby that which is desired is attained. In this respect final causality is prior to efficient causality.

This desirability can desire an imaginable outcome. There are different types of thing one can desire. One possibility is to wish for something, e.g., I wish I were a billionaire. Such a wish does not allow itself to be translated into practical steps. However, this does not mean that such a wish is without any consequences, for wishing to be a billionaire may cause a passion of jealousy or frustration that, in turn, would sabotage my relations with others.²⁷ Thus, though wishing something does not entail practical implementation, it might affect us by creating within us a disposition toward things. In another way, the will desires things more concretely, things one can actually bring oneself to attain, e.g., writing and publishing a paper on Duns Scotus and causality. To do that, I need to be convinced that my idea is worthwhile, I need to bring myself to read the needed literature and work out different conundrums as I progress. This practicality is essential when one considers final causality, for final causality becomes efficient only when one commits oneself to attain an end. This commitment means that the will makes itself will both the end as well as realizing the needed choices that are required along the way – and the costs of such realizations. Final causality thus does not only commit one to an end but to a practical execution of the will at different points that actively transforms one’s capital (i.e., efficient resources) and molds it into the desired end.

Does placing final causality and the role of the will at the center of the causal process offer new insights into the nature of becoming and how it comes about? The former question asked in what sense final causality is said to exist and cause. The answer Scotus gives is that final causality exists in the mind and that the act of willing causes what the will desires as an object: ‘The end is

²⁶ *QM*. V, q. 1, n. 77 (1:357).

²⁷ Giorgio Pini argues that the first sin of Lucifer might be the result of a wish. See Giorgio Pini, "What Lucifer Wanted: Anselm, Aquinas, and Scotus on the Object of the First Evil Choice," *Oxford Studies in Medieval Philosophy* 1(2013).

a cause insofar as it is in the mind of the agent'.²⁸ This answer is insufficient for it does not present us with a clear understanding of how willing a specific end produces a becoming process and its dynamics. In a recent study,²⁹ the problem of Christ's passions was examined, with a particular focus on the question in what sense a perfect and immutable being can be said to suffer, which implies imperfectness as well as undergoing a change. Let us examine briefly Scotus's account.

Scotus holds that when the will wills, it freely and actively positions itself in contiguity to the perceived objects or events. This act of positioning itself in relation to objects or events measures them according to their desirability and consequently wills or nills them:

Even if something is of its own nature in agreement with the will, for example the ultimate end, it is ultimately in agreement by an act of the will which accepts and finds it complacent. And such an agreement is made by willing the object, or a disagreement by refusing the object . . . an approximation follows this object, namely an apprehension of the object to be willed or nilled, and from this last thing, it seems that a passion of the will seems to follow from the presence of the object, joy or distress.³⁰

It is one thing to will or nill an event or an object that has not yet come about, where the will is free to determine its willing, and another thing to accept or reject an event or an object that has already taken place and which is presented to the apprehension of the will as a fact. For the will does not find a thing or an event acceptable simply as it appears but is rather disposed in advance to accept it, according to what it willed or nilled, and so while the apprehension is taking place, the acceptance or rejection of what is perceived is quasi-necessitated:

The will is not necessitated absolutely by the object, however, among those things that are shown to it, there can be a necessity of consequence, just as in "if I want, I want".³¹

Thus, since the will's act of willing or nilling pre-wills or nills, the coming of the willed/nilled object, a passion of satisfaction or dissatisfaction necessarily arises when the willed or nilled object appears. This extends to the will's relation to its body, as when the will accepts or rejects

²⁸ *QM*. V, q. 1, n. 77 (1:357).

²⁹ *Incarnating the Impassible God*, forthcoming.

³⁰ *Ord*. III, d. 15, n. 47 (9:498). Translation mine.

³¹ *Ibid.*, n. 49 (9:499-500). See also n. 50.

sensual pleasures, or when one may feel satisfied after significant labor that caused pain to the body.³² The crux of Scotus's account lies in the fact that though the will as a willing power determines what it wills or nills, the passion that accompanies the apprehension of the willed or nilled object cannot be produced by the will itself, 'for if the will was its efficient cause, then it would be its own operation, just as 'to will' is caused by it and is within it'. But this is evidently not the case in passions such as sadness or other negative passions that arise unwillingly.

While the passions of the soul are accidental insofar as they are caused by an external object that could be otherwise, they are not accidental in the same manner as in Aquinas's account of the passions.³³ In Aquinas's account the rational soul suffers passions indirectly due to its unification with the body via its sensual capacities. Such sufferings are essential to the nature of such a union between body and soul, but they are not essential to the nature of the rational soul, i.e., they are accidental to it due to its state in the world *pro statu isto*. In other words, for Aquinas the effect of bodily reality, which is borne by efficient causality, has an essential effect on the soul. In Scotus's case, though the specific passion and its cause are accidental, being subjugated to such passions is essential to the rational soul as a willing thinking being. Willing requires intention, anticipation and care, and if one were to be utterly indifferent to what is to come in the outer world, one would be in a position whereby one is utterly unaffected by anything external. Thus, whereas with Aquinas efficient causality has an essential impact on the soul, for Scotus efficient causality impacts the soul only accidentally and the more perfect the soul is the less it permits bodily passions to shape it.

The passions of the soul are useful not only to elucidate how final and efficient causes co-cause, but also to explicate the dialectics between them. The will, by desiring an outcome, positions itself. This positioning is not simply a positioning vis-à-vis objects or events taken simply but rather with respect to possible futures. By positioning itself in relation to possible futures, the will commits itself to possible outcomes and the passions that will arise, which would be positive passions if a desired outcome came about or negative passions if a non-desired outcome

³² *Ord.* III, d. 34, q.1, n. 48 (10:199-200)

³³ For further reading on Aquinas's account of the passions see, among others, Paul Gondreau, *The Passions of Christ's Soul in the Theology of St. Thomas Aquinas*(Scranton: University of Scranton Press, 2009); Robert C. Miner, *Thomas Aquinas on the Passions: A Study of Summa Theologiae : 1a2ae 22-48*(Cambridge, UK: New York: Cambridge University Press, 2009); Thomas G Weinandy, *Does God Suffer?*(University of Notre Dame Press, 2000).

emerged. These passions, that are the product of the will's comparison between what it wants and what came about, act as efficient causes to the extent that they efficiently move the will to act. This is most evident with negative passions that produce active measures to attain the desired goals. Let us consider the following example.

Sarah is forty years old without a mate and desires to have a child. She desires a child not solely in a wishful manner, but she is now committed to having a child. This commitment drives her to consider possible alternatives, either to find a husband, or to find someone with whom to have a child together without becoming a couple, or, in the last resort, to have the child alone. These alternatives are not of equal value as she would prefer to have a child with a husband, both for the child's sake and for her own. But she is willing to accept the fact that, as she has not been able to find a husband up to now, looking for the love of her life, or something close to it, might jeopardize her primary objective – having a child – and she is willing to sacrifice, at least in the immediate future, the goal of finding such love. Thus, if such a husband is not found in the coming few months, she will try to find a partner who also desires to have a child but without creating a fully functioning family (She is already starting to look around and to prepare the ground for a possible partner even before the first options expires). This is not the best situation but it is better than raising the child alone, so she thinks. As she is not young any more, she also starts to inquire and make the needed appointments with clinics that assist women to become pregnant. On top of all that, she is aware of the fact that her chances of conceiving a child are low and she starts fertility treatments. As she proceeds with the process she is not rewarded with good fortune. She did not genuinely believe a true love would present itself soon enough but was willing to give it one last chance. But, as she suspected, no suitable partner turned up. Passions accompany her throughout her journey, expressing the sacrifice her desire requires. As she let go of the preferred possibility, she mourned her youthful dreams of the perfect family and romantic love. But she remembered what was at stake. As she could not find anyone who would be willing to share parenthood without forming a family, she mourned her future offspring's lack of a father, the confidence and other important traits fathers provide their children. She accepted her fate and moved forward to obtain a sperm donation. Ultimately the child is what she truly desired. After a few implants that did not produce a child, and the suffering that accompanied the lack of ability to fulfill her desire, she started more active fertility treatment. This cost her a substantial amount of money, but she was not willing to give up on her desire for a child. Our

story has a happy end but there are many stories that do not share such an ending. Sarah finally conceived a child and had a cute little baby. Her desire was fulfilled. She had to suffer and pay a lot to attain it. She will raise her child without a father, without a companion (at least unless things change). All the concessions she made along the way were made in order to pursue her primary desire, making sure that the small window of possible opportunity she had, that was closing, would not shut off completely. As she moved along from a more desirable future to a less desirable one, her concessions bought her the possibility to actualize her desire. These concessions directed the way the efficient causality affected her in conceiving her baby. Without giving up her search for a husband and later a father for the child, the baby would not have come into being. Without starting the use of sperm donation, and later fertility treatments, her baby would not have come into existence. All these concessions that are grounded in Sarah's commitment to her primary goal are translated into efficient causes that moved her to make decisions without which the child would not have come into being.

In *A Scotistic Examination of God's Freedom* it was shown that Scotus's understanding of divine foreknowledge and his contention that God does not know in advance which future will come about, entails God's having foreseen in advance all possible futures and having designed in advance his reactions to any possible future in order to make sure that his intended goals are achieved.³⁴ As a result, God discriminated, before creation, between a sanctioned state of affairs, and an unsanctioned state of affairs, i.e., every state of affairs that takes place, even though it was not necessarily a desired outcome, was approved in advance insofar as it could deliver whatever goals God had chosen before creating the world. By foreseeing all future possibilities, and determining God's reactions to every possible scenario, God's actions are determined in four stages. 1. God chooses his objectives, the why for which he created the world. 2. He evaluates each possible future and measures it according to its desirability. 3. These comparisons are accompanied by passions that express God's precepts. 4. God determines in advance his reactions to the unfolding of events. It has been shown that as God does not know the humans' choices ahead of time, and as he needs to determine his actions in advance without knowing how the future will unfold, and, presupposing that God aims to optimize his a priori decisions, God must rely on an autonomous algorithm that measures in advance which alternative is better and

³⁴ Liran Shia Gordon, "'All Is Foreseen, and Freedom of Choice Is Granted': A Scotistic Examination of God's Freedom, Divine Foreknowledge and the Arbitrary Use of Power," *The Heythrop Journal* early view(2017).

determines appropriate reactions to different future outcomes. In this respect God is just like Sarah who considered in advance the possible outcomes as well as the commitment to and reaction to the future as it unfolds. Like Sarah, his reactions are the result of a prior goal which governs his reactions, and a calculus which aims to maximize the amount of goodness that accompanies the attainment of the desired good, without jeopardizing or preventing the attainment of such a good. Also, like Sarah, God is subject to passions that accompany the choice of the desired good and the unfolding of events. However there are also two essential differences between Sarah and God. Unlike Sarah, God is all-powerful and, consequently, if God truly desires a 'child', he will have a child. Also, and perhaps more interesting for our discussion, the efficient causality that is in play in God's case moves God to intervene in reality (This intervention, as *A Scotistic Examination of God's Freedom* shows, is preordained). This could be effected through 'miracles' or by changing the laws that govern reality. As we recall, Scotus contends that God can replace one set of ordinate laws with another. This alteration causes a change in the manner reality operates and can bring about new outcomes. When Sarah plans first to try to find a husband, then to look for a partner, and finally to have a child alone, each scenario expresses a different set of laws that is replaced in accordance with her ability to attain her goal. They are not desired equally and she switches from one set to another as the window to attain her goal narrows.³⁵

§3 Matter, Causality and Memory

The aim of the previous section was to understand how Scotus's future-oriented thought influenced the way efficient and final causality co-cause together. Whereas the former section was guided primarily by Scotus's philosophy of contingency, what constitutes possibilities and the will as a power that can select from possible alternatives, this third section is ontological. Its aim is to understand what kind of being were the free determinations that section two discussed, and by presenting a proximity between matter and memory, the section argues that causality

³⁵ It is needless to say that 'our' Sarah corresponds to Abraham's Sarah. One must wonder why God made it so difficult for them to have Isaac. When one takes contingency seriously, one understands that everything could have been otherwise. What would have happened if Isaac were not to be born? Sarah's story exemplifies more than anything the indeterminacy of the future.

ultimately should be understood not only from a physical point of view but rather from the aspect of information and meaning.

As we recall, Scotus explained that the quantity of food alone cannot be the efficient cause of growth but requires an organism to convert it. In *Reportatio* IV Scotus makes a similar argument, this time arguing that quantity alone does not suffice to explain ‘why something exists dimensionally in a place’ and that this requires ‘matter [that] founds quantity’ and converts it into existence in place.³⁶ This affinity between how matter converts quantity into existence and how the organism that acts as efficient cause converts food/quantity, directs us to examine the relation between matter and causality.

The governance of final causality over natural things and their *howness* is evident in Scotus’s treatment of place. As was shown elsewhere, matter’s relation to place needs to be distinguished into its absolute and contingent aspects.³⁷ Scotus notes that whereas the first four relations of Aristotle’s conception of place treat the body as a quantum, the fifth relates to it as a natural entity.³⁸ This allows Scotus to distinguish between place taken in itself, and place as it is taken according to the contingent actuality of the objects. Place, as the container, relates to the absolute characteristics of place. It remains the same not in actuality, but mathematically according to its dimensions. In contrast to the absolute aspects are the contingent and relative actuality of bodies that apply to things in this specific world and settings. By laying directionality and other specific properties of place aside, Scotus is able to distinguish between the thing as it could be in any possible world, and the thing as it exists in this or that specific physical setting.

Bodies are thus considered according to the aspects which apply to them absolutely, i.e., their dimensionality, as well as that which applies to them contingently, i.e., their specific places and relations to other bodies, including motion. Being in motion or at rest is no longer considered an

³⁶ *Rep.* IV-A, d. 11, q. 2, nn. 45-46 (2:396-97).

³⁷ Liran Shia Gordon, "Matter, Place, and Being from a Scotistic Point of View: A Bypass to the Psycho-Physical Problem?," *Philosophy and Theology* 28, no. 1 (2016): 119-20.

³⁸ *Ord.* II, d. 2, p. 2, qq. 1-2, n. 216 (7:253); *Lect.* II, d. 2, n. 191 (18:161). See also Richard Cross, *The Physics of Duns Scotus: The Scientific Context of a Theological Vision* (Oxford : New York: Clarendon Oxford Press, 1998), 194-95; Tiziana Suarez-Nani, "Angels, Space, and Place: The Location of Separate Substances According to John Duns Scotus," in *Angels in Medieval Philosophical Inquiry: Their Function and Significance*, ed. Isabel Iribarren and Martin Lenz, *Studies in Medieval Philosophy* (Aldershot, England ; Burlington, VT: Ashgate, 2008), 99; Olivier Boulnois, "Du Lieu Cosmique À L’espace Continu? La Représentation De L’espace Selon Duns Scot Et Les Condamnations De 1277," in *Raum Und Raumvorstellungen Im Mittelalter*, ed. Jan A. Aertsen and Andreas Speer, *Miscellanea Mediaevalia* (Berlin ; New York: de Gruyter, 1998), 320.

internal property of a thing, but one of its relative features. For this reason, Scotus explains that there is no contradiction in saying that a thing is both moving and at rest, for these terms only express relations.³⁹ This last point indicates that, for Scotus, physical notions that are closely related to efficient causality, particularly motion, do not express ontological or metaphysical features of things in a primary way but only secondarily.

Scotus holds that matter has two kinds of ‘where’. One is definite and belongs to matter by virtue of its own proper essence ‘insofar as it is a certain substance,’ whereas the second type, the dimensional, ‘belongs to matter by virtue of quantity, which is founded in matter and through which [matter] receives dimensional extension’. Cross explains that following Giles of Rome, Scotus introduces a primitive conception of mass named *quantitas materiae* in order to explain ‘what remains constant over the processes of condensation and rarefaction’.⁴⁰ Cross adds that the primary difference between Giles’s and Scotus’s usage of *quantitas materiae* was that Giles located it as part of the category of quantity, while for Scotus it belongs to the category of substance.⁴¹ According to this view, substance, i.e., the matter which things are composed of, possesses a potential for extension, like a balloon that expands and shrinks while undergoing no substantial change. Departing from this primitive conception of substantive mass, we can now see how matter can receive quantity such that the reception does not modify the substance: ‘matter, [remaining] in the same definitive “where”, receives a new form and quantity, through which it acquires a new dimensional “where”— nor could matter naturally arise elsewhere dimensionally unless it existed elsewhere definitely’.⁴² The notion of *quantitas materiae* offers a limited though important intuition as to the autonomous element that makes efficient agency efficient agency. As we recall, the ax and the food are not efficient causes and require an agency

³⁹ *Quodl.*, 10.43 [249].

⁴⁰ Cross, *The Physics of Duns Scotus*, 159-60. For further reading see Max Jammer, *Concepts of Mass in Classical and Modern Physics* (Cambridge: Harvard University Press, 1961), 37-48; André Goddu, *The Physics of William of Ockham*, vol. 16, *Studien Und Texte Zur Geistesgeschichte Des Mittelalters* (Leiden: Brill, 1984), 101-06.

⁴¹ Scotus explains that this treatment of mass under the category of substance allows the corporality of the substance to transcend the accidentality which accompanies the category of quantity: ‘because in an extended substance, [the existence of] parts [of the substance] side by side with other parts of the substance is not the same as its quantity. Otherwise the corporeal substance would be as simple quantitatively as the intellectual soul. Hence, I assume that a part of substance is something different from [simply] another part of the quantity. Moreover, it is impossible that quantity be the causative principle of substance in [that] second part, because it is not an active form. And in this way each part of the substance is naturally prior to each part of the quantity’. *Rep.* I-A, d. 17, q. 2, nn. 174-75 (1:510-11). Also *Lect.* I, d. 17, n. 219 (17:251-52).

⁴² *Rep.* IV, d. 11, n. 46.

that brings about the ‘chopping’ motion or the actual nourishment. As opposed to plain accumulative quantity, the notion of *quantitas materiae* allows us to think of a relation between raw quantity (the food) or passive forms, and substantive quantity that is capable, through its modifications, of operating on raw quantity or passive forms.

In order to further deepen our understanding as to how final and efficient cause can co-cause, we will implement an idea that was developed in a previous study on matter.⁴³ The core of the idea was that if we take seriously and in an ontological manner Scotus’s claim that being is said in a univocal sense, it follows that being must be capable of explaining both non-thinking beings, primarily matter, and thinking-willing beings. Following Scotus’s explanation of the different moments of God’s act of thinking, it was shown that non-thinking beings perform two of the four moments whereas thinking-will being perform higher moments as well. The kind of beingness that can perform the moments involved in the thinking act, and which a non-thinking being only performs in a limited sense, is what Scotus calls *subjective potency*.⁴⁴ This is an actual being which is capable of receiving forms in a secondary manner, i.e., on top of its primary activity.⁴⁵ This sort of potency stands in contrast to *objective potency* that speaks of what might happen. Matter is an actual being which is ‘a being in potency to all acts which it is able to receive’.⁴⁶

It was shown that there is much structural similarity between the divine mind and matter (and the human mind as well), and that Scotus’s analysis of divine thinking under the Augustinian model of *memory*, *intelligence* and *will*, is applicable to matter and sheds new light on the relation between matter and form. It was argued that what distinguishes between different types of beings is not their beingness but rather the number of moments they perform and that consequently the seeming abyss between a thinking and a non-thinking being is not as deep one tends to think. In fact it was shown that the limited operations non-thinking beings perform can be understood as part of the thinking process without which thinking would not take place. Thinking of matter as a

⁴³ Gordon, "Matter, Place, and Being from a Scotistic Point of View: A Bypass to the Psycho-Physical Problem?," 115-17.

⁴⁴ *Lect.* 2.12.49.30, 62 [19:80, 93]; *Rep.* 4.11.86 and the discussion of Potency in *QM* 9.1; for further reading see Ansgar Santogrossi, "Duns Scotus on Potency Opposed to Act in Questions on the Metaphysics, IX," *American Catholic Philosophical Quarterly* 67, no. 1 (2008).

⁴⁵ William O Duba, "Aristotelian Traditions in Franciscan Thought: Matter and Potency According to Scotus and Auriol," in *The Origins of European Scholarship: The Cyprus Millennium International Conference*, ed. Ioannis Taifacos (Stuttgart: Franz Steiner Verlag, 2005), 151.

⁴⁶ *Lect.* II, d.12, n. 37 (19:82).

type of memory and memory as material offers a new way to approach the relation between material, formal, efficient and final causalities. Scotus explains that there are three ways to understand memory:

Memory, or the intellect functioning as memory, can be taken in three ways: in one way as conserving the species of the past things as past. ... In another way as conserving the species representing the objects in themselves, whether they really exist or not. ... A third way is insofar as [the memory] has some principle whereby it elicits actual knowledge, which, however, does not stay there without a second act.⁴⁷

The first type of memory, the common understanding of memory, functions as the conserver of past events as they have occurred. In this sense, matter does indeed conserve the past insofar as it enables past events to be written/received into it, either corporeally or ‘mentally’, by wiring thinking matter, in the human case into our brains (as opposed to God or the angels). It is important to note that the past written into matter is accidental to it, and matter itself does not act as an agent but only as a receptacle of the past. The act of storing the past in matter requires either an agent or an accidental causal act that leaves its mark on it. Moreover, it is clear that different compositions of matter and form are more or less suited to preserve past events. Thus, though it is matter which makes conservation possible, the material form is responsible for the degree of perfection of conservation, e.g., paper preserves markings much better than water. This act of matter as a carrier of the past, or of forms, is what we can call the material cause which is independent of the forms themselves but without which the forms could not have become memorized or actualized.

The second type of memory maintains the species or forms as standing alone and for themselves. This kind of memory is not a memory of things that have happened in reality, but rather what I have called a transcendental remembering. This transcendental remembering served to explain how one can know things that one never witnessed, for example ‘I know I was born... [though] I recall no act of mine that had this or that as its object’.⁴⁸ Such truths cannot be deduced *a posteriori*, nor can they reside within us simply as innate. If they could, we would be able to perceive them within us, which would condition them temporally; but the situation requires a

⁴⁷ *Rep* I, d. 3, q. 4, n. 109 [1:215]

⁴⁸ *Ord.* IV, d. 45, 3 [4-5] Translation from Wolter and Adams 1993, 213-14.

different kind of remembering which makes it possible for us to ‘remember’ necessary truths which we never observed before. The capacity of matter to receive any material form is equivalent to recalling such a form from its transcendental memory. That which is remembered is intrinsic to the nature of the thing remembered and is not conditioned by reality itself. This intrinsic conditioning is what we can call formal causality.

The third type of memory, which elicits actual knowledge, is extracted from memories. This act brings together efficient and final causalities since eliciting is an act of the will, while the extraction itself, or *declaration* in Scotus words, is carried out in accordance with one’s efficient power of declaration. It is one thing to will a recollection of a horse and another thing to extract a well-detailed horse: ‘that which produces actual knowledge and gives it this power of declaring can be said “to declare by this knowledge” as if by way of efficient cause’.⁴⁹

In *Rethinking Intuitive Cognition*, it was shown that the act of remembering sustains a mutual relation towards its primary object of remembering, the *self*, and a non-mutual relation to the objects remembered.⁵⁰ This non-mutuality grounds the governance and freedom of the will as the superior cause that extracts memories. It can be said that in the third type of memory efficient and final causality form an autonomous co-causality where the latter governs the former inferior cause. It is important to note, as Scotus does, that the object of the act of intellection or recollection is not the ‘final cause because the object, being primarily what the act is about, is not the thing for the love of which the act is elicited’.⁵¹

In fact, efficient causality is present both when a memory is formed or extracted by a willing power, and when a ‘memory’ or a state of affairs is induced in something accidentally, or quasi-accidentally (when that act can be traced to be a result of a volition of an agent, e.g., by God). As Scotus rejects pure accidental causality as mere chance,⁵² it follows that either efficient causality

⁴⁹ *Ord.* I, d. 32, q. 1, n. 23 (6:220)

⁵⁰ Liran Shia Gordon, "Rethinking Intuitive Cognition: Duns Scotus and the Possibility of the Autonomy of Human Thought," *Philosophy and Theology* 29, no. 2 (2017): 237.

⁵¹ John Duns Scotus, *On Being and Cognition: Ordinatio 1.3*, trans. John van den Bercken (New York: Fordham University Press, 2016), p. 3, q. 2, n. 479, p. 220.

⁵² Scotus explains that “being accidental” is not named so in the sense that “accidental” deprives per se unity (*perseitas*) of the being in itself, but in comparison to a given cause. And in that way ‘accidental being’ refers to some existence with regard to a given cause, for which the event or existence is not essentially ordered. This occurs despite the intention of this cause which tends on its part to something else, so that this [existence or event] is joined [to this cause] in the minor part and accidentally’. *Quaest. Meta.* VI, q. 2, n. 17 (4:41-42) Also he writes: ‘[I]t seems there is an equally determinate cause related to the event of any effect that is natural’. *Ibid.*, n. 32 (4:50).

is executed directly or indirectly. In this respect efficient causality is indifferent to the question of ‘who’ uses it.

As opposed to thinking beings, matter is deprived of volitional power and is thus incapable of extracting anything or anyone from itself. Matter is passive and only allows external causal acts to actualize it by means of recollections which ‘use’ it while remaining external to it. Due to matter’s total passivity, the recollection is not its recollection; it does not hold a generative relation with respect to the form in question, nor does it belong to it. Matter could be said to behave like a servant that receives messages, but, out of indifference, simply does not read their contents. Matter is an *It*. For that reason, matter is capable only of what Scotus calls an imperfect memory, which refers to a potential act of memory, whereas thinking beings are capable of perfect acts of memory, which bring the act of remembering, in its fullness, into operation.

Just as the neural physical activity of our brain is incapable of explaining the act of thinking itself, so efficient causality cannot explain the outcome of that which it moves. When one thinks of causality as part of a remembering act, one can leap from the mechanistic perspective that views causality as a blind deterministic process that is limited to its quantified measures, to a cosmological understanding that views the causal processes as a joint elicitation of meaningful information and ‘memories’. This analogy between the neural activity of the brain and the act of thinking, and efficient to final causality, offers us an insight into the way final causality causes or directs efficient causality, or more exactly, an insight about where not to look in our attempt to explain how final causality causes. When one examines scans of brain activity one will only find traces of neural activity. One will not find traces of thought. This is a plain consequence of the fact that the sensors used to detect physical activity are affected only by efficient causality, i.e., if a neuron is fired a corresponding pixel shines on the screen. Sensors do not light up intents (though sophisticated AI meta-analysis can deduce an intent – but such an analysis is not based only on the measurements). Measuring becomes trustworthy if it accurately measures that which is being measured, and the most accurate sensors are those which report 0% false negatives or false positives, i.e., they act as if in accordance with necessity. But final causality does not follow necessity but rather contingency and for this reason its causality is called metaphorical:

[T]he end moves the will metaphorically, but not necessarily. That “what moves effectively, however, moves necessarily,” is true in regard to natural things where [an

involuntary] efficient cause does the moving, and in this case the end has to move in a metaphorical sense. But in a potency that is free, namely the will, the end only moves the efficient cause contingently. Therefore, the end moves it only contingently and metaphorically.⁵³

Final causality cannot be depicted not because it does not exist or cause but rather because the nature of measurements is such that they measure well-determined quantified effects. Measurements, by definition measure the traces of efficient causality, its past doings, and are incapable of representing or ‘measuring’ final causality’s ‘metaphorical’ determination of future open possibilities. As no measurement based on efficient causality can testify that final causality directs reality, one must trust one’s own experience.

Final Remarks on Becoming

Bookmark. The presented study offers an interesting reading into the nature of *becoming*. Being and Becoming are at the core of philosophical thinking. The history of philosophy can generally be summed up as a continuous dialectics aimed to reconcile Parmenides’s immutable Being and Heraclitus’s continuous Becoming. Alas, all sophisticated attempts cannot eradicate the non-compatibility of Being and Becoming.

The traditional understanding of becoming presupposes a transition of generation and corruption, that involves the annihilation of something in the process of becoming something else. This means that becoming involves a nothing becoming something and a something becoming nothing. But Parmenides, as every first-year philosophy student learns, emphasizes that nothing does not exist and that being is immutable and eternal. This fact, that the nothingness within becoming contradicts being, never delayed the development of philosophy, which reached its zenith in Hegel’s *Science of Logic* and remained dominant in Heidegger’s thought.

Taking the Scotistic vision seriously allows us to reconstruct a notion of becoming in a manner that does not presuppose a nothingness. Becoming, as it is understood as a process of generation and corruption, is governed by efficient causality that transforms the things from one thing into another. This is what one can call a processual becoming that is physical in its orientation and is

⁵³ *Rep.* I-A, d. 1, p. 2, q. 1, n. 57 (1:130).

concerned with the physical alteration of things. By focusing on the physical process, which is geometrical, it perceives becoming as a continuous mechanistic process.

Scotus's perspective is not physical but rather logical-metaphysical. The process of becoming cannot be explained simply as a sort of propulsion from the past. In anchoring becoming simply in a prior propulsion, one states he has no explanation for the question *why becoming*. Becoming must answer to the why that initiated it, and in this respect Scotus's simple answer is that becoming exists because it fulfills a desired end. The end is prior, insofar as it is desired and willed by the initiator of the becoming. This initial desiring also presupposes that all the possible stages of the process of becoming are 'thinkable' or possible objects for consideration. This logical-metaphysical consideration of becoming is concerned not with the continuous physical transformation but rather with the discrete leap from a present state to an alternative one among different possible futures. This is a discrete process whereby one logical setting is replaced by another. The following example will clarify the difference.

When one looks, for example, at a dog running, one understands the running of the dog as a process where the atoms of the dog are actually moving from one place to another. However, when one sees a movie on television of a running dog, one does not suppose that the pixels themselves are actually moving but rather that a sort of algorithm tells the screen which pixels to light-up with which colors at any given time. This discrete presentation on the television screen does not mean the running has no unity. Whereas the actual running attains its unity from the physical alterations and laws that govern the body, the unity of the dog on the screen is governed by final causality that is executed by a sort of mathematical function that orders the movements of the pixels in a manner that turns the light sequences into a function with meaning. Whereas physical reality can speak of a transformation from something that is now more or less than it was, the television screen and the sequence presented do not consider an unlighted pixel, i.e., a black light, as less real or actual than a lighted one. Insofar as the pixels serve the greater unity they were designed to represent, they contribute to the unity of the represented thing. Similarly, the Scotistic process of becoming, whereby reality is changed from one possibility to another, forms a meaningful sequence of becoming to a desired goal. Whereas the physical process considers alteration as something that involves nothingness, the Scotistic becoming is like a musical movement where the sequence of notes together form a musical sentence. Though the

act of playing music requires the pianist to cease playing a specific sound as he moves forward to press the following key, from a logical perspective the former note is not eliminated by the one following it. On the contrary, the new note is meaningless if it is not considered together with the former one.

Under the Scotistic vision the processual becoming, that is governed by efficient causality, is subjugated to the logical becoming that is governed by final causality. The nothingness that is involved with the processual becoming does not transcend into the metaphysical realm but only expresses the lack of ability of the geometrical physical explanation to translate and explain by geometrical-mechanical means the meaningful movement from one note to another.

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