

Leibniz's Metaphysics of Representation, Perception, and Appetition

Michael Losonsky  
Department of Philosophy  
Colorado State University  
Fort Collins, CO 80521  
U.S.A.  
[Michael.Losonsky@Colostate.edu](mailto:Michael.Losonsky@Colostate.edu)

In Leibniz's mature metaphysics -- the metaphysics of the *Monadology* -- perceptions and appetitions are fundamental features of reality, with perceptions being representations and appetitions being responsible for changes in perceptions. This paper explores the relationships between the concepts of perception, representation and appetite in Leibniz's later metaphysics. First, I will distinguish between the contents of representations and the carriers of content, and argue that for Leibniz perceptions are not carriers of content, but are identical to representational content. Second, I will argue that appetitions are the carriers of content and that Leibniz should be taken at his word when he declares that "Thought consists in conatus [*Cogitationem consistere in conatu*]" (GP I:72-3/L 149).<sup>1</sup> Third, relying on

1 References to Leibniz's writings use the following abbreviations:

- A: Leibniz 1923. "A" is followed by *series number:volume number:page numbers*.
- C: Leibniz 1903.
- DB: Leibniz 2007.
- GM: Leibniz 1849
- GP: Leibniz 1996. "GP" is followed by *volume number:page numbers*.
- Gu: Leibniz 1966. "Gu" is followed by *volume number:page numbers*.
- L: Leibniz 1970.

Leibniz's definition of "expression", I argue that while it is true that for Leibniz representational content is determined by a species of mapping or function from representation to what is represented, this is not the only component that determines representational content for Leibniz. The correspondence in terms of which he characterizes representation includes an ontological component, namely a lineage or trace from representation to represented object via God's creation, and appetitions constitute this trace. Finally, I will show that Leibniz's account of how ideas represent and how perceptions represent are distinct, and that derivation plays a key role in how ideas represent. However, Leibniz's concept of derivation and the role of appetite in derivation needs further study in order to shed more light on Leibniz's dynamic conception of logic.

## I. Perception and Expression

Leibniz's concept of perception is quite puzzling, but some features are relatively clear.<sup>2</sup> It is clear that Leibniz's perceptions are to be understood, following McRae (1978, 24), "as expressing, as having meaning, or as being intentional in nature." It is also clear that while perceptions are intentional in nature, they are intentional without involving awareness or consciousness, which Leibniz characterizes in terms of apperception. Perceptions also need not involve sensation, feeling, understanding or rational thought, all of which involve perception, but are not essential to perception. It is also clear that in Leibniz's later metaphysics perceptions, along with appetitions, are one of the two fundamental modes or properties of the

NE: Leibniz 1962 and Leibniz 1996.

<sup>2</sup> See McRae (1978), Kulstad (1982), M. Wilson (1992), and Simmons (2001).

basic substances of reality, namely monads. Finally, a perception is intentional in nature in such a way that it also has a "representative nature", that is, it "is capable of expressing entities outside of itself" (GP IV:484/L 457; also see Simmons 2001, 41). Leibniz defines representation, which he also calls "expression", as a kind of correspondence. A *locus classicus* is the following passage from the essay "What is an Idea?" (1678): "That is said to express a thing in which there are relations [*habitudines*] which correspond to the relations [*habitudines*] of the thing expressed" (GP VII:263/L 207). In another slightly more informative passage Leibniz states:

It is sufficient for the expression of one thing in another that there is a certain constant law of relations, by which particulars [*singula*] in the one can be referred to corresponding particulars in the other. (C 15)

Following Kulstad (1977, 61-2), it is clear that at least part of what Leibniz is suggesting is that correspondence is a function or mapping, anticipating Frege's extension of arithmetic functions to other domains. It is also clear that for Leibniz not any mapping will suffice for correspondence. The function has to be a mapping that preserves a structure of the expression and what is expressed (Swoyer 1995a, 82).

One of Leibniz's favorite examples of correspondence is an ellipse representing a circle: "any point whatever on the ellipse corresponds to some point on the circle according to a definite law" (GP VII:264/L 208; also NE 131 and GP VI:327). Another example is one in which Leibniz treats secondary qualities as expressions. When pricked by a pin, the pain expresses "the motions which the pin causes in our body"

because there is a "precise relationship" between the pain, which consists of insensible and minute perceptions, and the motions of the pin. In general, Leibniz writes:

the internal bodily motions and the ideas which represent [*representent*] them to the soul resemble the motions of the object which causes the color, the warmth, the pain, etc.; or what is here the same thing -- they express the object through some rather precise relationship [*rapport*]; though this relation does not appear distinctly to us, because we cannot disentangle this multitude of minute impressions. (NE 132-3; also GP II:114/L 340)

Perceptions, then, are representations and as such they have representational content, e.g. one perception represents that something is a circle and another that I am in pain. This raises two distinct questions. One concerns the sorts of things or entities that represent, that is, *What sorts of entities are the carriers or bearers of representational content?* Applied to perceptions, given that perceptions have representational content, the question is what sorts of entities are bearers of perceptual content?<sup>3</sup> The second question has to do with the nature of representation itself: *In virtue of what does a carrier of content have the specific content that it has?* Given that different perceptions have different contents, there must be something in virtue of which one perception represents or expresses a circle and another represents or expresses pain. These two issues are what Cummins (1989) has labeled the "Problem of Representations" and the "Problem of Representation". The former is about the nature of the carriers of representational content and the latter is about the determinants of

3 This is the question Sleigh (1983, 74) is after when he discusses expression and asks about "the nature of the internal state that constitutes a perception".

content.

These questions for Leibniz should be answered in light of the constraints set by his metaphysics of monads. Since "monads are nothing other than representations of phenomena with a transition to new phenomena," Leibniz writes:

it is clear that in monads there is perception on account of the representation, and  
appetition on account of the transition; and there are no principles from which anything else  
could be sought. (DB 319)

In other words, the Problems of Representation and Representations have to be solved on the basis of perceptions and appetitions alone. This does not preclude relations from playing a role in carrying and determining the perceptual content of monads, but they will have to be the kinds of relations Leibniz's metaphysics admits. While for Leibniz there are no efficient causal relationships between created monads, he nevertheless is committed to some inter-monadic relations, for example, in Leibniz's own words, the "precise relationship" between monads that is required for representation. (Mugnai 1992, 14). There is a function from the points on an ellipse to the points on a circle without there being any interaction or point of contact between the ellipse and circle. What Leibniz excludes are relations involving points of contact and literal interaction, which Leibniz believes are incompatible with the simplicity and unity of monads.

In addition to these constraints, I assume that Leibniz requires that contents have carriers. He would agree with Boghossian (2002, 149) that "content properties have *some* sort of bearer" because "contents do not figure in a mental life except as subtended by a particular *mode*". Although there are

some passages that appear to conflict with this assumption,<sup>4</sup> there is preponderant evidence that Leibniz would accept it. On several occasions Leibniz affirms that human thought requires signs, characters or sensible traces (NE 77, 119, and 212).<sup>5</sup> Even "arithmetical truths presuppose some signs or characters" (GP VII:191/L 185). In fact, Leibniz maintains that "sensible traces" of thoughts are "required" for the sake of pre-established harmony (NE 77), and since arguably, pre-established harmony requires a mapping, this in turn requires that contents have carriers that can be mapped.<sup>6</sup>

It seems that even the contents of God's own thoughts have carriers. In the margins of the passage that "arithmetical truths presuppose some signs of characters" Leibniz writes: "As God calculates and exercises his thought, the world is made," suggesting that "the creation of the world is God's self-expression" (Grosholz 2001, 17). One way of understanding this is that creation is the bearer of the contents of God's thoughts. While Leibniz appears to deny that God's mind is representative, it nevertheless perceives objects, but perceives them immediately as God produces or actualizes them.<sup>7</sup> Finally, evidence of his requirement that all contents have carriers can be found in his lifelong commitment to the view that ideas, even in God, have a combinatorial structure that can be exhibited in a symbol system

4 For instance, in "Meditations on Knowledge, Truth and Ideas" Leibniz refers to primitive or "*first possibilities*" and "irresolvable notions" which he also describes as "the absolute attributes of God" (GP IV:425/L 293). This could be plausibly read to say that content is a basic and irreducible feature of God's mind and hence without carriers. However, this inference is mistaken. Content can be basic and irreducible, but still have a carrier.

5 For good discussions of the ties between thought and signs and characters, see Dascal (1987). Also Krämer (1992).

6 See Grosholz (2001, 11-2), who argues that pre-established harmony requires that the propositional subject-predicate schema is tied to structured elements of a characteristic. As I see it, the schema is a schema of content, while characteristics are carriers.

and that in fact is also exhibited in the structure of reality.<sup>8</sup>

## II. Perceptions are not Carriers of Content

Turning to the Problem of Representations for perceptions, I maintain that for Leibniz a perception is not a carrier of content, but the content itself. In other words, that which expresses, has meaning, represents, or, more broadly, carries the content is not part of the identity of a perception.<sup>9</sup> Hence I will describe perceptions as being "intensional in nature", in contrast with the characterization of perceptions as being "intentional in nature". Following Brentano's original characterization, intentionality, is "the

- 7 In the 4th Letter (1716) to Samuel Clarke Leibniz writes: "Souls know things because God has put in them a principle representative of things outside them. But God knows things because he produces them continually" (GP VII:375/L 689). This implies that God's knowledge is not representational, but actually involves the object through God's creation. Leibniz's 2nd Letter (also 1716) confirms this: "The reason why God perceives everything is not his bare presence but also his operation. It is because he preserves things by an action which continually produces whatever is good and perfect in them (GP VII:357/L 678). Leibniz anticipates this position in his correspondence with Arnauld in 1686: "I, for my part, have thought that the full and comprehensive concepts are represented in the divine mind as they are in themselves (GP II:48-9/L 332).
- 8 Lenzen (1992, 194-5) argued that Leibniz held that God's calculations with the numerals 0 and 1 produces the "*idea of the world*" which God actualizes. Lenzen's account assumes that God's ideas are representations, and in creation God actualizes something that satisfies God's representations. If God's mind is not representational and God thinks immediately with objects, then God calculates not just with ideas of the world, with the world itself. As he put it in the motto for his German design for a medal, God literally makes everything out of nothing and one. In "*Theologia mystica*" Leibniz writes that "all creatures are from God and nothing [*Alle Geschöpfe sind von Gott und Nichts*]" (Gu I:411). He goes on to suggest that "the essences of things are equal to numbers."
- 9 This account of Leibniz's perceptions is consistent with Leibniz's view that perceptions are representations. The term "representation" is ambiguous between representational content and the carrier of that content, and accordingly a perception can be a representation in virtue of being the content without being the carrier of content. I return to this point in Section III below.

relationship to a content, the direction to an object” (1874, 115), and taken literally this states only that something is intentional if it is related to content, e.g. refers to it, is directed at it, or has content.

Understood in this way, “intentionality” refers only to the property of being a carrier of content, and the *intentional* nature of perception is simply that a perception is a carrier of content.

However, if a perception is *intensional* in nature, then it is itself the content. My use of “intensional” aims only to refer to that which specifically has the following five properties: First, an intension either has a truth-value or in conjunction with other intensions contributes to the truth-value of an intension. Second, an intension has deductive relationships with other intensions or, in conjunction with other intensions contributes to the deductive relationships of intensions. Third, intensions, insofar as they are true or false, are either necessarily true or possibly false. Fourth, intensions can serve as justifying reasons for intentional actions, as evidence for cognitive claims, and, more generally, serve as premises in practical and theoretical arguments. Finally, intensions are what we believe and disbelieve, doubt and affirm, and so on. Concepts and propositions, as structures of concepts, are examples of intensions, and this terminology is familiar to Leibniz.<sup>10</sup> Leibniz's technical use of “perception” in his metaphysics of monads refers to intensions irrespective of what expresses or carries them.<sup>11</sup> For Leibniz, perceptions have truth-values and deductive relationships. Moreover, they are not only true or false, but necessarily true or not necessarily true. Also, we can become aware or conscious of perceptions, and when apperceived, they serve as

10 The intensional nature of perceptions does not preclude the extensional treatment of perceptions. In fact, for Leibniz the structures of intensions and extensions express each other (Swayer 1995b). For God, however, if God's perceptions are not representational, intensions and extensions are identical.

11 As will become clear below, Leibniz's perceptions are intension tokens or instances.



reasons and premises in arguments, as well as being the contents for our judgments. All five properties of intensions are familiar features of Leibniz's philosophy and provide strong motivation for interpreting Leibniz's perceptions as intensions.

Leibniz's own definitions of "perception" support this interpretation. In the *Monadology* Leibniz defines a perception as nothing but "[t]he passing state which enfolds and represents a multitude in unity or in the simple substance" (M§14/GP VI:608/L 644). He characterizes a perception in much the same way in a letter to Des Bosses written in the same year he completed the *Monadology*. There he writes that a

perception is nothing but the expression of many things in one [*perceptio nihil aliud sit, quam multerum in uno expressio*]. (DB 44 and 45)

Again, in a letter to Bourguet from the same year, Leibniz writes: "I define perception [...] to be the representation of plurality in the simple" (GP III:574-5/L 662-3).

A crucial feature of this definition is that Leibniz is characterizing perception in terms of *what is expressed*, namely unified diversity or plurality. This is particularly clear in a discussion of extension where he discusses thinking about extension in terms of 'many things in one'. He writes that when he is thinking about extension, his thinking includes many other thoughts, for example thoughts of continuity, time, motion, and coexistence. These are all united in the the content of his thinking: "I think of many things together - on the one hand, continuity, which it has in common with time and motion, and on the other, coexistence" (GP II:227/L 525; also GP II:183/L 519). Thoughts 'of many things together' serve

Leibniz as evidence for the existence of a simple substance.<sup>12</sup> In the *Monadology* he writes, "[w]e ourselves experience a multitude in a simple substance when we find that the slightest thought which we perceive enfolds a variety in its object" (M§16/GP VI:609/L 644). For example, the thought that a stone is extended exhibits a unified multitude in the concept of extension, and this, according to Leibniz, serves as evidence for a simple substance. Leibniz could have also cited the proposition itself -- *that a stone is extended* -- as a case of multiplicity in unity, namely the propositional unity that includes the concepts of the subject and predicate.<sup>13</sup>

Accordingly, for Leibniz an appropriate paraphrase of "perception is nothing but the expression of many things in one" is "*perception is nothing but the expression that many things are one*".

A second crucial feature of this definition is Leibniz's use of "nothing but". Not only does Leibniz characterize perceptions in terms of content, but he maintains that a perception is *nothing but* the content. Leibniz uses "nothing but [*nihil aliud*]" frequently and almost always to indicate an identity,<sup>14</sup> for example:

the product of the multiplication of a +b +c +etc. by l+m +n +etc. is nothing but the sum of all the binary combinations which can be built out of the letters of the two series. (GM VII:24/L 670);

12 I am not here addressing the question of why Leibniz thinks that conceptual unity is evidence for substantial unity, nor the success of this argument.

13 On the unity of subject and predicate, see Grosholz (2001, 9-10).

14 Or in rejecting an identification: "If universals were nothing but collections of individuals [...]" (GP IV:161/L 129).

substantial unities are nothing but different concentrations of the universe represented according to the different points of view by which they are distinguished (GP IV:518/L 493);

Time is nothing but magnitude of motion" (GP I:24/L 100).

In all these passages "nothing but" is synonymous with "identical to". In other words, Leibniz's definition of perception *identifies* perception with perceptual content.

If perceptions are identical to contents, rather than carriers of content, many otherwise obscure or apparently careless passages about perceptions can be read literally. For example, in his reply to Bayle, he writes that "confused perceptions include all external things and contain an infinity of relations" (GP IV:565/L 581). A perception as a carrier of content cannot literally include external things, just as a word as a carrier of content cannot include external things. Similarly, if a perception is identified with the content together with carrier, "confused perceptions include all external things and contain an infinity of relations" also cannot be literally true and must be read as elliptical for the claim that *confused perceptions carry a content that includes all external things*. A carrier does not include external things; only its content does. But if a perception just *is* perceptual content, then it can literally be said to include external things.

Inclusion in this context is a conceptual relationship and Leibniz frequently uses "include" in this way.<sup>15</sup> Perhaps the best known example is from his theory of complete individual concepts in the

<sup>15</sup> A significant feature of Leibniz's concept of inclusion is that it applies to concepts as well as propositions (Di Bella 2005, 77-8). It is for this reason that conceptual diversity as well as the structure of propositions are cases of unified multiplicity.

*Discourse*, according to which “the concept of an individual substance once and for all includes everything which can ever happen to it” (GP IV:436/L 310). He uses the same terminology in 1714 for perceptions:

each distinct perception of the soul includes an infinity of confused perceptions which envelop the entire universe (GP VI:604/L 640).

Leibniz also refers to inclusion in conjunction with "expression". For example, in the *Discourse* he maintains that an expression "includes everything" (GP IV:442/L 313). An expression as carrier of content could not include everything. Similarly, a perception, as carrier of content, could not 'envelop the entire universe'. Only content can include everything and envelop the entire universe.

Identifying thought with content is a steady feature of Leibniz's philosophy. Very early in his career in an argument for the "immortality of the human mind" Leibniz makes the striking observation that "thought is that 'something, I know not what' which we perceive when we perceive what we think" (GP IV:109/L 113). He goes on to maintain that this 'something, I know not what' cannot be an image because images have parts and this , 'something I know not what' is without parts. The perceived thought, then, is simple and, moreover, what is perceived is, in Leibniz's words, *what we think*, that is, content. Another passage where Leibniz states explicitly that perceptions are intensions is in a well known letter to Sophia Charlotte of Prussia:

when it is said that there are immaterial substances, one means by this that there are substances which include other concepts, namely, perception and the principle of action or

of change, which cannot be explained either by extension or by impenetrability. (GP

VI:506/L 551)

One might argue that Leibniz is being sloppy in this letter, and that what he writes is elliptical for "concepts of substances [...] include other concepts, namely, the concept of perception and the concept of a principle of action". But if perceptions are intensional in nature, we can read this passage literally and need not accuse Leibniz of sloth.

In addition to allowing these literal readings of otherwise obscure passages, understanding perceptions not as carriers of contents, but as contents dovetails Leibniz's view that perceptions are "derived" from each other. For example, in a letter from 1709 to Des Bosses Leibniz writes:

the operation proper to the soul is perception, and the nexus of perceptions, according to which subsequent perceptions are derived [*derivantur*] from previous ones, forms the unity of the perceiver. (DB 129/L 599)<sup>16</sup>

Similarly, in 1713 Leibniz writes to Des Bosses "New perceptions could have been deduced already from prior ones" (DB 303). This is stated especially dramatically in the *Discourse on Metaphysics*, where Leibniz characterizes the sequence of perceptions of a substance in terms of a derivation from a concept:

16 This passage suggests that the unity Leibniz refers to in his definition of perception is neither the unity of consciousness (Jolley 2005, 97) or of substance (Duncan 2012), but the unity of such a nexus, of deductively related perceptions. Sleight (1992, 162) and Kulstad (1993, 96) read this and similar passage as supporting the view that relations between perceptions are not conceptual but causal. But this strains Leibniz's uses of "consequence" and "derived" (Clatterbough and Bobro 1996). Moreover, they assume that conceptual relations between perceptions are relationships between concepts about the perceptions, not the perceptions themselves. See footnote #17 below.

what happens to each is solely the result of its own complete idea or concept, since this idea already includes all the predicates or events and expresses the whole universe. Nothing can in fact happen to us except thoughts and perceptions, and all our future thoughts and perceptions are only the consequences [...] of our preceding ones, so that if I were capable of considering distinctly everything that is happening to me or appearing to me at this hour, I could see in it everything which will ever happen or appear to me. (GP IV:440/L 312)

I wish to emphasize Leibniz's claim that *nothing can happen to us except thoughts and perceptions*, and that these are consequences of preceding ones. Moreover, the future -- "everything which will ever happen or appear to me" -- can be read off of the perception, according to this passage.<sup>17</sup> If perceptions are so related, they must be the sort of thing that can stand in deductive relationships, and these would have to be intensions such as propositions.

In the *Monadology* Leibniz has a deductive relationship in mind when he famously writes that "every present state of a simple substance is a natural consequence of its preceding state, in such a way that the present is pregnant with the future" (M§22/GP VI:610/L645, also GP II:248/L528). While Leibniz does not state this explicitly, he clearly presupposes this in his discussion of rational souls or spirits.

<sup>17</sup> Accordingly, my view cuts across the Conceptual Unfolding View and the Efficacious Perception View of relationships between perceptions (Clatterbaugh and Bobro 1996). The perceptions of a substance are related conceptually, but this relationship is not due to an external individual concept (in God's mind) but due to the perception's own intensional nature. A perception is efficacious in that it, either by itself or in conjunction with others, can entail another. However, as I argue below, the intensional relationship is also an efficacious one on account of the endeavors that instantiate the perceptual content.

Rational souls have reasons, and this means, among other things, that they are capable of “reflective acts, which enable us to think of what is called / and to consider this or that to be in us” (M§30/GP VI:612/L 646). One of the things that is 'in us' and that is an object of our reflection is our own existence, and in reflecting on ourselves we are aware of our being, substance, simplicity, complexity, and immateriality. So here Leibniz does not include intentional entities as objects of reflection.

But Leibniz follows this is with two puzzling claims that are clarified by including perceptions as objects of reflection. One is that by reflecting on 'this or that [...] in us' we also “think [...] of God himself”, and the second puzzling claim is that “[t]hese reflective acts provide us with the principal objects of our reasonings” (M§30/GP VI:612/L 646). What is puzzling about the first comment is that certainly Leibniz did not mean that God himself is 'in us'. So what did he mean? The second claim is puzzling because objects of reasoning typically are things that can be true or false, e.g. propositions, while being, substance, complexity, simplicity, and immateriality do not have truth values. That Leibniz also intends to include things in us that have truth values is clear from the famous discussion that immediately follows introducing the “two great principles” of reasoning: the Principle of Sufficient Reason and the Principle of Contradiction. In Leibniz's discussion, both principles concern propositions. The Principle of Sufficient Reason requires that “any true proposition” must have a reason, and according to the Principle of Contradiction “we judge that false which involves a contradiction, and that true which is opposed or contradictory to the false”

(M§31/GP VI:612/L 646).<sup>18</sup> The most primitive truths are “are identical propositions” whose denial involves “an explicit contradiction” (M§35/GP VI:612/L 646).

The solution to both puzzles is that Leibniz is assuming that the objects of reflective acts include the perceptions that are 'in us', that is, some of these reflective acts are apperceptions in Leibniz's strict sense, namely “perceptions which are [...] perceived” (M§14/GP VI:608-9/L644; also GP VI:600/L 637). In the *New Essays* Leibniz states this explicitly:

The immediate apperception of our own existence *and our thoughts* provides us with the first truths a posteriori or of fact, as identical propositions contain first truths a priori or of reason, that is, the first lights. (NE 415; *my emphasis*).

This means that perceptions are entities that have truth-values. The apperception of an identical proposition is the perception of a thought, and "thought" in this context is synonymous with "perception".<sup>19</sup> For example, the proposition that A is A, which is apperceived by the rational soul, is a perception with a propositional structure, namely the “immediacy between the subject and the predicate” (NE 415).

Perceptions, then, are the sorts of things that have a propositional structure, in addition to having truth-values, deductive relationships, and serving as reasons for rational beings. Leibniz's technical use of

18 Leibniz distinguishes judgments from that which is judged, which is true or false. Since what is judged and has truth values are perceptions, judgments and perceptions are distinct. Leibniz is clear about this in the *Discourse on Metaphysics*: “our perceptions are also always true; it is our judgments, which come from ourselves, which deceive us” (GP IV:439/L 312; also see GP VII:190/L 182).

19 Leibniz's use of “thought” is not univocal. He has a technical use of “thought” for a higher-order perception that includes consciousness. But often he uses it generically and interchangeable with “perception” (NE 210; see Simmons 2001, 41),



“perception” aims to refer to nothing but this intensional component. Accordingly, the metaphysical vision of the *Monadology* is that the ultimate foundation of reality consists of simple individuals that have two basic sorts of properties, intensional ones, namely perceptions, and conative ones, namely endeavors towards intensional states.

While perceptions are intensional in nature, it is also important to recognize that Leibniz also characterizes a perception as “a state which enfolds and represents” (M§14/GP VI:608/L 644). This suggests that perceptions are individuals that belong to each monad and are not shared or held in common. In particular, human beings and God do not share perceptions.<sup>20</sup> A good way to capture this aspect of Leibniz's conception of a perception is to characterize a perception as a kind of trope, property tokening or property instance (Bobro 2008, 328; also Schneider 2012, 720). Accordingly, a perception of a particular monad, for instance that  $A = A$ , is a particular mode of this monad, namely its having that perception. Perceptions are particular intensional states of monads.

### III. Carriers of Content: Endeavors

This returns us to the question how of perceptions are tokened or instantiated by a monad. In other words, what are the carriers of perceptions? If not perceptions themselves, then, given the

20 Already in 1684 Leibniz argues that it is necessary that we have our own ideas (GP IV:426/L 294). In 1692 he maintains that “not only do we need other substances; we need our own accidents even much more” (GP IV:364/L 389). He still affirms this in 1711: “the modifications which are attributed to souls and which we feel in our own soul could not be modifications of God” (GP VI:589/L 624)

constraints of the *Monadology*, appetitions have to be the carriers of content, and this is the answer I wish to defend and develop in the rest of this paper. It is imperative to emphasize that assigning to appetitions the role of carriers is consistent with Leibniz's view that perceptions are representations, while appetites themselves are only directed at representational states. As mentioned above, the term "representation" is ambiguous between representational content and the carrier of that content. If Leibniz's perceptions are representations in the sense of representational content and, as discussed above, Leibniz assumes that all contents need carriers, then there can be something that is distinct from a perception (*qua* representational content) that is the *carrier* of the perception. The fact that appetitions are the carriers of perceptual content does not diminish the representational nature of perceptions.

Although, there is no extended text where Leibniz explicitly identifies appetitions as the carriers of content, but there are many shorter texts written throughout his career that explicitly suggest this. An early example is in a letter to Arnauld where he states that "Thought consists in conatus [*Cogitationem consistere in conatu*]" (GP I:72-3/L149).<sup>21</sup> Leibniz goes on to maintain that "mind consists in a harmony of conatuses" and that "the present conatus of a mind, that is, will, arises from the composition of preceding harmonies" (GP I:73/L 149). While at this stage (1671) Leibniz has not consolidated his metaphysics into a metaphysics of monads, his concept of conatus evolves into the later technical concept of appetite. In 1702 in his "Reply to Bayle" Leibniz writes:

21 A similar passages occur in a manuscript from around 1680: "To think is to express something with a an endeavor to act [*Cogitare est exprimere aliquid cum conatu agend*]." Leibniz struck this out and replaced it with: "A thought is an active representation of many simultaneous matters of fact by one [*Cogitatio est activa quaedam repraesentatio multorum simul facta in re per se una*]." (A 6:4:2848).

The soul, on the other hand, though entirely indivisible, involves a composite tendency [*tendance*], that is to say, a multitude of present thoughts, each of which tends to a particular change" (GP IV:562/L 579)

Here, as before, for Leibniz thoughts, tend toward a specific change. An important feature of this passage is that it occurs in a context where Leibniz is comparing atoms and souls, suggesting that he is not referring to rational souls, but using "soul" and "thought" generically in line with the *Monadology* to refer to monads and perceptions.

In a letter to Bourguet written in 1714 Leibniz's tendencies and appetites are explicitly tied to each other. He writes: "an appetite is the tendency of one perception to another [*l'appetit est la tendance d'une perception à une autre*] (GP III:575/L 663). Read literally, Leibniz is here attributing the tendency to the perception; it is the perception that has the tendency or appetite. Leibniz also expresses this in the *Monadology* when he writes that "every present state of a simple substance is a natural consequence of its preceding state, in such a way that the present is pregnant with the future (M§22/GP VI:610/L 645). He adds: "a perception can come naturally only from another perception" (M§23/GP VI:610/L645). The present state is a state of perceptions and the subsequent state is also a state of perceptions and it is a consequence of the present state. Although a perception can come naturally only from another perception, a perception by itself is not responsible for the change; *appetites* are the tendencies from one perception to another.

This means that the appetites must somehow be built into or constitute a perception. If they do not

constitute a perception, then the new state would come from an appetite, not a perception.<sup>22</sup> In the key passage considered above in "What is an Idea?" where Leibniz characterizes expression as a correspondence, he ties correspondence to appetites. The passage, following Loemker, is usually translated as follows:

That is said to express a thing in which there are relations [*habitudines*] which correspond to the relations [*habitudines*] of the thing expressed" (GP VII:263/L 207).

Loemker's translation suggests that the mapping is from relations to relations, although Loemker hedges his translation of "*habitudines*" by including the original term in brackets. While in other passages Leibniz defines expression explicitly in terms of relations [*relationum*] (C 15), there are good reasons for hedging this translation because relations for Leibniz are ideal abstractions. Instead, as Swoyer (1995a) argued, an expression should be understood as a function that preserves the relationships among the items of what expresses and the thing expressed by preserving "those attributes that provide the foundation for the appearance of that relation" (77). In Leibniz's metaphysics of monads the attributes that are responsible for the changing "plurality of affections and of relations" in a monad are appetitions (M§§11-5/GP VI:608-9/L 643-4). In other words, a function that in a monad preserves "those attributes that provide the foundation for the appearance of that relation" is a function of appetites. Thus Leibniz's definition of expression in 1678 satisfies and even anticipates the constraints of his later metaphysics.

22 Thus McRae (1978, 60) was on the right track when he wrote that "appetitions and perceptions are not, for Leibniz, two kinds of modification, [...] but the same modifications viewed differently." I am arguing that they are distinct modifications, but that one modification carries the other.

Leibniz's use of "*habitudines*" to refer to appetites has a historical precedent. In a key passage on God's will Aquinas uses "*habitus*" to denote dispositions and even appetites:

Now everything has this habitudinem towards its natural form, so that when it does not have [its natural form], it tends towards it; and when it has it, it is at rest therein. It is the same with every natural perfection, which is a natural good. This habitudo to good in things without knowledge is called natural appetite. (Summa theol. I, qu. 19, art. 1)

A striking feature of this passage is that a *habitus* is not just a disposition, but a natural appetite. The reason Leibniz in his later metaphysics uses "appetite" rather than "disposition" is that "disposition" can be understood as referring to a pure power or potentiality, which Leibniz rejects. Powers need to be grounded in something actual, and Leibniz calls a grounded disposition an "appetite" or "endeavor" (NE 172-3). Accordingly, if we read the definition of expression in light of both the historical context and the constraints of his later metaphysics, for Leibniz something expresses another if "there are appetites [*habitudines*] which correspond to the appetites of the thing expressed" (GP VII:263/L207).

The broader context of this definition of expression confirms reading Leibniz's use of "*habitudines*" in terms of appetites. Leibniz begins "What is an Idea?" by distinguishing an occurrent thought and a capacity or disposition to think. He writes that an "*idea consists, not in some act, but in the faculty of thinking*, and we are said to have an idea of a thing even if we do not think of it, as long as we, on a given occasion, can think of it" (GP VII:263/L 207). Leibniz then argues that in addition to being a capacity or disposition to think about an object in appropriate circumstances an idea must also

express the object: "an idea is something in me which not merely leads me to the thing, but also expresses it" (GP VII:264). If we read Leibniz literally, it is one and the same thing that is the disposition to think of an object and that represents it. The idea in me both "leads me to the thing" and "expresses it". The only resource in Leibniz's monadic metaphysics that can both lead or tend to something and express it are appetites.

We can now make sense of why immediately after Leibniz writes that "an idea is something in me which not merely leads me to the thing, but also expresses it" (GP VII:264/L 207), he characterizes representation in term of *habitudines*: "That is said to express a thing in which there are *habitudines* which correspond to the *habitudines* of the thing expressed." An idea expresses something, but it also leads to it, and this directed feature of ideas is carried out by appetitions.

This reading is reinforced in the last paragraph of "What is an Idea?" Here Leibniz writes that "the ideas of things are in us means therefore nothing but that God, the creator alike of the things and of the mind, has impressed a power of thinking upon the mind" (GP VII:264/L 208). As Leibniz emphasizes in the *Monadology*, the soul's internal powers are appetites (M§15/GP VI:609), and so if an idea is "nothing but" the power to think, it is nothing but an appetite.

Leibniz's discussion of "expression" in his response to Arnauld's puzzlement over this term is consistent with this reading. Leibniz begins with a familiar definition: "One thing expresses another, in my usage, when there is a constant and regular relation [*rapport*] between what can be said about one and about the other" (G II:112/L 339). After giving a variety of examples, Leibniz declares that "expression

takes place everywhere" and argues:

because every substance sympathizes with all the others and receives a proportional change corresponding to the slightest change which occurs in the whole world, although this change will be more or less noticeable as other bodies or their actions have more or less relationship [*rapport*] with ours. (G II:112/L 339)

The rapport or correspondence between two substances is between changes, that is, actions, and for Leibniz "[t]he action [...] which brings about change or the passage from one perception to another can be called appetite" (M $\S$ 15GP VI:609/L 644). While a perception is the locus of representation, an appetite is the locus of change, and it is on account of corresponding changes that substances represent each other. That is just to say that something expresses a thing just in case it has endeavors that correspond to the endeavors of the thing expressed.

In short, Leibniz's claim that "Thoughts consist in conatus" is a succinct and literal statement of his position regarding perception in his late metaphysics. Perceptions are constituted by appetites, and the way to understand this is that endeavors are the carriers of perceptual content.

#### IV. Appetitions and Representation

Leibniz's solution to the Problem of Representations, namely that appetites or endeavors are the carriers of content, also contains Leibniz's solution to the Problem of Representation, that is, identifying what individuates different contents. Two distinct representations represent different things in virtue of

corresponding to different things.

A danger for this account is that the correspondences are too easy to come by and that almost anything can count as an expression of anything else. For example, if a correspondence is simply a structure preserving mapping, then there are such mappings from ellipses not only to circles, but also to cubes and pin pricks. An additional factor is needed that selects the relevant mapping. Swoyer (1995a) suggests that an "antecedent and independent interest" can serve to individuate the relevant correspondence from the diversity of structure-preserving mappings. Swoyer illustrates this with an analogy from Group Theory. While virtually any collection of things will be a group,

group theory is useful because there are numerous relations of independent interest (like the rotation of a geometrical figure) that turn out to have the structural features of group addition. Similarly, expression is important for Leibniz because there are many pairs of things (e.g., geographical regions and maps of them; machines and scale models of them) in which relations of antecedent and independent significance (e.g., distances between cities) among constituents of the first member of the pair have the same structure as easily studied relations among the constituents of the second member of the pair (e.g., distances between their surrogates on the map). (82-3).

This is a promising strategy, but it does not change the fact that given that there are structure-preserving relationships between ellipses, cubes and pin pricks, an ellipse still expresses a circle, a cube, a pin prick, and almost anything else. The antecedent divine interest merely selects one of those expressions as



interesting, leaving the others aside. While these expressions are set aside, it is still the case that the ellipse expresses all these other uninteresting things.

I agree with Catherine Wilson (2005, 111-2) that Leibniz has a stricter concept of representation. If a particular ellipse represents a circle, it represents a circle and not something else. Similarly, while a pain could represent a pin prick as well as a circle, an actual instance of a pain due to a pin prick represents that injury, not a circle. So the divine interest must constitute the representation in such a way that what is represented by the ellipse (given that it represents a circle) is a circle, not something else. God's interests, on Leibniz's account, actually do play a constitutive role in a monad's endeavors. For Leibniz, God's independent and antecedent interest is to actualize the best of all possible worlds, and this requires that there is a pre-established harmony between substances. All substances are "in mutual harmony" according to the "will of the Creator" and this is accomplished in such a way that substances "adjust themselves to each other in the best way possible" (GP II:115/L 341). Accordingly, the following correspondence between body and soul:

The state of the body at moment A.

The state of the body at the following moment B (pin-prick)

and

The state of the soul at moment A

The state of the soul at the following moment B (pain). (G II:114; L 340)

is a result of God's antecedent and independent interest to actualize the best of all possible worlds. While

there might be a structure-preserving mapping between the set of moments A and B of the soul and a set of points of a geometric figure, the reason the states of the soul are so related includes the changing states of the body and God's aims.<sup>23</sup> In other words, "God, comparing two simple substances, finds the reasons in each which oblige him to adapt the other to it," and what guides or 'obliges' God in this mutual adjustment is "the principle of the best," that is, God's choice to produce the best of all possible worlds (M§§48 and 53-5/GP VI:615-6 /L 647-8; also G VI:603/L 639).

These divine interests are not completely extrinsic to a monad, but are also internal to it.<sup>24</sup>

According to Leibniz in "On Nature" (1698), "God does in fact leave some vestige of him expressed in things" (G IV:507/L 501; also M§60/GP VI:617/L 648-9).<sup>25</sup> God's "volition or command, or if you prefer, this divine law" is not just an "extrinsic denomination", but "confer[s] upon [created things] [...] [an] impression which endures within them." This "impression", "vestige" or "subsistent effect" in the substance is an active force "residing in things [...] from which the series of phenomena follow according to the prescription of the first command" (GP 4:507/L 500-1). This "primitive force of action [...] is itself the inherent law impressed

23 Following Leibniz here, I am ignoring the detail that in Leibniz's metaphysics a soul is an individual substance, but a body is an organic aggregate of monads instead. For Leibniz, pre-established harmony applies not only to monads, but also holds at higher levels between collections of monads, e.g. between organic bodies, and also across levels, e.g. between monads and bodies as well as between societies, bodies and monads. For a full account of this "rational order of nature" see Rutherford (1995a).

24 Compare C. Wilson (2005) on adjustment without accommodation.

25 In other words, God not only has a real influence and influx on monads, but also results in monads expressing God's decrees. On Leibniz's divine influx and his denial of influx between created monads see Jolley (1998).

upon it by divine decree" (GP 4:511-2/L 503-4).<sup>26</sup> In "On Nature" this divine vestige or impression is an appetite. While his use of "appetite" in "On Nature" is not new -- he used it earlier in the "New System" (1695) to characterize substance -- it now occurs with an important difference.<sup>27</sup> In the "New System" the force of a "true unity", "formal atom", or "substantial atom" should be understood, Leibniz maintains, "as something analogous to [...] appetite" (G IV:478-9/L 454), in "On Nature" "appetite" becomes a technical term for "a kind of *nisus* or primitive force of action which is itself the inherent law impressed upon [a monad] by divine decree" (G IV:512/L 504). This *nisus*, variously translated as urge, endeavor or impulse is "within the monads themselves" responsible for their changes (GP IV:514/L 506).<sup>28</sup>

Accordingly, appetites serve to individuate perceptual content out of the multiplicity of structure-preserving mappings. Recalling Leibniz's pain and pin-prick example, while there might be a structure-preserving mapping between the set of moments A and B of the soul and a set of points of a circle, the soul's change from A to B is an action of specific appetites that are either actualized by God or are traced back to endeavors actualized by God in an action to adjust the soul so that soul and body are in harmony to satisfy the Principle of the Best.

26 Mercer and Sleight's (1996, 99) proposal that according to Leibniz God gives created monads "production rules" that determine the harmony of monads is particularly helpful. This primitive active force is also a constitutive power of a monad. Moreover, it is not merely potential but continually acting and this continuity of action constitutes its unity (Bolton 2008, 119-121 and 125).

27 On the other hand, the term "monad" in "On Nature" appears for the first time in a publication. Earlier uses are in letters, the earliest being in 1695 in an unfinished draft to the mathematician Guillaume de l'Hôpital promoting his just published "New System of the Nature of Substances and their Communication" in the *Journal des Savants* (GM II:294/Woolhouse and Francks 1997, 57; also Rutherford 1995b, 166n24). The term Leibniz uses in this letter is "*Monas*".

28 On the evolution of Leibniz's concept of force from his physics to his metaphysics of monads, see Garber (2009, 317-27).

It is tempting to think about this in causal terms.<sup>29</sup> The perceptual content of a monad A is in part determined by a causal chain from the appetites of this perception to God's reasons for actualizing A and its perceptions. These reasons include the actualization of other monads and their perceptions, and the adjustment of A to accord with them. Hence even if there are structure-preserving mappings between a particular ellipse and a circle, cube or pinprick, the endeavors that bring about this ellipse determine that it represents a circle and not something else. Unfortunately, this analogy can mislead because causality is typically considered to be a relation between physical bodies and events, while God's causal actions on created monads and the passage from one state of a monad to another are not relations between physical bodies or events. Moreover, for Leibniz causality requires the influx of accidents, and this cannot occur between monads. Leibniz is careful to describe the relation between God and created substances in ways that cannot be confused with ordinary causation. For instance, in the *Discourse on Metaphysics* he writes that God "produces [created substances] continually by a kind of emanation, as we produce our thoughts" (GP IV:439/L 311). So it is more accurate to state this tie between God and created monads more generically as follows: For Leibniz the etiology of the endeavors that bring about a monad's perception determines perceptual content.<sup>30</sup> The term "etiology" leaves open whether this is a chain of causes, a chain of reasons, other intensional states, or some other kind of chain, lineage, or trace.<sup>31</sup> I prefer to use "trace",<sup>32</sup> but also use "quasi-causal chain" because it expresses the efficacious nature of this tie.

29 Adams (1994, 189) highlights the role of God's causal efficacy in constituting a monad's expression of God. Compare C. Wilson (2005), for whom adjustment between created substances occurs in "complete isolation."

According to this account there is an actual determinate trace from a monad's perception to God's decree actualizing the monad.<sup>33</sup> In particular, there is a trace from the monad's endeavors that constitute this perception to God's decree, and the decree has a unique tie to the appropriate object. This assumes that God avoids the problem of the multiplicity of mappings for God's decree. It would be pointless to rely on God's decrees to determine perceptual content for created monads if God's decrees are indeterminate. Leibniz's God avoids this problem because, first, God's mind does not represent objects in the sense of having representations that correspond to them.<sup>34</sup> Instead, God perceives objects immediately as God produces or actualizes them. This means that God's decrees also have a quasi-causal tie or trace to objects due to God's creation. The specific decree that actualizes a soul's change from A to B is also one that actualizes a body and its changes from A to B, and not one that actualizes a circle or a cube. Thus while it is the etiology of the soul's endeavors that determines its perceptual content, for God it is the act of

30 The parallels to 20th-century developments in the philosophy of mind and language are obvious. Davidson (2001, 44) summarizes these succinctly as follows: "As Hilary Putnam (misleadingly) put it, 'meanings ain't in the head'. The point is that the correct interpretation of what a speaker means is not determined solely by what is in the head; it depends also on the natural history of what is in the head". This can be adapted for Leibniz: the correct interpretation of what a monad expresses is not determined solely by what is in the monad and the mappings to other monads; it depends also on the divine origins of what is in the monad.

31 For helpful discussions and assessments of the alternatives, see Clatterbaugh and Bobro (1996), Jolley (1998), Di Bella (2005), and McDonough (2008).

32 The allusion to the concept of a trace in contemporary dynamic semantics is appropriate. See Harel, et al. (2000, 146-7 and 400).

33 Consequently, the "production rules" (Mercer and Sleigh 1996, 99) God gives created monads are traces in the monad of God's decree.

34 See footnote #7 above.

creation.<sup>35</sup> Accordingly, a soul's changes as well as a body's changes have a trace to God's decree to actualize each, and it is this trace that makes a pain represent a change in its body rather than something else.

There are two major passages where Leibniz explicitly ties the correspondence of expression to a trace or lineage in addition to an abstract mapping. The first is from Leibniz's "Reply to Bayle":

For each thing or part of the universe must point [*marquer*] to all the rest, in such a way that the soul, as concerns the variety of its modifications, must be compared, not with a material atom, but with the universe which it represents according to its point of view - and in some ways even with God himself, whose infinity it represents finitely because of its confused and imperfect perception of the infinite. (GP IV:562/L 579)

I wish to highlight Leibniz's use of "point [*marquer*]" and "represents" in the same passage. A substance represents or expresses, even if confusedly, all there is, and this includes God's reasons for creation and adjustments. But this representation is such that it *points* to other things. Hence, for instance, if a monad's perception represents the sun, it will also *points* to the sun.

To be sure, it is possible to interpret "*marquer*" simply as another way of describing a mapping relationship. A function can be described as pointing, so to speak, from its domain to its range, but this is only a metaphor. There is nothing that literally points between sets. For instance, there is a one-to-one mapping between a set of six turnips and a set of six teacups, but nothing points from one set to the other.

35 On the unity of efficient and final causation in Leibniz's conception of divine creative activity, see McDonough (2008).

But if this were all Leibniz had in mind using "*marquer*" in this passage, it would be puzzling why he chose this particular word, which is better translated as the verb "to mark" where a mark is made or left on something. It can even mean to tag or brand an object. The better explanation for Leibniz's use of this term is that it captures the fact that a representation of an object, on his account, does involve a marking, albeit a divine marking, of the object. The trace or quasi-causal connection between an object and its representation involves the divine productive relationship of the represented object, and this leaves an impression on it as well. God produces both represented and representing object, and adjusts both in light of each and the Principle of the Best, and in so doing, leaves a mark on both objects.

Leibniz's use of "marquer" here is not an isolated case. Leibniz uses "*marquer*" in the sense of a physical mark in the well-known marble example in the *New Essays* where Leibniz responds to Locke's *tabula rasa* doctrine as Leibniz understood it. The veins in a piece of marble that a sculptor might have used to make a statue of Hercules could have "veins in the block which marked out the shape of Hercules rather than other shapes [*veines dans la pierre qui marquassent la figure d'Hercule préférablement à d'autres figures*]" (NE 52; also NE 80). The veins trace out a shape in the marble, and this trace or mark in the marble is determinate enough to trace out the shape of Hercules rather than something else. The same usage occurs later in the *New Essays* where he draws an analogy between proofs and long roads that need milestones to mark out the route for others" (NE 424). In another place he uses "marquer" to state that nature does not mark out one-foot lengths on a straight line (NE 302).

A second passage that suggests that the correspondence of expression involves a trace is from a

dialog Leibniz wrote in 1711 or 1712 responding to Malebranche's *Dialogues on Metaphysics*:

I am persuaded that God is the only immediate external object of souls, since there is nothing except him outside of the soul which acts immediately upon it. And our thoughts with all that is in us, insofar as it includes some perfection, are produced without interruption by his continued operation. So, inasmuch as we receive our finite perfections from his which are infinite, we are immediately affected by them. And that is how our mind is affected immediately by the eternal ideas which are in God, when [*lorsque*] our mind has thoughts that are related [*rapporf*] to them and that participate in them. It is in this sense that we can say that our mind sees all things in God. (GP VI:593/L 627)

In other words, a mind has a thought that corresponds to an object, and hence represents it, when it is affected by God. While this passage does not explicitly mention that it is on account of the mind's being affected by God that it corresponds to external objects, the context of this discussion is Leibniz's response to the criticism that we perceive things 'outside of ourselves'. This correspondence requires as a condition that there is a trace to God's mind.

## V. Ideas, Perceptions and Derivations

In this concluding section I want to tie together two related pairs of loose ends. One pair concerns ideas and perceptions. For Leibniz, both ideas and perceptions are expressions, but what distinguishes these expressions? The second pair concerns the relationship between conceptual or logical derivation



and the trace that plays a role in correspondence.

First, perceptions are actual intensional states that are carried by structures of appetites or endeavors, but "*an idea consists not in some act but in the faculty of thinking*, and we are said to have an idea of a thing even if we do not think of it" as long as "on a given occasion, we can think of it" (GP VII:263/L 207). For instance, an idea of a circle is, in part, the capacity to have a perception of a circle in appropriate circumstances. However, this is not sufficient. As we saw earlier, Leibniz maintains that if he has an idea of a circle, then "there must be something in me which not merely leads me to the thing but also expresses it" (G VII:263/L 207). In other words, if Leibniz at a time has an idea of a circle, he not only has at that time a capacity to have a perception of a circle in appropriate circumstances, but at that time he also has something that expresses a circle. This means that he has something that expresses a circle without, at that time, having a perception of a circle. How can that be?

Leibniz's answer is in the concluding paragraph of "What is an Idea?":

That the ideas of things are in us means therefore nothing but that God, the creator alike of the things and of the mind, has impressed a power of thinking upon the mind so that it can by its own operations derive what corresponds perfectly to the nature of things. Although, therefore, the idea of a circle is not similar to the circle, truths can be derived from it which would be confirmed beyond doubt by investigating a real circle. (G VII:264/ L 208)

Assimilating thoughts to perceptions in this context, Leibniz's point is that to currently have an idea of a circle without having a perception of a circle or anything else that corresponds to a circle is to currently have

perceptions from which a perception of a circle can be derived by the individual that has the idea.

This means that implicitly Leibniz has two concepts of expression. The primary notion being that  $x$  expresses  $y$  just in case there is a correspondence that involves two components: a structure-preserving mapping between elements of  $x$  and elements of  $y$  together with a trace between  $x$  and  $y$  via God's creation. The derivative notion of expression is that an individual has an idea that expresses  $y$  just in case that individual has perceptions from which perceptions of  $y$  are derivable. The derivative notion is a weaker notion that is entailed by but does not entail the primary notion. Thus an individual that has a perception of a circle also has an idea of a circle, but a person who has an idea of a circle need not have a perception of a circle.

Second, then, a key notion in Leibniz's characterization of how ideas express is derivation. While it is clear that for Leibniz it is a logical relation, it is also the case that given constraints of metaphysics of monads, derivation has to be a relation between perceptions, namely one state of perceptions following another. But this is a change in a monad's states of perceptions, and changes in perceptions are the actions of appetites, which not only produce changes, but themselves have a lineage to God's actualization of created objects. Accordingly, derivation is not merely a logical relation, but it is part of the order of nature and its production. Recent work on Leibniz has shed more light Leibniz's views about the relationship between logical and ontological dependency (Di Bella 2005, Nachtomy 2007, Rauzy 1995).<sup>36</sup> However

36 A particularly striking passage highlighted by Di Bella (2005, 72):

I call the antecedent the term from which another follows, which is called the consequent [...]. One should only add: given that it be antecedent for nature: that is to say, given that it be a real antecedent, and not only a merely logical one. (A 6.4:303)

what has not received sufficient attention is the role appetitions play in logical relations, and hence the dynamic features of Leibniz's logic and semantics.<sup>37</sup> Given the fundamental role they have in representation for Leibniz, necessary, eternal, and logical truths must also have dynamic representations carried by appetites transitioning sequences of representational states. I hope that my case for Leibniz's dynamic conception of representation will lead to closer attention to the dynamic components of Leibniz's conception of logic.

Di Bella also highlights Leibniz's claim in the *New Essays* that "[a] *cause* in the realm of things corresponds to a *reason* in the realm of truths, which is why causes themselves -- and especially final causes -- are often called reasons" (NE 475).

37 An exception is Debuiche (2009, 114-5) who recognizes that created monads have dynamic representations and that an adequate account of Leibniz's concept of expression must include the dynamic components of his system. This is correct, and we can go further and notice that appetitions are the dynamic components.

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