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Relations and Folds in Leibniz: Monadological Intimacy

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RELATIONS AND FOLDS IN LEIBNIZ: MONADOLOGICAL INTIMACY

A Dissertation

Submitted to McAnulty College and Graduate School of Liberal Arts

Duquesne University

In partial fulfillment of the requirements for

the degree of Doctor of Philosophy

By

Jeff Lambert

May 2020

RELATIONS AND FOLDS IN LEIBNIZ: MONADOLOGICAL INTIMACY

By

Jeff Lambert

Approved April 6, 2020

_____
Dr. Daniel Selcer
Associate Professor and Chair Philosophy
Department
Duquesne University
(Committee Chair)

_____
Dr. Jay Lampert
Professor
Philosophy Department
Duquesne University
(Committee Member)

_____
Dr. James Swindal
Professor
Philosophy Department
Duquesne University
(Committee Member)

ABSTRACT

RELATIONS AND FOLDS IN LEIBNIZ: MONADOLOGICAL INTIMACY

By

Jeff Lambert

May 2020

Dissertation supervised by Daniel Selcer

Abstract: My goal is to provide a clear explanation of Leibniz's notoriously difficult system of relations. Relations among 'windowless' substances that exert no causal power over one another seems like a pipe dream that should be abandoned. However, I demonstrate that each substance expresses its relations only through the unique representation of all other substances. That is, any relation a substance expresses is due to this unique, perspectival, non-causal, representation of others. Because this is the case for all substances, this means that this relation of representation is an ongoing process of interconnection for all substances. This representation is not merely a cognitive copy of the universe (i.e. all other substances); it is the expression of all other substances from a distinct perspective. By taking a holistic approach, I show that Leibniz is

not contradicting himself when he claims that substances are windowless, relations are ideal, all

substances are interconnected, and there are no such things as purely extrinsic denominations.

DEDICATION

To Kathleen Lambert, forever my *sine qua non*.

To my mother, you are enfolded in all that I am.

ACKNOWLEDGEMENT

I am an incredibly lucky person; this is evident in all the support I have received in my life and my studies. I consider my work here to be the product of more than just my own scholarship and the excellent input of my committee. The support, patience, and love of all my friends and family are the foundation that allowed me to complete this project. My life has been filled with generous friends and mentors who have helped me become a better person. You're all beautiful genius heroes.

Thank you to Clayton Crockett, Jim Deitrick, and Taine Duncan. There was not much that I loved about Arkansas, but you three (and the rest of the Philosophy and Religious Studies Department at UCA) were a constant bright spot. Thank you for believing in me as a scholar, thank you for working with me, thank you for introducing me to Deleuze and Irigaray, and thank you for being such magnificent teachers and mentors.

Thank you to the wonderful people that I am privileged to have worked with in the service industry. Working alongside you and getting to know you while completing my graduate studies helped provide a much-needed healthy balance to my life. It is a great honor to know you, and I am so grateful to call you friends. Thank you for the comradery, the conversations, the drinks, and the solace.

Thank you to everyone who is and has been in the graduate program with me at Duquesne. I am in awe of each one of you. You are so much more than brilliant thinkers and talented teachers. I look up to all of you for your charity, your humor, and your dedication.

Joan Thompson, what a light you are. When I first arrived at Duquesne you were so full of life and so welcoming that you made moving across the country seem far less intimidating. I

remember one of the other graduate students told me you were everyone's "Pittsburgh Mom" – nothing could be truer. You have supported me as a graduate student, as your office assistant, and as a person. I cannot begin to thank you for everything. I have learned so much from you.

My friend in dissertation commiseration and celebration: Paul Zipfel – what a ride it's been going through the graduate program together. You have consistently checked in on my well-being throughout this whole process and everything that has happened concurrently with it. I only hope that I have been as good of a friend to you as you have been for me. I look forward to all our future discussions and everything we are going to accomplish.

My younger brother, Max Lambert, thank you for your humor, creativity, and empathy. I am so proud of you. You are doing such a great job in school and I can't wait to celebrate your many successes with you. Thank you for always celebrating with me and being so genuinely caring.

I owe my older brother, Mike Lambert, and my friend, Charles Brown, a considerable debt for essentially being my fourth and fifth readers. Mike, thank you for always being there for me and for moving to Pittsburgh with me. I know we both wanted out of Arkansas (and being in Pittsburgh has worked out quite well for both of us!) but I hope you know that I never take for granted how lucky I am to have you as my older brother. You have been my best friend and chief role model for as long as I can remember. Charlie, thank you for being such a caring friend that I always know I can count on. I think of you as another brother. You are a loyal, compassionate, and thoughtful person who I am grateful to have in my life.

Jay Lampert and James Swindal, thank you for being on my committee and for the feedback and challenges you provided as readers. You always pushed me to persuade more than just Leibniz scholars and to make my ideas as clear and accessible as possible. Outside of this

project, I thank you both for how supportive you have been of my passion for teaching as well as for each of your generous contributions of time and resources to the Graduate Students in Philosophy conferences I organized. Duquesne is lucky to have you both and I am lucky to know you and continue to learn so much from you. I can point to a handful of truly excellent decisions I've made in my life and asking you to be on my committee surely counts as one of those excellent decisions. I hope it has been a positive experience for you as well.

Dan Selcer, thank you for being a model for how I aspire to conduct myself as a teacher and an academic. I have no idea where you find the energy to do everything you do for all the students at Duquesne. As my dissertation director, I felt like you understood the goals of my project right from the beginning. Sometimes I even wondered if you understood my goals better than I did, as you often anticipated issues that I would need to address in order to maintain the integrity of my claims. Your feedback was invaluable and even when your comments were most critical, I always felt you were pushing me to do better because you genuinely believed I could. Thank you for your faith in me.

Kathy, my heart, thank you for your love. I did not know it was possible to be so in love and so happy. There is no greater indicator of my ridiculous luck than the fact that I get to know and love you. I could never have done this without your encouragement and support. I cannot fully express what it means to me that you genuinely care about my work in this project and as a teacher. You always have my back and I will always have yours. I work every day to be the person you see in me.

To my dad, thank you for your unceasing support of all my pursuits. You always encouraged to follow my passion and believed in my ability to be successful. I have never questioned your love, or your support and I hope you know that I don't take that for granted.

Also, thank you for trying to read this dissertation. It means the world to me that you want to know what I've been working on.

To my mom, thank you for teaching me how to love. I wish you could see this project finished but this project, and everything else I do, is only an extension of the way you taught me to love and respect others; you already knew everything I've worked out here. You were, and still are, my greatest teacher. I love you and I miss you. Thank you for everything.

Again, thank you to everyone who has been so kind, supportive, and patient with me.

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LIST OF ABBREVIATIONS

A = *G.W. Leibniz: Samtliche Schriften und Briefe* (Darmstadt and Leipzig 1923-).

GP = Gerhardt, C.I. *G.W. Leibniz: Die Philosophischen Schriften*, 7 vols. (Berlin 1875-90).

C = Couturat, Louis. *Opuscules et Fragments inedits des Leibniz* (Paris 1903).

L = Loemker, Leroy. *Philosophical Papers and Letters* (Dordrecht 1969).

LoC = Arthur, Richard. *The Labyrinth of the Continuum: Writings on the Continuum Problem* (New Haven 2001).

AG = Ariew, Roger and Garber, Daniel. *Philosophical Essays* (Indianapolis 1989).

LP = Parkinson, G.H.R. *Logical Papers* (Oxford 1966).

LA = Mason, H.T. *Leibniz-Arnauld Correspondence* (Manchester 1967).

DB = Look, Brandon and Rutherford, Donald. *The Leibniz - Des Bosses Correspondence* (New Haven 2007).

DV = Lodge, Paul. *The Leibniz - De Volder Correspondence* (New Haven 2013).

RB = Remnant, Peter and Bennet, Jonathan. *New Essays on Human Understanding* (New York 1996).

VE = *Vorausedition zur Reihe VI - Philosophische Schriften - in der Ausgabe der Akademie der DDR*, (Münster, 1982-).

Gr = Gaston Grua, *Leibniz textes inédits de G. W. Leibniz: D'après les manuscrits de la bibliothèque principale de Hanovre*, (Paris, 1948).

MP = *Leibniz: Philosophical Writings*. Edited by G.H.R. Parkinson. Translated by Mary Morris and G.H.R Parkinson, (London, 1973).

Conf = *Confessio philosophi: Papers Concerning the Problem of Evil, 1671-1678*. Edited and Translated by R.C. Sleigh, Brandon Look, and James H. Stam, Yale University Press, 2005.

Introduction

My goal is to provide a clear explanation of Leibniz's notoriously difficult system of relations. Relations among 'windowless' substances that exert no causal power over one another seems like a pipe dream that should be abandoned. However, I demonstrate that each substance expresses its relations only through the unique representation of all other substances. That is, any relation a substance expresses is due to this unique, perspectival, non-causal, representation of others. Because this is the case for all substances, this means that this relation of representation is an ongoing process of interconnection for all substances. This representation is not merely a cognitive copy of the universe (i.e. all other substances); it is the expression of all other substances from a distinct perspective. All other substances are therefore *included* in any given substance in a unique way. By 'include', I mean expressed as a constitutive part. To reiterate, every expression of a relation only is what it is because of the inclusion, through representation, of all other substances. This view of relations is thereby clearly opposed to claims that relations are the results of corresponding fixed predicates. Relations do not simply match-up with one another by design like a jigsaw puzzle. By understanding relations as included within substances, it is also clear that relations are not some 'third thing' that occupy a unique ontological status. Nor is it the case that relations are only intrinsically generated (requiring no interconnection among related substances) because relations clearly require the existence and inclusion of others. Lastly, it is not the case that relations are so extrinsic that they are merely phenomenal; relations are the product of the essential constitution of substances as interconnected mirrors of the universe. I am arguing that none of these views of relations are compatible with a holistic view of Leibniz's substance metaphysics. By taking a holistic approach, I show that Leibniz is not contradicting himself when he claims that substances are windowless, relations are ideal, all

substances are interconnected, and there are no such things as purely extrinsic denominations.[1] The resulting view of relations is one that accounts for the 'windowless' nature of substances but also shows that they are interconnected in their representation of one another.[2] Therefore, rather than corresponding isolation, imaginary relations, or mere phenomena, Leibniz provides an account of relations built on interconnection.

Relations are not the only aspect of Leibniz's philosophy that utilizes this inclusion of interconnection. Leibniz sees this inclusion of infinite difference in a single expression as a solution to the problem of the material continuum and the infinite divisibility of motion. Rather than argue for irreducible material atoms or increments of motion, Leibniz utilizes an operation of inclusion to show that bodies and motions always include all the smaller parts (or durations) that precede them and the greater ones that follow from them. By approaching bodies and motions in this way, Leibniz is showing how every motion or body is an expression of the interconnection of all motions or bodies. The language that Leibniz uses to express this interconnection is 'folds'. If I fold up a sheet of paper infinitely many times, then any given fold will include an infinity of smaller folds enfolded within it and its structure will be what it is due to how it incorporates these smaller folds. The language of folds expresses how interconnection leads to expression without causing any change in the subject itself. I argue that relations are a kind of fold because the same operation is at play in relations; the expression of a given relation by a substance is due to the inclusion of all other substances.

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[1] GP VI 607-8 (AG 213-4) [1714], GP II 516 and 517 (AG 202 and 203) [1714], GP VII 401 (AG 338-9) [1715-16], GP II 282-3 (AG 186) [1686], A.vi.4, 1645-6 (AG 32) [around 1686], A.vi.6, 228 (RB 228) [1704], GP VI 616 (AG 220) [1714], GP II 59 (L 338) [1686], C 521 (AG 33) [1689], GP IV 484-5 (AG 143-4) [1695], GP II 226 (L 524-5) [1701], GP VII 401 (L 704) [1715], GP II 516 and 517 (AG 202 and 203) [1714], GP VII 401 (AG 338-9) [1715-16], GP II 282-3 (AG 186) [1686].
[2] GP VI 616 (AG 220)

While Leibniz discusses folds most extensively in the context of motion, he also utilizes folds to discuss how substances express themselves.[3] It is the process of enfolding and unfolding relations that institutes the interconnection of all substances without violating the windowless nature of substances. This process of enfolding preserves the irreducible individuality (i.e. the windowless nature) of the substances enfolded while making it clear that the substance expressing the relation is only able to express that relation at all because of the interconnection with others.

Furthermore, I understand the theory of relations Leibniz develops to support this interconnection is a theory of intimacy. By 'intimacy' I mean a privileged and unique experience of the other as irreducibly other. Intimate relations are therefore those that preserve the irreducible individuality of others to whom I am related while also accounting for the privilege of the connection that is experienced in my relationships. This intimacy is experienced to different degrees depending on the relation in question; I may be particularly aware of this intimacy with my friends and family but less so with my co-workers, and I may even be oblivious to this with strangers. The intimacy is clearly experienced if the relation is *unfolded* and only confusedly experienced or not experienced at all depending on how *enfolded* the relation is in me. My awareness may not always be there, but Leibniz is providing a structure of relational inclusion in which all relations are nevertheless intimately represented and experienceable. In what follows, I will show that Leibniz's theory of relations provides an account of interconnection that makes shared or unifying relations superfluous at best and a violation of individuality at worst. Whether or not Leibniz intended it to be so, I consider such a

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[3] Ibid, 617 (AG 221)

view to be justifiably understood as grounds for a theory of intimacy based on the account of interconnection it offers.

Leibniz's system of relations on its own is quite difficult to understand. Since Bertrand Russell first popularized English language work on Leibniz, there have been many who view Leibniz's account of relations to be reductionist.[4] This reductionist view of relations argues that since each subject has an irreducible individuality, the relation is reduced to a singular relational predicate in each subject that happens to correspond. For example, the relationship "Paris and Helen are lovers" is reducible to the simple predication of "lover of Helen" in Paris and the corresponding "beloved by Paris" for Helen (and vice versa for Helen's love of Paris). Jan Cover and John O'Leary Hawthorne are contemporary thinkers who advance a more refined version of this reductionist view that started with Russell.[5] Others will argue that while relational predicates are how subjects express relations, it is nevertheless the case that the resulting relation should not be reduced to just these predicates. Massimo Mugnai, Nicholas Rescher, and Hector Castañeda perhaps most evidently represent this view in their works.[6]

While Leibniz might seem to contradict himself at times in ways that validate these readings, I think that viewing Leibniz's work more holistically allows for these seeming contradictions to be resolved. Leibniz was a complicated thinker who often adjusted the presentation of his views to be more palatable to his audience or interlocutors. Despite this consistent accommodation, I think that Leibniz's philosophy is still largely consistent. Grasping

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[4] Russell, Bertrand. *A Critical Exposition of the Philosophy of Leibniz*. (1937).
[5] Cover, Jan and John O'Leary Hawthorne. *Substance and Individualism in Leibniz*. (1999).
[6] Castañeda, Hector-Neri. "Leibniz and Plato's *Phaedo* Theory of Relations and Predication" in Michael Hooker (ed.), *Leibniz: Critical and Interpretative Essays*. (1982), pp. 124-159. Mugnai, Massimo. *Leibniz' Theory of Relations* (1992). Rescher, Nicholas. *On Leibniz: Expanded Edition*. (2013).

this consistency, though, requires understanding the various permutations of his thought in his logical works, his writings on physics and metaphysics, his epistemology, and, of course, his explicit statements about relations.

My work here is significant not only for the clarity it offers on Leibniz's theory of relations, but also for its approach to 'folds' as a valuable philosophical operation for Leibniz that is at play in multiple aspects of his philosophy. My goal is to show that relations are a kind of fold and how this system of folding allows for interconnection, but there are assuredly other ways in which the use of this operation is at play in Leibniz's philosophy. Folds, or at least the operation of inclusion that they express, are an aspect of Leibniz's philosophy that should be interrogated outside of Leibniz's accounts of motion and the continuum.

Looking at Leibniz's philosophy in this more holistic way, I work to show that the operations of inclusion at work in folds of motion are the same operations at work in relations. These operations are so persistent throughout Leibniz's philosophy that it becomes clear that they rely on the various principles in Leibniz's philosophy. Therefore, while the specific deployment of these principles might be unique in each aspect of Leibniz's philosophy, it is still based in the expression of one of his principles. I think that these operations are complexion (i.e. the operation involved in treating a complex whole as a simple), similarity (which is often mistaken for coincidence), congruence (which is when multiple subjects express the same thing similarly and equally but still distinguishably), and concurrence (when multiple subjects act together to produce something). Additionally, the principles are: the identity of indiscernibles, similitude, interconnection and congruence, and, the conservation of force. However, just listing these principles and the operations that express them does not explain how it is that these

operations express each principle. Exploring the details of these operations and principles requires examining multiple aspects of Leibniz's work.

By exploring the connections between these principles and the operations of inclusion as they manifest in various types of folds (including relations) provides a view of Leibniz's system that justifies his claim that all substances are interconnected.[7] The way in which Leibnizian substances are interconnected does not reduce this interconnection to something like a solipsistic harmony where subjects understand the world purely from their own vantage point with no recognition of otherness. It is this solipsistic view that allows for the reduction of relations into matching relational predicates, and nothing more than that. However, such a view overlooks Leibniz's consistent claims of interconnection and universal representation (the entire universe is represented by all monads, albeit only a small portion is ever clearly represented). Accounting for these aspects of Leibniz's philosophy means that any view of relations has to be able to show that any relational expressions by a subject are only expressed in that way because of the unique interconnection with, and representation of, the universe by the subject in question.

Essentially, Paris is not a lover of Helen unless everything else in the universe conspires in his being a lover of Helen given his particular perspective on the universe. Leibniz's theory of relations more than evades any labels of solipsism – it makes them absurd. Leibniz's theory of relations, insofar as it relies on the other but also asserts that one can never be unified with them, provides an interesting argument for the necessity of intimacy over unity. Unity is impossible not only because it impoverishes substantial diversity but because it would require the ability for one substance to act on the other in a directly causal way, something that Leibniz's metaphysics

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[7] GP VII 321-2 (L 365) [around the 1690s] c.f. A. vi. 6. p.227 and 239 (RB 227 and 239), GP VI 613 and 616 (AG 218 and 220), GP II 59 (L 338) [1686], C 521 (AG 33) [1689], GP IV 484-5 (AG 143-4) [1695], GP II 226 (L 524-5) [1701].

forbids. However, there is still an undeniable interconnection and productive coordinated acting that allows one to read this as a theory of intimacy.

To fully understand how this interconnection functions without becoming causal (because for Leibniz, substances cannot truly cause anything in one another), one need look no further than folds. Particularly, Leibniz's account of motion through folds. Leibniz's account of motion in his dialogue, *Pacidius Philalethi*, argues that motion cannot be composed of indivisible parts. Motion occurs through the continuum of space, and therefore is infinitely divisible in the same way. Rather than being made up of indivisible 'parts', the continuum of motion (and space) should instead be understood as folded. That is, a segment of space or an instant of a motion is only a fold of motion or space that has enfolded within it infinitely many lesser folds. Moreover, this 'greater' fold of the motion or space in question is ultimately only a lesser fold in the grand scheme of motions, but the lesser folds nonetheless also include all greater folds. All the folds of motion are so interconnected that it is impossible to consider one in isolation. This is because they are all contiguous with one another.

This language of contiguity arises out of Leibniz's conception of space as a plenum. A plenum being a completely full space, with no 'space' in-between bodies such that they are all contiguous. Such a conception of space necessitates the idea that any action anywhere in the plenum always ripples out to all other bodies in the plenum given their contiguity with one another. I think that the system of relations in Leibniz, given the interconnection of all substances, utilizes this same system of contiguous effect. Paris' body only moves because that is how his body reacts to (or more accurately, represents) the actions of all other bodies and he loves Helen because that is how he represents the whole world from his perspective. Likewise, I would not be writing this introduction if not for the way I represent and respond to the world

around me nor would I have any relational predicates if it were not for my interconnection with others and the way I represent this world of others.

It has been my task in what follows to clarify how relations function for Leibniz as well as why this system of relations should be recognized as intimate. Of course, part of this requires the acceptance of my understanding of intimacy. If someone understands intimacy as something unifying or the instantiation of some clearly known shared connection, then I must both disagree and woefully admit that I have never known such an intimacy if it exists. I do not disavow the connection of intimacy, but I cannot provide any experience of such an intimacy that allowed me to clearly know what the person I was close to was thinking, how they felt, what it was like to be them, or even that they are experiencing our relationship in the same way I am. I can say that in my closest intimate relationships that I have been acutely aware of how much I wish I did clearly know those things. Whereas in my less intimate relations, this lack of omniscience rarely bothers me. The structure of relations in Leibniz's philosophy is such that the other person I am related to is included in me *as* a relation to that other person. The other person is therefore both an inextricable part of me but also distinct from me (and I am likewise distinct from them and a part of them). My experience of the other person is uniquely my own but is also generated out of their otherness and my inability to have comprehensive knowledge of them. Insofar as one recognizes and engages that relation (i.e. insofar as the relation is unfolded), the structure of the relation produces a disposition of intimacy toward that relation. This disposition of intimacy is the recognition of irreducible difference while also valuing the similarity and equality of the relation as it is expressed by those to whom I am clearly related. This disposition of intimacy recognizes that not having omniscience regarding the other is not a deficiency of relations. Rather, this restriction is what makes the relation possible. In my less intensely intimate relations, the

structure is still there but insofar as I am unaware or uninterested in those relations, my disposition is not refined. Although, that is not to say that the potential to refine that disposition is ever lost given the structure of the relation.

Many of us have clear knowledge of friends, family, or partners to such an extent that we can reliably predict how they will act under certain conditions. This is nothing other than habit, though, not clear knowledge. The knowledge that intimacy provides is not just knowledge about the other but also knowledge about the relation that interconnects you and the other. For Leibniz, every substance must represent the entire universe and is in turn interconnected with all substances that constitute this universe. The interconnection arises from the need to represent everything. Therefore, if some stranger to me feels upset, I must represent this person's mood in my own representation of the universe. More than that, were it not for that stranger's mood (as well as an infinity of other contributing factors that I am leaving out for simplicity) my own self would be different. This is an aspect of Leibniz's thought that I find particularly interesting: his claim that every other substance in the world is constitutive of myself and fully represented within myself (and I am likewise part of the network of substances that lead to the constitution of all others). Fully representing the other sounds as though it moves beyond the notion of autonomy and irreducible individuality that is so central to my conception of intimacy, but Leibniz manages to avoid this pitfall. For Leibniz, substances do represent everything in its totality, but these complete representations of others are unfolded or enfolded in substances to different degrees. That is, I completely represent the stranger who is upset to such a degree that I represent every part of his thought process that led to his current mood. However, this is so enfolded in me that I am also oblivious to the fact that I represent this.

Such a state of obliviousness does not seem intimate at first. However, when one realizes that this means that my partner, family, friends, etc. are also all equally represented within me and constitutive of who I am, as well as the relations I express toward them, the intimacy of this interconnection becomes clearer. After all, I am not oblivious to *every* substance I represent (i.e. not all my relations are so enfolded), in fact, I have rather clear knowledge of many of those who I interact with most evidently. However, because Leibniz is so committed to the interconnection of all things it is the case that my *unfolded* relations are only unfolded for me due to the relations *enfolded* in them. To be clear, this does not mean that I am at the mercy of all these enfolded relations such that they dictate what relations I experience. Rather, my perspective on the world is such that I unfold certain relations insofar as their expression of the world concurs the most with my own expression of the world. Put another way, I understand myself to be clearly related to subjects whose perspective on the world likewise inclines them to unfold a relation with me. Therefore, a clearly understood relation is one where similar expressions of the world equally unfold or express the relation in question while maintaining differentiability.

My understanding of Leibniz's theory of folds and relations is that those others whom I know clearly are those that are most unfolded in me. By being most unfolded within me, I do not think it is unfair to likewise call this degree of connection a contiguous one. However, since "contiguous" is a spatial term, I will argue that one can use the language of virtual coincidence (developed in Leibniz's logical writings) to express this connection at the level of representation and expression. My unfolded relations are virtually coincident with another's insofar as they unfold a relation with me. The changes in my representation of the world are most explicitly experienced by me through my interactions, representations, and understanding, of these virtually coincident others. I take this virtual coincidence to show that my relations with those

who I know most clearly are unique insofar as I understand and recognize that we are mutually producing our relation with one another in distinct ways. A virtual coincidence cannot be explicit because the expressions would be identical and individuality would be lost. Even saying that Helen and Paris explicitly coincide in their expression of the relation 'lovers' such that they are distinguishable in all ways *except* for this one relation would not work for Leibniz. The reason I do not think this would work for Leibniz is because it is only due to Paris' representation of the world in his unique way and the fact that his appetites drive his perceptions in a unique way that Paris becomes a lover of Helen (and likewise for Helen's love of Paris). If the explicit relation were shared, then it would require sharing the entire infinity of interconnected perceptions that led to the production of that relation in each subject. Moreover, it is only because Paris represents Helen in his unique way and because Helen represents Paris in her unique way that they are each able to produce the relation 'lover of Helen/Paris' in themselves. In realizing the mutual production that requires the other and the virtual coincidence with this other, I recognize the other both as an autonomous agent and as someone whose expression of the universe most concurs with my own.

Leibniz's use of concurrence describes those relations that are *like* cause and effect because of this virtual coincidence. [8] I think Leibniz understand these concurrent relations to be, instead of a causal relation, a coordinated acting together in distinct ways. This concurrence of virtually coincident expressions is what I understand to be the point at which intimacy is most fully included in a relation.

To some extent, though, all the relations in me that are so enfolded that they are never clearly understood are still virtually coincident with me. Intimacy, at every level, is the

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[8] A. vi. 6. p. 142 (NE 142) [1704], c.f. Ibid, 358 (358), C 545, and C 471.

privileged production of a relation through difference and similarity. However, these unfolded relations would not be produced without all the other enfolded relations that are not clearly known. The structure of Leibnizian relations shows that all relations are included in subjects in a way that makes intimate dispositions *possible,* but it is not the case that all these relations are clearly understood *as* intimate. For example, my representation of the world from my perspective is what it is because the person who made my shirt exists. However, I do not know this person well and I am at a circumstantial disadvantage when it comes to trying to develop such a relationship (e.g. I do not live in the same country as they do, although that is not the extent of my disadvantages). However, this relationship still has the potential to be known through an intimate disposition. I could wake up tomorrow feeling I need to make it my life's mission to become best friends with this shirt-maker and I may well be successful (although this would require the shirt-maker to likewise feel the urge to become best friends with me). However, it so happens that (at least to this point) my perspective on the world and the shirt-maker's have not aligned in such a way that we have developed our relationship. Leibniz's system demands all the conditions that make intimacy possible are always at play for all relations, whether one develops that intimacy is dependent on mutual expression.

To make these points, though, there is much work to do. I must establish a clear understanding of all the instances where Leibniz explicitly uses the language of folds so that I can understand the specific operations that this language describes. I must also look at Leibniz's explicit writings on relations, particularly his use of logical reduplication to express these relations since this approach is rare. I think it similarly necessary to offer a clear reading of what Leibniz means by both 'virtual' and 'ideal' since both of these technical terms are deployed in

his discussions of relations and are incredibly philosophically loaded. Of course, I must also consider how each order of relations discussed by Leibniz includes (or limits) intimacy.

A breakdown of how these tasks will be accomplished is as follows:

In the first chapter, I engage the question of what a fold is for Leibniz. This task entails a lot of crucial setup because providing a close reading of the *Pacidius* dialogue (wherein Leibniz most famously deploys the language of folds to explain motion and the constitution of the material world) requires grasping the problem of the continuum for Leibniz. I think it is also necessary to understand the history of his development of his solution (folds) to this continuum problem as well as his unique approach to infinity. The problem, or labyrinth, of the continuum is that if every instant of motion or extended body can always be divided, then there is no indivisible constitutive element that makes up motion or matter. Folds are one of the main ways that Leibniz is able to argue his way through this labyrinth and provide a reasonable account of motion and matter that does not require imagined indivisible bodies or pure instances of motion.

Moreover, I think that when looking at Leibniz's theory of folds, it is important to consider why Leibniz arrived at this concept of 'fold'. I trace this idea back to Leibniz's *Dissertation on the Arts of Combination*, wherein he defined and proposed the utility of 'complexions'. It is not only the case that there is a strong linguistic/etymological link between *complexion* and *plexum/pli* (fold) that should be investigated, but I also try to argue that complexions serve the same function as folds for Leibniz and should therefore be recognized as his earliest attempt at giving this operation a technical term. To that extent, I think it is worthwhile to examine how other early modern thinkers utilized the term 'complexion' to provide a clearer context and understanding.

Guiding my reading of Leibniz's use of folds is the work of Gilles Deleuze, Richard Arthur, and Samuel Levey.[9] Both Arthur and Levey are Leibniz scholars that have done extensive work on Leibniz's solutions to the continuum problem, with Levey being the most noted English language scholar of 'folds' in Leibniz. Deleuze is easily the most influential reader of Leibniz's usage of folds following his publication of *The Fold: Leibniz and the Baroque*. However, while I think Deleuze's work on folds is masterful, it is also couched within Deleuze's own difficult philosophy. Additionally, it is challenging to distinguish Deleuze's own utilization of folds from his explications of Leibniz's intended utilization of folds. Other scholars of Leibniz who offer definitions of folds will also be examined and evaluated but none of these scholars have focused on the continuum problem in Leibniz or his use of the concept of folds as much as Arthur, Deleuze, or Levey. Additionally, John Bell's work on the historical problem of the continuum, and his ability to provide insight into how exactly Leibniz differs from his predecessors and contemporaries, is incredibly useful.[10] Bell's work helps bring the larger picture more into focus as well as provide some understanding of what drives Leibniz's method of solving this problem of the continuum. I use these vital works by others to further clarify and expand the scholarship on folds as well as setup my own reading of relations as a kind of fold that includes intimacy.

Through the support of this scholarship, I offer a reading of the *Pacidius* and propose that there is a perceptual continuum as well. Within this perceptual continuum are various apperceptions and relations that are not themselves indivisible but are instead composed and

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[9] Deleuze, Gilles. *The Fold: Leibniz and the Baroque*. Tom Conley (trans.). (1993). Leibniz, G.W. *The Labyrinth of the Continuum: Writings on the Continuum Problem, 1672-1686*, Richard Arthur (ed. and trans.), (2001). Arthur, Richard. "Leibniz's Syncategorematic Actual Infinite," (2018). Levey, Samuel. "Leibniz's Constructivism and Infinitely Folded Matter," (1999). Levey, Samuel. "The Interval of Motion in Leibniz's *Pacidius Philalethi*," (2003).
[10] Bell, John. *The Continuous and the Infinitesimal*. (2007).

interconnected through the infinity of perceptions that monads undergo at all times in their representation of the universe (i.e. all other monads). The interconnection within this perceptual continuum will be the grounds for the claim that there is a virtual coincidence in relational expressions.

Following this examination of folds and the assertion of a perceptual continuum, I want to examine Leibniz's explicit discussions of relations. Leibniz actually considers multiple types of relations: comparative, congruent, and concurrent. Each of these relations will be examined and defined. However, the biggest task of this chapter is tackling Leibniz's use of logical reduplication for expressing relations.

The best scholarly account of this system of reduplication Leibniz is Massimo Mugnai.[11] His work on reduplication will be invaluable to me; however, I also disagree with his conclusion that logical reduplication shows that Leibniz considered all relations to be mere results. I think that logical reduplication is meant to exaggerate the distinction between subjects to the point that the relation looks like a mere result, but that Leibniz's understanding of concurrent relations goes beyond this level of 'result' and shows the interconnection and production at play in relations. While Mugnai pays special attention to reduplication as used by Leibniz, Allan Bäck's work traces the historical usage of reduplication up to (and beyond) Leibniz.[12]

While there is relatively little extensive scholarship on folds in Leibniz, such is not the case for relations in Leibniz. Since Bertrand Russell, scholarship on Leibniz has struggled to agree upon any understanding of how relations function in Leibniz or what the status of relations are for Leibniz. Therefore, in this chapter, I engage Russell, Nicholar Rescher, Hide Ishiguro, Jaakko Hintikaa, Benson Mates, Jan Cover, and John O'Leary-Hawthorne; I summarize their

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[11] Mugnai, Massimo. *Leibniz' Theory of Relations*. (1992)
[12] Bäck, Allan. *On Reduplication*. (1997)

views and distinguish my own understanding from each of theirs.[13] While I disagree with their views, my own understanding of Leibniz's theory of relations would not be what it is were it not for the work of these others and the way they have focused my thinking on particular issues in Leibniz.

Perhaps the largest issue at play in any understanding of Leibniz's theory of relations is what it means for relations to be ideal or virtual. I think that these two questions are far too complex to answer together in a single chapter; therefore, I have devoted a chapter to examining each.

There is a reasonable amount of commentary on the 'virtual' in Leibniz by scholars such as Marc Parmentier, Paula Schwebel, Héctor-Neri Castañeda, and Abdul Muhit.[14] However, I do not think any investigation of the virtual satisfactorily explains how the virtual is at play in relations and relational predicates. Therefore, in this next section, I interact with the views of those scholars as well as key instances of Leibniz's use of the virtual, and then I show how this virtuality is at play specifically in Leibniz's theory of relations.

One such key instance in which Leibniz utilizes 'virtual' is in his letters to Arnauld discussing the problem of freedom. For Leibniz, there are two types of truth: necessary and contingent. Necessary truths are those that cannot be otherwise and contingent truths are those

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[13] Castañeda, Hector-Neri. "Leibniz and Plato's *Phaedo* Theory of Relations and Predication," (1982). Cover, Jan and John O'Leary Hawthorne. *Substance and Individualism in Leibniz.* (1999). Hintikka, Jaakko. "Leibniz on Plenitude, Relations and the 'Reign of Law', (1972). Ishiguro, Hidé. "Leibniz's Theory of the Ideality of Relations," (1972). Ishiguro, *Leibniz's Philosophy of Logic and Language.* (1991). Mates, Benson. *The Philosophy of Leibniz: Metaphysics and Language* (1986). Mugnai, Massimo. *Leibniz' Theory of Relations* (1992). Rescher, Nicholas. *On Leibniz: Expanded Edition.* (2013). Russell, Bertrand. *A Critical Exposition of the Philosophy of Leibniz.* (1937).

[14] Castañeda, Héctor-Neri, "Leibniz's Concepts and Their Coincidence *Salva Veritae,*" (1974). Muhit, Abdul, "Leibniz on Necessary and Contingent Truths", (July 2010 - June 2011). Parmentier, Marc. "Leibniz et le virtuel," (2015). Schwebel, Paula. "Intensive Infinity: Walter Benjamin's Reception of Leibniz and its Sources," (2012).

that hinge on certain circumstances (e.g. the statement "there will be a ship battle tomorrow" is contingently true whereas 1+1=2 is necessary). For Leibniz, all existing beings are contingent; their existence is not necessary but instead relies on God's will. This is because their essence does not contain existence (unlike God). Nevertheless, when God chooses to create the world and all the subjects who live in it, does not God's omniscience reveal the necessity of certain events? Particularly, by bringing Adam into existence, does God will Adam to be a sinner? This is Arnauld's question, and Leibniz responds by claiming that Adam is *virtually* a sinner from the moment of creation, but this virtual predication just means that Adam is the kind of person who certainly will sin, but this sinning has not become explicit yet.[15] Therefore, God may have certain knowledge of this inevitable sinning, but it is because 'sinner' is a predicate of Adam's being, not because God knows it to be true.

Leibniz similarly deploys the virtual in relation to predicates when he states in *Discourse on Metaphysics,* "when the predicate is not explicitly contained in the subject, it must be contained in it virtually."[16] In what follows, he makes clear that what he has in mind is something like the predicate 'king' in Alexander the Great that was virtually contained in Alexander from his birth. What appears to be the case in these examples (Adam becoming a sinner and Alexander becoming a king) is that what is virtual *inevitably* becomes explicit. However, this is not the case for all instances of the virtual.

In Leibniz's usage of the virtual in his logical works, he introduces the concept of "virtual coincidence". This virtual coincidence occurs when two terms are distinct but also superposable insofar as they include the other, e.g. "Alexander the Great" and "the King of Macedonia who conquered Darius". These two terms are virtually the same given that they apply to (i.e. include)

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[15] GP II 15 (LA 9) [1686]
[16] A VI 433 (AG 41) [1686]

the same subject but they explicitly express that subject in different ways. I argue in what follows that relational *congruence* occurs when there is relation of virtual coincidence among subjects. To make this point, I engage with Leibniz's writings on *analysis situs* wherein he engages the issue of how to examine two distinct expressions that are equal and similar (i.e. virtually coincident). In the remainder of this section, I continue to work through the ramifications on relations that this understanding of the virtual has. Additionally, I turn to Gilles Deleuze's discussion of the virtual in Leibniz is his book *The Fold* and pay special attention to Deleuze's table of inclusion wherein he details what is virtually enfolded or explicitly unfolded (that is, what the operation of folding is enfolding or unfolding) within various levels of Leibniz's philosophy.[17]

The next subject to address is Leibniz's use of 'ideal'. Leibniz is often (understandably) evaluated as an idealist by contemporary standards. This is largely because Leibniz himself uses the language of 'ideal'. However, there was no agreed upon definition of idealism until after Leibniz's death. Given this, I am hesitant to assert that Leibniz's own intended usage of 'ideal' was synonymous with the definitions established after his writing.

Ultimately, it does not matter much if Leibniz is or is not an idealist by contemporary standards. What I do think is important is determining what 'ideal' means *for* Leibniz. In this chapter, I argue that what is 'ideal' is equivalent to abstractions. Understanding what is ideal as that which is produced by abstraction allows me then consider what Leibniz means when he claims that relations are ideal. Ultimately, I will argue that folds in motion are also ideal because they are likewise abstractions of the continuum of motion. All this established I try to show how the fact that relational statements (e.g. "Paris and Helen are lovers") are ideal (i.e. abstractions)

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[17] Deleuze, *The Fold*, p.57.

means that relations are uniquely understood but still generated by the continuum of all other

monads, i.e. they are intimate. Examining a portion of a motion is just as incomplete of an

account of the continuum of motion as saying "Paris and Helen are lovers" is an incomplete

account of their relation. Despite the incompleteness, they are, in Leibniz's own words,

"nevertheless useful." [18]

Lastly, I provide more in-depth articulations of why I consider Leibniz's theory of

relations to be the inclusion of intimacy by examining the kind of intimacy that is included in

each kind of relation: complexions, similarity, congruence, and concurrence. To show how these

orders of intimacy are dependent on various aspects of Leibniz's philosophy as well as designate

what is predicated in each of these intimate relations, I have decided to provide a table of

intimacy that models Deleuze's table of inclusion that was examined in the third chapter.

I argue that complexions are the simplest form of relation because they represent the

relation of oneself to oneself. Similarity is the move beyond oneself to recognize subjects that are

like oneself but also maintains a firm distinction of identity. The loss of this distinction of

identity results in the mistaken assumption of coincidence, i.e. the certainty that a relation is truly

shared between multiple subjects rather than expressed and produced together. Congruent

relations are those where the similarity of the other(s) I am related to is pushed to its limit

because I realize not only the similarity but also the equality of our expressions of the relation we

produce. Despite this equality and similarity, distinct identity is always maintained. Lastly, in

concurrence, I consider the possibility of the universal intimacy that is expressed in the

interconnection of all substances. It is admittedly difficult to think of such a broad and inclusive

kind of relation as 'intimate', but I think that Leibniz's philosophy makes it possible by

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[18] GP VII 401 (AG 339) [1716]

demanding that even this universal interconnection is always privately experienced. In addition to instituting a universal intimacy, this level of intimacy is also the level where the production of one's private experience is recognized as produced through the (virtually coincident) interconnection. There is no relation formed in isolation, all relations depend on the representation of this interconnection.

Therefore, the bulk of this chapter will focus on refining these orders of inclusion that enfold intimacy into relations to clarify my understanding of the intimacy at play in Leibniz's theory. However, this chapter will also show how these levels of intimacy are at play in other aspects of Leibniz's philosophy such as motion, the material continuum, identity formation, and logic. I will also provide some feedback on why I think my own table of inclusion is a necessary expansion of Deleuze's table of inclusion from *The Fold*.

The goal of this project is to provide a clear reading of Leibniz's theory of relations that shows how interconnection is achieved within the constraints of his metaphysics. I argue for this by showing that relations exhibit the same operation of inclusion that Leibniz utilizes the language of 'folds' to describe in his account of motion. By viewing Leibniz's system of relations as a system of enfolding and unfolding expressions, I am able to resolve the seemingly contradictory statements that Leibniz makes regarding relations. Every expression of a relation in one substance must be understood as produced through the inclusion of all other substances. In addition to all this, I argue that Leibniz's theory of relations attests to the experienced interconnection of intimacy while preserving individuality.

Chapter I: The Fold: Contiguity and Continuity

Leibniz's philosophy of relations is consistent on the following claims: first, relations are merely mental things [*rem mere mentalum*] whereby relations which "join" [*jungunt*] two monads together are not truly in either monad, but only "in the mind alone."[1] Second, Leibniz claims that there are no truly extrinsic predicates, meaning that everything said of a monad is based in the monad.[2] The scholarly explanation of these claims has been that relational statements such as 'Paris loves Helen' are simply the 'result' of understanding both Paris' expression of the relational predicate 'lover of Helen' and Helen's expression of the relational predicate 'beloved of Paris'.[3] Meaning that there is, strictly speaking, no 'relation' between Paris and Helen – only correspondence. The predicates adhere to their subjects, but only in a solipsistic way, i.e. Paris would have the predicate 'lover of Helen' whether Helen existed or not.[4] Therefore, the 'relation' only *results* from considering Paris and Helen together and understanding their corresponding predicates. While the '*how*' of this has arguably been shown in the scholarship, the '*why*' remains unclear.[5] I want to examine *why* the mind understands these two relational predicates as resulting in a relational statement because I think there is more to the

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[1] GP II 486 (DB 327) [1716] and GP II 517 (AG 203) [1714] c.f. GP VII 401 (AG 339) [1715-16]

[2] A.vi.4, 1645-6 (AG 32) [around 1686], c.f. A.vi.6, p.228 (NE 228) [1704]

[3] I am mostly referring here to Mugnai's, *Leibniz' Theory of Relations*. However, I would also include Cover and O'Leary-Hawthorne's, *Substance and Individualism in Leibniz*, as well as Rescher's, *Leibniz*, as texts that provide similar readings.

[4] I will be using 'subject', 'substance', 'agent', 'mind', 'soul', and 'monad', relatively interchangeably. There are nuanced differences (for Leibniz) regarding the limits of what can be referred to by each of these terms. However, in the circumstances which I am utilizing these terms, these limits are not violated, and the terms can be understood as synonymous. Most often, when I am using a different term, it is to coincide with Leibniz's own language in the quoted sections. It should be kept in mind that Leibniz did not utilize the language of 'monads' until late in his life but the concept of 'monad' is consistent with his usage of other terms in earlier periods of his life. While a thorough examination of how each of these terms differs is worthwhile and interesting, it does detract from the thesis of this chapter and my larger project.

[5] The 'how' seems to be rooted in Leibniz's use of logical reduplicatives to express relations. This will be explored in depth in the next chapter.

formation of these relations.[6] I will show that it is the *activity* of substances expressing these

relational predicates (such as 'Helen is beloved by Paris') which produce the relational

statements ('Paris and Helen are lovers') rather than the stagnant qualities that minds interpret.

Thus, one of my initial questions is why does the mind conceive unity, or congruence, out of

discrete relational predicates?[7] My proposed answer relies on another aspect of Leibniz's

philosophy: his system of folds.[8] Leibniz primarily uses folds as a way of understanding the

division of the activity of motion into discrete lesser principles of activity that congruently form

a greater motion. I argue that this congruence, which forms something greater than any of its

constituent parts, is also at play in Leibniz's system of relations.

Furthermore, by understanding relations as a type of fold, I argue that relational

statements are concluded by the mind due to the intimacy of the relational predicates expressed,

not just the similarity of the expressed predicates. In Leibniz's use of folds to describe motion,

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[6] For Leibniz, while minds are monads, not all monads are minds or perform mental operations. Leibniz
often uses the terms 'mind' and 'soul' interchangeably because in the hierarchy of monads a 'soul' or
'mind' is a monad which has the ability to reflect on perceptions, i.e. has memory (GP VI 598 and 610;
AG 207 and 215). A mental operation, then, is the monad reflecting upon its perceptions, an act called
'apperceiving'. Therefore, to reiterate, scholarship has claimed that relations only result when a monad
reflects upon its perceptions of multiple subjects at once and understands a strong similarity.
[7] "Congruence" represents a kind of agreement between distinct forces, expressions, or substances.
However, the precise usage of this term by Leibniz will be explained in greater depth in the next chapter.
[8] Philosophical usage of the terms 'pli', 'repli', 'plica', 'envelopper', and 'developer' can be found in the
following texts: Correspondence with Arnauld, A.ii.2, 44,46,53,69,118,187,191,255,315,596;
Correspondence with Foucher, A.ii.2, 91; Correspondence with Jacques-Benigne Bossuet, A.ii.2,
516,824; Correspondence with Pellisson-Fontanier, A.ii.2, 596,613,627; Correspondence with Princess
Sophie, A.ii.2, 845-6,849; Correspondence with Queen Sophie Charlotte, GP VI 500 (AG 187);
Correspondence with Bayle, A.ii.4, 92203,92303-4; Correspondence with Lady Masham, A.ii.4,
585302,585304,585504-5; *Pacidius to Philalethes* A.vi.3, 555 (RA 185); Commentary on Augustine's
Confessions, A.iv.4, 1687; *Metaphysical Definitions and Reflections* A.iv.4 p.1401; *Conspectus Libelli
Elementorum Physicae*, A.iv.4, 1990; *Table of Definitions*, C. 485; *Monadology,* GP VI 617 and 619 (AG
221-2); *New System of Nature* GP IV 481-2 (AG 141-2); Correspondence with Bernouli, GP III 547 (AG
169); *Principles of Nature and Grace* GP VI 601 (AG 209), GP VI 604 (AG 211); *On Body and Force,
Against the Cartesians* GP IV 396 (AG 253) [Note; this passage uses *evolvi* and *involvique* which
translate into folded language but these are not the standard fold terms used by Leibniz, nonetheless, the
context seems to validate understanding them as 'fold' terms.]; *Preface to the New Essays* GP V 48 (AG
296)

Leibniz describes folds as 'indistant', or contiguous, and it is this contiguity of activities which validates the consistency of the greater activity of motion. Likewise, I understand relational predicates to be expressing a representation of the world in a way that approaches, but does not produce, unity. These representations of the world, as it is expressed in and by each subject, supply a congruence that the mind understands as unity. However, this congruence can never be brought into fruition as absolute unity because such a fruition would lead one to conclude these distinct substances had influenced or affected one another such that a shared understanding now took the place of the previously private expression. Leibniz is explicitly against this and claims that monads are windowless; monads cannot be augmented in any way except through a change in their own internal notion.[9] Therefore, "Paris loves Helen" is only part of Paris' representation of the world since it cannot directly affect Helen herself. I agree with Leibniz's understanding precisely because it does not figure relations as affections. Moreover, the reasons why Leibniz deems relations mental (which will be examined throughout this dissertation, but particularly in the next chapter) all point to the fact that relations are activities of substances. These activities do not have causal effects on other substances but do instantiate an intimacy of expressive force (which will be made clearer when discussing Leibniz's solution to the Sorites paradox). Therefore, these expressions of relational predicates, while they may tend toward a unity with another's expression of their own relational predicate, must remain private. Therefore, the intimacy is two-fold: the relational predicate is private and intimate to the predicated subject, but it is also intimate *to* the relational predicate of the other – it approaches unity but only produces intimacy. This second kind of intimacy, I argue, mirrors the indistance of activities, or forces, in motion.

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[9] GP VI 607-8 (AG 213-4) [1714]

In motion, every fold represents a degree of the force in the overall activity of the motion; these forces do not *cause* the forces that follow from them, nor are they caused by the preceding ones. Yet, these forces are 'connected' by the indistance of their force that supplies a congruence, or agreement, of force understood as the overall activity of motion. A simplified example would be something like typing with both hands at once. The actions of the right hand are distinct from the actions of the left hand, but are congruent insofar as they carry out the force of the desire to type certain words. However, this act of typing can also be considered at the level of the many distinct parts of my body, such as the nerves and muscles, which are congruent in the act of one finger pressing a single key. In the *Pacidius Philalethi* dialogue, Leibniz describes this structure of force as folded, claiming that enfolded within every instance of force is an infinity of 'lesser' folds which can also be unfolded infinitely into even lesser degrees of force. Ultimately, this folded structure of force allows for the congruence of activity to be understood as unified even though it simultaneously affirms that each force is truly discrete from the all the others.

While this inclines readers to understand 'folds' as measures of active force, or *conatus*, it should be conceded that Leibniz does not explicitly define it as such. Leibniz provides only one definition from his 1702-04 encyclopedia, stating that, "*A fold* [*plica*] is a line constituting an angle in the bend of two continuous surfaces."[10] I will show that these 'angles in the bend' that connect two distinct continuous surfaces operate in the same way that relational statements operate for substances. However, the utility of this definition does appear confined to its usage in

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[10] C 485 [around 1702-4], translation done with the help of Aaron Higginsbrake, original: *Plica est linea angulum constituens duarum superficierum continuarum in flexili*. Note: this definition is found in Leibniz's incomplete encyclopedia of all knowledge. This particular entry falls under 'Separated Motion' chapter within the 'Physical Accidents' section. Therefore, while this definition will be helpful for understanding the use of 'fold' in motion, it may not correlate exactly for the metaphysical usage of the term.

Leibniz's physics, and makes it difficult to extrapolate what it could mean for relations. This is important because Leibniz *does* use the language of folds to discuss the internal workings of monads, claiming for instance that souls cannot unfold all their folds at once.[11] If relations are a kind of fold, they are certainly of the kind internal to monads given that they are derived from the internal notions of monads. However, while Leibniz at least asserts that there are folds in souls, he is not clear as to what these folds *are*; whereas in motion he is fairly clear that folds, or at least what is *folded*, is activity. The 1702-04 entry for 'fold', though, is immediately followed by the entry for "To Explicate [*explicare*]." Not only are these terms etymologically connected, but Leibniz states that "to explicate is thus to bend [*flectere*] so that the angle is diminished in such a way that it can be removed."[12] Insofar as explication can be understood as a mental task, it seems to operate by way of reducing the differentiation of distinct factors. Yet, this explication seems reliant upon the structure of folds to be able to make this connection at all.

Due to the lack of clarity regarding folds, I will explain the problem of the continuum and how Leibniz utilized a syncategorematic approach to infinity, and folds, to solve this problem. This syncategorematic approach understands the infinite as a distributive and developing infinite rather than a fixed infinite. That is, categorematic conceptions of the infinite consider the infinite to be akin to an infinitely large container, whereas a distributive and developing infinite is constantly producing rather than acting as a fixed container. I will then explain *why* the structure of folds supplies congruence across multiple distinct activities, first in motion and then in perception and apperception (the conscious reflection upon perceptions). That is, why does the structure of folds encourage the explication of unity out of distinct factors? Once the question of

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[11] GP VI 617 (AG 221) [1714]
[12] C 485

why folds provide congruence can be answered, then it can be shown whether this same operation is at play in relations.

The Problem of the Continuum

The discussion of what is continuous or eternal is perhaps one of the first philosophical questions. However, the 16th-17th century philosophical and mathematical interactions with the problem are unique in their focus on the concept of *continuous variation*.[13] Conceived broadly, this was the attempt to unite, or undo, the longstanding division between the continuous and the discrete.[14] That is, if any number or line can be endlessly subdivided then it becomes difficult to understand actual discrete quantities. If, however, this division can go on infinitely then the ground which all other mathematical values are built upon is the concept of an infinitesimal. That is, the division cannot go down to zero, because if this were the case then, at its ground, number would be produced through the addition of zeros, which is nonsense. Infinitesimal or 'evanescent' numbers (numbers that only barely participate in 'number' and are almost indistinguishable from zero) then allowed for the calculations of things such as curves and volumes. However, while many recognized this endless division in mathematics, they hesitated to understand the material world as the product of infinitesimals. That is, given that mathematics deals with ideal quantities, it is possible to understand them as infinitely divided. Thinkers like Pierre Gassendi, though, argued that the material world is not ideal, and thus, cannot be infinitely divided and must be made up of indivisible atoms.[15]

John Bell argues that Leibniz's crucial contribution was to reevaluate the status of the continuum wholesale, and to claim that the material continuum is ideal even though the parts that

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[13] J.L. Bell, *The Continuous and the Infinitesimal* (Polimetrica 2007), p.54
[14] Ibid.
[15] J.L. Bell p.64-5

make up this continuum are real. Bell writes, "Leibniz concluded that continua are not *real entities* at all; as 'wholes preceding their parts' they have instead a purely ideal character. In this way, he freed the continuum from the requirement that, as something intelligible, it must itself be simple or a compound of simples."[16] The distinction between the 'real' and the 'ideal' can be confusing because the language makes it sound as though what is ideal is fake. For Leibniz, what is 'real' is that which has phenomenal existence: a chair, an animal, heavenly bodies, another person, etc. Numbers, however, are the clearest example of something ideal. Numbers are true and apply to nearly everything one encounters in the phenomenal world, yet no one will ever encounter a number itself. The category of 'ideal' is then those things that the mind has access to but lack existence in the phenomenal world. Thus, Leibniz's solution to the problem of the continuum was to recognize that it would be structured in an ideal way rather than a real way. The structure of 'real' things is procedural, beginning with parts and ending in wholes, such as the construction of a house. However, an infinite continuum cannot have a beginning, so it cannot have parts. Now, since no one ever encounters structures like this in the phenomenal world, such a structure can only be conceived of by minds. This instantiates the synonymous relationship between 'ideal' and 'mental'. The problem with this relationship, though, is that not all mental constructions are true, e.g. unicorns. While what is ideal can be known by minds, this does not mean that what is ideal is simply a fantasy of the mind. This is worth paying attention to when working to understand Leibniz's account of relations, as he often admits that relations are ideal but does not claim that this makes them invalid or fake.

Returning to Leibniz's claims about the structure of continuum; the difficulty lies in Leibniz's usage of monads to function as the metaphysical grounding for all discrete unities

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[16] Ibid., p.77

within this ideal continuum. Therefore, while the 'real' phenomenal world is made up of parts, the division of these parts is potentially endless. Leibniz's solution was to conceive of the phenomenal world as a kind of hybrid of the real and the ideal. This might not seem problematic at first, but it soon becomes clear that Leibniz is able to understand and solve issues of motion and unity based on the ubiquitous presence of monads in all of matter. Monads themselves are indivisible, but the 'quantity' of monads in any substantial unity is infinite. Monads not only ground substances by providing a metaphysical anchor, or 'point', but they also function as the vital aspect of all unities – the impetus for all motions. Leibniz writes,

> But *atoms of matter* are contrary to reason...There are only atoms of substance, that is, real unities absolutely destitute of parts, which are the source of actions, the first absolute principles of the composition of things and, as it were, the final elements in the analysis of substantial things. We could call them *metaphysical points*: they have *something vital,* a kind of *perception*, and *mathematical points* are the *points of view f*rom which they express the universe. But when corporeal substances are contracted, all their organs together constitute only a *physical point* relative to us. Thus physical points are indivisible only in appearance; mathematical points are exact, but they are merely modalities. Only metaphysical points… are exact and real, and without them there would be nothing real, since without true unities there would be no multiplicity.[17]

In essence, Leibniz has seemingly taken the mathematical conception of infinitesimals and applied them to the physical world through asserting a revitalized conception of substantial forms, i.e., monads. To clarify, by utilizing monads as the grounds for the parts of the phenomenal world, Leibniz is also able to provide an understanding for why the world is active rather than stagnant. An account of the world by virtue of its phenomenal parts cannot describe how the world *lives*. A metaphysical component can provide this account but, since it is never encountered in the phenomenal world, this metaphysical component is also ideal.

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[17]GP IV 482 (AG 142) [1695]

Furthermore, recent scholarship has asserted that Leibniz is not dealing with categorematic infinity and is instead utilizing a syncategorematic infinity, not only in his understanding of the mathematical continuum, but also in the natural world.[18] As the passage I just quoted from Leibniz states, without unities there is no multiplicity. Leibniz was a firm believer in the actual (as opposed to potential) infinity of nature, that being the fact that all 'wholes' have an infinity of parts.[19] While, as was shown by Bell, the whole precedes the parts for Leibniz, these parts are actually infinite – just as is the case with geometric wholes and fractions. What should be noted is that the 'actual' part of 'actual infinite' has a different connotation here as opposed to the rest of Leibniz's philosophy. In Leibniz's metaphysics, something is 'actual' when it exists in the phenomenal world, it is no longer a mere potentiality. However, the 'actual infinity of nature' does not exist in the real world but is only actual insofar as it is *truly* infinite as opposed to a categorematic infinite. That is, 'actual infinity of nature' is 'actual' because it is more authentically infinite than a categorematic infinite which is, by Leibniz's understanding, not actually infinite. The infinity of nature is productive of an endless series of divisions, each part of which is equally endlessly divisible – the infinity is distributed throughout the parts. Richard Arthur notes that Leibniz did not always want to admit this fact, and originally rejected the claim when stated by Galileo, but that eventually it becomes one of the keystones of his philosophy.[20] The key for Leibniz is that the infinity of parts is only ideal.

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[18] See: Vassil Vidinsky, "Dynamical Interpretation of Leibniz's Continuum" (2008) and Richard Arthur, "Leibniz's Syncategorematic Actual Infinite" (2018), c.f. Samuel Levey, "Matter and Two Concepts of Continuity in Leibniz" (1998).

[19] DB 20-1 [Feb. 1706]

[20] In one of Leibniz's letters to Des Bosses, he initially had the sentence "Mea certe philosophia sine infinita actu multitudine stare non potest" [trans. "My philosophy certainly cannot stand without an actual infinite multitude"] (LDB 20-1). While Leibniz omits this sentence from the final letter, it is clear, though, that the actual infinite is a crucial aspect of his philosophy. Also, for a discussion of Leibniz's initial refusal and eventual acceptance of Galileo's claims about wholes being less than their parts, see Arthur's "Leibniz's Syncategorematic Actual Infinite" (pp. 159-161).

That is, in the phenomenal world, wholes are preceded by parts but in the ideal continuum, parts are preceded by infinite wholes.[21] Leibniz expresses this clearly in his letter to De Volder:

> In actuals there is nothing but discrete quantity, namely the multitude of monads or simple substances, which is greater than any number whatever in any aggregate whatever that is sensible, i.e. corresponds to phenomena. But continuous quantity is something ideal, which pertains to possibles and to actuals *insofar as they are considered possible*. For the continuum involves indeterminate parts, whereas in actuals there is nothing indefinite – indeed, in them any division that can be made is made. Actuals are composed as is a number from unities, ideals as is a number from fractions: the parts are actual in the real whole, not in the ideal whole.[22]

While Leibniz will admit that one can consider actuals under the lens of an ideal division, this is only a consideration of the *possible* division. To clarify, the natural world is syncategorematically infinite, meaning that there is a potentially infinite division of the natural world that could be undertaken by minds. However, this being the case does not change the fact that the phenomenal world is full of actual (recall again the fact that in Leibniz's metaphysics, what is actual is that which has existence rather than mere potentiality) wholes. Therefore, this possible division is distinct from the division of an actual phenomenal body into its parts wherein "any division that can be made is made," because actuals are not indefinite. To my mind, this is best modeled by Leibniz's understanding of motion via folds. To examine this, I think it is best to start with Samuel Levey's examination of the account of motion given in the *Pacidius Philalethi*. In that dialogue, Leibniz invokes folds to propose an understanding of the physical world and motions. However, before jumping ahead to Leibniz's account of motion, I first want to develop a better understanding of Leibniz's approach to the mathematical continuum so that it might be easier to understand how he transfers this understanding to his account of motion via

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[21] "In actual things, simples are prior to aggregates; in ideal things, the whole is prior to the part. Neglect of this consideration has produced the labyrinth of the continuum" (DB 140-1) [July 1709]

[22] DV 333 [Jan. 1706] (my italics)

folds. To do this, I want to turn to Leibniz's *Dissertatio de Arte Combinatoria*. The *Dissertatio* is one of his earliest writings and it is also where he introduces the concept 'complexion' (*complexio*) as a way of understanding arithmetical combinations of simple concepts as complex concepts. My interest in the development of this concept lies in my understanding of 'complexions' as a predecessor of folds but that is more specifically tailored to Leibniz's understanding of the mathematical continuum. Thus, while I admit that the concept of folds has yet to be fully developed here, I think it will be beneficial to engage with one of Leibniz's earliest engagements with the continuum problem. Moreover, I think this analysis will prove useful given that it can shed light on how Leibniz understands relational statements since they are ideal even though they result from actual relational predicates.

Complexions

> The definition of 'complexion' that Leibniz offers in the *Dissertatio* is as follows:

> A *complexion* [*complexio*] is the union of a smaller whole within the greater…in order to determine a certain complexion, however, the greater whole is to be divided into equal parts assumed as minima (that is, parts now not to be considered as further divisible). Of these parts it is composed, and by the variation of them the complexion or lesser whole may be varied.[23]

It should be noted immediately that what clearly differentiates complexions from folds is not only that complexions *can be* divided down into minima but are also *assumed,* or taken to be, minima, whereas folds are not. However, this initial incongruity is due to the subject matter of the mathematical continuum. As Bell points out, Leibniz understands the mathematical continuum to be an ideal whole, that is, a whole that precedes its parts and is infinitely divisible. Despite this, there are whole numbers, or numbers that can be understood as 'minima', even though they are ideally divisible. Further still, Leibniz states only that these equal parts should

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[23] GP IV 37 (L 78) [1666]

be *assumed* as minima, not that they truly are, which indicates Leibniz' skepticism regarding minima from the very beginning. It is also worth noting that while technically the Latin *complexio* translates as 'combination' or 'connection', the root term *complex* is synonymous with *plexus*, or 'fold'. This is meaningless in isolation, however, but if the two concepts, complexions and folds, perform similar operations in Leibniz's philosophy, then this etymological link might be further evidence that 'complexion' is a predecessor of 'fold'.

The discussion of complexions develops out of the topic of combinations of basic principles, that is, the breaking down of complex structures into their constituent parts. This view inclines Leibniz to return to Aristotle's primary elements.[24] Complexions, then, are things like the elements (fire, water, earth, air) which comprise the physical world. However, complexions are not limited to physical structures; rather, the whole enterprise of Leibniz's early *Dissertatio* is to understand the basic principles that are combined to make up our world. It is the task of finding a sort of alphabet through which existence pronounces itself. To undertake this task requires a strong distinction between parts and wholes. Complexions play a crucial role in that distinction.

A unity, Leibniz argues in the *Dissertatio*, is the 'larger whole' which is composed of a variety of 'smaller' or 'lesser' wholes, which are the complexions. The connections between these smaller wholes and the larger whole are relations. As Leibniz states, "every relation is either one of *union* [*unio*] or *harmony* [*convenientia*]. In union the things between which there is this relation are called *parts*, and taken together with their *union*, a whole. This happens whenever we take many things simultaneously as *one* [*unum*]."[25] What is being taken as one in this instance? Namely, any given complexion is taken as a minima and functions as such.

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[24] GP IV 41 (L 75) [1666]
[25] GP IV 35 (L 76) [1666]

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However, as Leibniz is aware, these are still composites of parts. This is clear from his initial postulate in the *Dissertatio* which states:

> Any number of things whatever may be taken simultaneously and yet be treated as one whole. If anyone makes bold to deny this, I will prove it. The concept of *parts* is this: given a plurality of beings all of which are understood to have something in common; then, since it is inconvenient or impossible to enumerate all of them every time, one name is thought of which takes the place of all the parts in our reasoning, to make the expression shorter. This is called the *whole*. But in any number of given things whatever, even infinite, we can understand what is true of all, since we can enumerate them all individually, at least in an infinite time. It is therefore permissible to use one name in our reasoning in place of all, and this will itself be *whole*.[26]

While this postulate pertains to Leibniz's demonstration of the existence of God, it is crucial for understanding his approach to mereology. That is, Leibniz is claiming that since (given an infinite amount of time) the human mind is capable of infinite division, this capability can be assumed from the outset. That is, since humans can (in theory) account for all the parts of a whole, it is permissible to skip this process and take as whole that which is considered to be whole even if it is still constituted by parts. However, while something like a body can be broken down into parts such as bones, organs, blood vessels, muscles, and skin, each of these parts is also infinitely divisible for Leibniz. Nevertheless, since all the 'parts' of skin share a high similarity with one another, they can be grouped by the mind into the complexion 'skin', and thereby, be taken as one. A whole body can also be understood as one and thus, understood as a complexion. Therefore, when Leibniz says that complexion are the unions of smaller wholes within greater ones, this means that a complexion is that which I perceive as all of its parts at once. As Richard Brown explains, "The number of members in a complexion is the 'exponent,' … while the number of members in the whole is called the *number*. What we call the number of

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[26] GP IV 32 (L 73) [1666]

combinations of *n* objects taken, say, 3 at a time he writes as "con3nation," and so forth."[27]

Therefore, a complexion is what is taken as one, but in taking it as one, the multiplicity is not lost

because it is represented by the exponent. Leibniz elaborates on this by stating,

> Because the lesser whole itself is greater or less according as more parts are included at
> any time, we call the number of parts or unities to be connected together at one time the
> *exponent*, after the example of a geometric progression. For example, let the whole be
> ABCD. If the lesser whole is to consist of two parts, for example, AB, AC, BC, BD, CD,
> the exponent will be 2…We shall write the complexions with a given exponent as
> follows: if the exponent is 2, *com2nation* (combination); if 3, *con3nation* (consternation);
> if 4, *con4nation*; etc. *Complexions taken simply* are all complexions computed for all
> exponents; for example, 15 of the number 4. These consist of 4 units, 6 com2nations, 4
> con3ternation, 1 con4nation.[28]

This showcases how complexions themselves serve as means of preserving the multiplicity of

parts in any given whole while also avoiding the mess of having to deal with these parts by

denoting them as distinct complex wholes. Thus, Bell's claims about Leibniz's solution to the

problem of the mathematical continuum are correct. Leibniz understood the infinite divisibility

of something to be true, but he also understood reason's *potential* to equal this task. That is, any

whole is ideally infinite, but because this infinity is understood as a circumstantial disadvantage

rather than an epistemological limit, Leibniz is able to allow what the mind takes to be wholes to

function as wholes without issue.[29]

What is particularly interesting, however, is that after asserting that wholes can be taken

as wholes without issue, he then considers relations between parts and wholes in terms of

'quantity':

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[27] Richard C. Brown, *The Tangled Origins of the Leibnizian Calculus*, 71.
[28] GP IV 37 (L 78) [1666]
[29] This "circumstantial disadvantage" refers to our finite lifespans in which it is impossible to perform an
infinite analysis. Thus, Leibniz does not think we are incapable of the cognitive feat of an infinite
analysis, rather our embodied situation inhibits us from doing so.

An affection (or mode) of a being, moreover, is either something absolute, which is called quality, or something relative, and this latter is either the affection of a thing relative to its parts if it has any, that is, quantity [*quantitas*], or that of one thing relative to another, relation [*relatio*]. But if we speak more accurately and assume a part to be different from the whole, the quantity of a thing is also a relation to its part.[30]

The general idea here is that while Leibniz is understanding that things can be taken as 'one' or as 'whole', this is always a statement of the relation of parts to wholes. Since, as Leibniz makes clear, this is not the case for *all* affections, the 'relations' of 'quantity' Leibniz has in mind are of two types: the relations of parts within a thing taken to be whole, and the relation of 'wholes' to other 'wholes' such as the relation 'four is greater than two'. However, there is also the changing number of parts within a whole that constitutes a different kind of relation: one of quantity. To utilize a bodily example again, I can say that I have one hand, but this hand is made up of five fingers, and if I lose a finger then the quantitative relation between the whole (the hand) and the parts (the fingers) has changed. Thus, Leibniz is admitting that for anything taken to be whole, there is an understanding that it is constituted through the relation of the unity of its parts. Furthermore, while Leibniz does claim that "in the continuum, the whole is prior to its parts," when it comes to discrete unities, "the whole is not prior to the parts, but rather the converse."[31] Thus, in something like the mathematical continuum, the whole of the infinite number of numbers is assumed before any actual numbers are posited. When it comes to my hand, though, it is the parts (bones, flesh, blood vessels, nerves, number of digits, etc.) which precede, but also incline toward, the concept of the whole 'hand'. What is interesting is that I might; for instance, take a series of words together as a single sentence and yet I might completely distinguish two

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[30] GP IV 35 (L 76) [1666]
[31] A.vi.3, 502 (LoC 99) [1676] and A.vi.4, 1393. (LoC 235)

numbers from one another. That is, why do I take the former to be a single unity whereas I take the latter to be a set of two distinct unities?

Aspects of this question will be examined further in many of the sections to come but dealt with most explicitly in the fourth chapter. For now, Leibniz's primary answer is that the condition for taking something as one is that the activity or force of the thing considered is consistent across its parts. This means, in brief, that while a body can be understood as one, there are still a myriad of other 'bodies' within the body which could also be understood as one (such as organs, limbs, etc.). I consider this to be relevant for relations insofar as Leibniz will claim that part of the issue with relations is that, when understood as one, it overlooks the complexity and variety of the relational predicates that are being 'taken as one' in a relational statement. "Paris loves Helen" becomes just as gross of an oversimplification as reducing the body to being a single part. I consider this approach valuable because it preserves the distinctions and agency of the related parties, but I am suspicious about whether or not giving preference to this individuality means that relations themselves lose meaning. That said, as I dig deeper into Leibniz's theory of relations, I think it will be clear why his understanding of relations as actively produced avoids this pitfall.

The History of 'Complexion'

Others have used the term 'complexion' during the early modern period. Notably, in the First Set of Objections to Descartes' *Meditations*, Johannes Caterus wrote, "the complex [*complexum*] 'existing lion' includes both 'lion' and 'existence', and it includes them essentially, for if you take away either element it will not be the same complex [*fi enim alterutrum demas, idem hoc complexum non erit*]."[32] While Caterus' intention here is to raise an objection to

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[32] AT 7:99 (CSM 2:72) [1641]

Descartes' proof of God based on the definition of God, the way Caterus uses the term *complexum* is helpful for understanding its use in philosophical discourse at the time. The common usage of 'complex' prior to Leibniz's utilization of 'complexion' was to refer to a composite of qualities. That is, the qualities 'lion' and 'existing' are enveloped in the single complex 'existing lion'.[33] While Caterus is not calling this a 'combination', he still understands two main aspects of complexions in the same way as Leibniz: the removal or altering of either 'part' ('existing' or 'lion') would completely change the expressed 'whole' and the unity of these 'parts' is understood as a complexion because the parts are understood together at once.

It is worth noting that the French dictionary entries for '*complexion*' and '*complexe*' provide definitions that seem to line up with how I have proposed we understand the usage of the terms here. The first edition of *Le Dictionnaire de L'Académie française* has an entry for *complexion* but not for *complexe*. The entry for *complexion* depicts it as defining a temperament or bodily constitution – one might have a good or bad complexion.[34] The entry for *complexe* which appears in the fourth edition of *Le Dictionnaire de L'Académie française* understands the term as opposed to 'simple' and denoting a single concept or being which contains several characteristics.[35] Additionally, while *Le Grand Robert* offers an almost identical definition for *complexion*, the definition for *complexe*, while fully compatible with *Le Dictionnaire*, is more explicit: "That which contains, which brings together several different elements."[36] *Complexe* does not appear in the French dictionary until 1762; however, its Latin cognate was widely used and carries the same definition (as seen in Caterus' usage above). The association of

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[33] It should be noted that Leibniz probably would not approve of Caterus' example as it is unclear how 'existence' could count as a simple quality. However, the example from Caterus is still useful as a reference for the usage of the term 'complex' in the early modern period.

[34] *Le Dictionnaire de L'Académie française,* 1ˢᵗ edition, p. 222 (1694)

[35] *Le Dictionnaire de L'Académie française*, 4ᵗʰ edition, p. 349 (1762)

[36] Qui contient, qui réunit plusieurs éléments différents. *Le Grand Robert*, entry for *complexe*.

complexions with bodily constitution aligns with Leibniz' own view that complexions constitute a given unity. However, the usage of complexion in Leibniz's work is less controversial given that he provides his own definition.

Additionally, Descartes' complex circle theorem is helpful in understanding how Leibniz might have understood complexes and complexions. Descartes' theorem states that for any complex of three mutually tangent – or 'kissing' – circles, a fourth circle can be devised that is tangential with the other three. The unarticulated geometrical principle on which Descartes' theorem rests is that if we know enough about the composite parts of a thing, then we can map out the possibilities that might follow for the structure if it were to maintain its tendency. To my mind, this aligns with what Leibniz is claiming about complexions and how they relate to his project of finding a universal characteristic. While I believe that Leibniz's initial conception of 'complexions' is different in certain aspects from his conception of folds, I see the development of this concept as indicative of Leibniz's claim that wholes, or complexes, are always reducible to parts. What I am arguing here is that he begins by describing these reducible wholes as complexions and later develops the language of folds to address the same problem.

To summarize, I understand Leibniz's early development of complexions establishes his interest in parts and wholes. However, as his understanding of substance matures to the point that all bodies are composed of an infinite number of substances he realizes that 'parts' and 'wholes' no longer express his meaning, so he adopts the language of folds. While folds do not function identically to his understanding of complexions, they do seem to address the same philosophical concerns and therefore provide further insight into the functionality of folds.

<u>Motion in Folds</u>

In the dialogue, *Pacidius Philalethi*, two of the main characters, Charinus and Pacidius, engage in a discussion of motion. However, this discussion of motion is situated for us by posing a variation of the classic Sorites paradox: between two states, such as rich and poor, where is the limit of one and the beginning of the other? As Leibniz writes it:

> Pa.: Suppose a penny is given to a pauper. Does he cease to be poor?
> Ch.: No.
> Pa.: If another penny is given to him, does he cease to be poor then?
> Ch.: No more than before.
> Pa.: Therefore he does not cease to be poor if a third penny is given to him?
> Ch.: No.
> Pa.: The same applies to any other one: for either he never ceases to be poor, or he does so by the gain of one penny. Suppose he ceases to be poor when he gets a thousandth penny, having already got nine hundred and ninety-nine; it is still one penny removed his poverty.
> Ch.: I can see the force of the argument, and I'm surprised I was deluded like this.
> Pa.: Do you admit, then, that either nobody becomes rich or poor, or one can become so by the gain or loss of one penny?
> Ch.: I am forced to admit this.[37]

What becomes clear is that Leibniz is setting up the same mathematical problem of the continuum here with respect to changes of state to introduce the issue of motion. That is, the existence of minima emerges in the issue of discriminating between rich and poor. However, it also means that when I say something was in place A and is now in place B, the question becomes: "how did it get there?" Leibniz's claim is that this cannot be answered through recourse to discrete motions. Motion must instead be continuous such that there are no leaps. However, simply understanding motion as continuous hardly solves the whole problem, we are still left with the same problem of discerning the actual moments of change via motion. As Levey points out, Leibniz is trying to find some sort of consistent quantity by which these

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[37] A.vi.3, 539 (LoC 153-5) [1676]

changes can be measured, similar to the how pennies function with regard to wealth or individual hairs with regard to baldness.[38] While seemingly we do have such measuring tools available, Levey points out the issue, stating;

> The approach of movable point *A* as it closes the distance to the fixed point *H* can equally well be measured in inches, or hundredths of an inch, or thousandths of an inch, and so on, right up to the theoretical limit. But just as in the first Sorites any extra measure of wealth beyond the minimum of wealth, the single penny, was actually superfluous in finally bringing about the change from being poor to not being poor… so too in this second Sorites [i.e. the paradox of movement] any extra measure of distance beyond a minimum must be superfluous in bringing about the about the change from not being near to being near.[39]

Therefore, while Leibniz wants to argue that there is a continuum of space, this space is filled with something *like* an *actual* minima.[40] That is, akin to the mathematical continuum, Leibniz will distinguish between the ideal continuum and its real parts. In mathematics, these real parts are the infinitesimals, but what are they with regard to motion?

In the *Pacidius* dialogue, Leibniz considers a few historical arguments for motion. The one that he is most interested in is the *proximus loci* argument that imagines motion to be continuous and uniform. That is, as Charinus explains in the dialogue:

> Let there be a moving body *G* for which there are two neighboring places [*loca duo proxima*] *A* and *C* whose interval must be null, i.e. a minimum; or, what is the same thing, the points *A* and *C* must be such that no point can be assumed between them , or such that if two bodies *RA* and *BC* were there, they would touch each other in the extrema *A* and *C*. So the motion is now the aggregate of the existences of the thing G in the two neighboring points A and C at two neighboring moments.[41]

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[38] Levey, "The Interval of Motion in Leibniz's *Pacidius Philalethi*" p.376
[39] Ibid., p.377
[40] Although Leibniz is clear that folds are not minima per se, as will be shown in the examination to follow.
[41] A.vi.3, 546 (LoC 169) [1676]

While this allows for motion without 'leaps' (something which Leibniz is pursuing given his principle that nature never makes leaps), the problem that the characters immediately recognize is that such an account of motion resolves motion into an infinity of minima or points without any substantial reality. Points do not have extension, therefore, since this method reduces the continuum to being composed of points and thus devoid of extension, this account of motion makes motion meaningless. Furthermore, this would make any interval of space or time *equally* infinite, that is, parts would be equal to wholes, which is absurd.[42] However, by Levey's reading, Leibniz argues that this is only the case if we assume motion to be *uniform* throughout. As Levey explains, in the seventeenth-century, a 'uniform' account of motion "often signifies unaccelerated motion or motion with constant velocity, i.e., the motion of a body suffering no inertial forces."[43] Clearly, this approach to motion is incompatible with Leibniz's understanding that everything in the world is constantly affecting everything else to varying perceptible or imperceptible degrees at "every single moment".[44] A non-uniform motion, then, accounts for changes in velocity and the incessance of inertial forces. Levey explains that the result of the insistent inertial forces and the variation of these forces is that "the resulting motion is not merely non-uniform, it is *nowhere* uniform across *any* subinterval."[45]

The crucial takeaway for Levey is that by conceiving of motion as non-uniform, Leibniz is "denying that the mathematical structure of motion is that of a straight line."[46] Levey is keen here to return to the mathematical model for motion, because he recognizes that Leibniz is applying the mathematical continuum to the problem of motion. Therefore, Leibniz's solution

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[42] Levey, "The Interval…*"*, p.381 (Nous 37:3 2003)
[43] Ibid., p. 384
[44] A.vi.3, 565 (LoC 209) [1676]
[45] Levey, "The Interval…", p. 386
[46] Ibid, p. 387

will seemingly have a mathematical correlate. As Levey shows, this is indeed the case; a non-uniform acceleration of motion produces the mathematical model of a *curve* rather than a line, however, this curve is not "smooth".[47] Specifically, each change in velocity creates a "spike" in the rate of motion that is non-differentiable from the previous rates of motion (all of which would be equally non-differentiable).[48] However, if motion is non-uniform then that means these "spikes" are ubiquitous throughout the motion, that is, the motion is not a constant homogenous whole but is rather an aggregate of singularities.[49] Thus, the continuum itself is composed of an infinity of singularities, and these singularities are not simply points since they each represent intensive differences in the sequence of motion.[50] That is, the singularities are distinct representations of the body in motion for every singular instant of motion, each singularity expresses an intensive difference from one another via velocity, mass, place, etc.

To explain this, Leibniz has Pacidius propose considering the material continuum to be 'folded';

> *Pa*.: Accordingly the division of the continuum must not be considered to be like the division of sand into grains, but like that of a sheet of paper or tunic into folds [*tunica in plicas*]. And so although there occur some folds [*plicae*] smaller than others infinite in number, a body is never thereby dissolved into points or minima. On the contrary… although it is torn into parts, not all the parts of the parts are so torn in their turn; instead they merely take shape for some time, and are transformed; and yet in this way there is no dissolution all the way down into points, even though any point is distinguished from any other by motion. It is just as if we suppose a tunic to be scored with folds [*plicis*] multiplied to infinity in such a way that there is no fold [*plica*] so small that it is not subdivided by a new fold [*nova plica*]… And the tunic cannot be said to be

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[47] Ibid.

[48] Note, "non-differentiable" in calculus does not mean homogeneous, and actually infers the discontinuity as opposed to the continuity of differentiable equations. This aligns with Levey's claims about fractals, wherein the angle is constantly shifting (it is a discontinuous operation).

[49] Ibid.

[50] The 'intensive' difference here is a distinguishing difference of the intensity of force. Each singularity is productive of motion but these singularities are not all expressing this motion *to the same degree.* The degree of expression is an *intensive* differentiation.

resolved all the way down into points; instead, although some folds [*plicae*] are smaller than others to infinity, bodies are always extended and points never become parts, but always remain mere extrema.[51]

There is clearly a lot to unpack here, however, as much of this is meant to model the mathematical approach to motion that is being proposed, i.e. a non-uniform continuum of motion, I think that what stands out the most is usage of extrema. That is, in this new understanding of motion, these folds or intensive points of difference in the continuum are understood as being extrema in relation to one another. When Leibniz previously uses the term 'extrema' in this dialogue, it is to discuss the "indistance" (the absolute closeness) between two points in the *locus proximus* account of motion.[52] That is, Leibniz understood the continuum of motion to be composed of indistant but distinct moments of motion. This becomes problematic for Leibniz due to the uniformity of motion assumed in this model, but he never dismisses this notion of indistance of extrema and returns to it here in the passage on folds. Thus, while there is no uniformity in motion and each moment of motion is a singularity which is non-differentiable from the preceding or following motion, one must still understand this succession of motion to the aggregation of *contiguous* intensities of motion. Therefore, to answer whether motion is contiguous (the sum of discrete motions) or continuous (one single motion that is infinitely subdivided into points), Leibniz's solution involves both. Motion can then be understood as a com∞nation of folds. When taken as single motion, it appears continuous, but this is an ideal understanding. For Leibniz, the actual motion is constructed of an infinity of contiguous – and therefore distinct but indistant – motions. Motion itself is continuous and makes no leaps, but because of the intensive differentiation from moment to moment, this motion is *never* the same

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[51] A.vi.3, 555 (LoC 186-7) [1676]
[52] ibid, 558 (LoC 191) [1676]

and thus contiguous with each previous and subsequent aspect of the motion. The extremum of one intensive moment of motion ends where the extremum of the next begins.

Fractal Folds

As previously mentioned, understanding motion as non-uniform means more than just not conceiving of motion mathematically as a straight line. The non-uniformity of motion leads to the endless production of difference in motion. Such a production of difference cannot be represented by a simple straight line but it is also not enough to think of it as a regular curve. A typical curve, when considered closely with regard to neighboring points can appear as if it is a straight line.[53] However, as Levey points out, the Koch curve, which is fractal, retains its heterogeneity no matter how 'zoomed in' on neighboring points one gets.[54] This is because each piece of the structure recreates the entirety of the structure, and so on within the pieces of the recreated structure ad infinitum.

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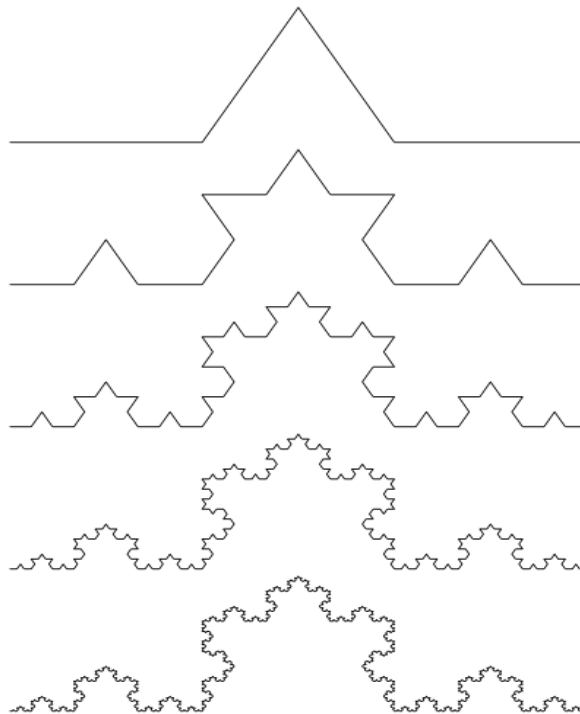
[53] Levey, "The Interval…," 395.
[54] Ibid, 395-6.

Figure 1[55]

In the above figure, one can see that the final structure is developed through the recursive representation of the initial structure. As Levey makes clear, this is far more than an interesting mathematical exercise, it is a means of understanding the degree of self-similarity for any given structure:

> The concept of fractal dimension and the general sense in which it yields a measure of how effectively a structure fills space can be illuminated by paying attention to the properties of a special subclass of fractal structures, the so-called self-similar ones, and their "scaling properties… A structure is (strictly) self-similar if it can be broken down into arbitrarily small pieces each of which is a scaled down replica of the entire structure. Likewise, with sufficiently many copies of a self-similar structure one can assemble a large scale replica of it.[56]

Thus, with regard to Leibniz's conception of motion in *Pacidius*, there is a similar structure at work. More importantly, it helps frame the definition of folds I explored at the start of this chapter, that is, "*A fold* [*plica*] is a line constituting an angle in the bend of two continuous surfaces."[57] If, as Levey explains, fractal curves are such that they never express a straight line, but are rather "all corners" then such a definition of folds explains how Leibniz understand folds to comprise substances and motions.[58] Any 'continuous surface' is, for Leibniz, always full of 'corners' or repetitions of self-similar differences. These intensive changes in density, velocity, frequency, perceivability, etc., are all still aligned with the same expression of force and are thus understood as a single substance. However, while these intensive changes are self-similar, they are not homogenous or uniform. This is most explicit in his understanding of shapes surfaces.

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[55] Koch Curve image courtesy of the Fractal Foundation:
https://fractalfoundation.org/resources/fractivities/koch-curve/
[56] Levey, "The Interval…," 394.
[57] C. 485 [1702-4]
[58] Levey, "The Interval..." p. 396

While Levey provides a detailed account of the infinite complexity of shape, what is critical to note is how he realizes the instrumentality of the imagination in understanding these shapes; "the imagination smooths over its [the world's] rough edges and presents the world in experience as if it were a Cartesian geometrically uniform one."[59] I see this as important for understanding how folds operate in the continuum as well: a folded structure, or motion, is always composed of infinitely many folds. The *imagination* smooths over these distinctions in folds, and it is acceptable for the imagination to do so because those folds which are 'smoothed over' are unifiable due to similarity of force.

However, the use of the term 'imagination' here in forming unities invokes precisely the kind of sentiment that I am trying to avoid, namely, that relational statements are no more than fantasies. That said, Leibniz's own account of imagination does not frame it in this way. In a letter to Queen Sophie, Leibniz decides to respond to her question "*whether there is something in our thoughts that does not arise from the senses*."[60] In essence, Sophie is asking if it is the case that abstract thought is also produced from sensations. Leibniz's response is that some knowledge, such as number, is derived from what he calls the 'common sense.'[61] However, there is also an internal sense that "contains both the *notions of the particular senses*, which are *clear but confused*, and the *notions of the common sense*, which are *clear and distinct*."[62] This internal sense is the imagination, and the imagination is vital for applying mathematics to the natural world. Leibniz recognizes that this applied knowledge would be completely untrustworthy if not

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[59] Levey, "Leibniz on Precise Shapes and the Corporeal World," 80.
[60] GP VI 499 (AG 186) [1702]
[61] The 'common sense' has its knowledge "by natural light and not at all by the experience of the senses" (Ibid 504; AG 189). However, perception and sensation are quite different things for Leibniz, and it seems that even this internal reflection upon knowledge provided by our "natural light," must be the result of perceptions.
[62] Ibid 501 (AG 187)

for the fact that it was guided by intelligence and understanding.[63] The criteria for knowing whether the imagination is being guided by the understanding comes down to whether the understanding has clear and distinct knowledge that can be applied to the phenomenal world.[64] Knowledge that is clear and distinct is that which is most actively expressed (perceived and apperceived) in the mind. For folds, the 'similarity' that the imagination is smoothing over is a self-similar production akin to fractal geometry. The root of this self-similarity is the activity, or monad, that provides substantiality. Likewise, I think that relational statements, which may in fact be the result of the imagination 'smoothing over' the distinct relational predicates, are produced when the mind has clear and distinct knowledge informing its decision to smooth over these differences.

While Leibniz struggles throughout his works to give a consistently satisfactory account of unity, the definition of a single body that characterizes his position from at least 1676 to the 1680s is as follows, "Now I call a body one if every action of its parts is an action of that one body and if the parts of this body are infinite."[65] Here is another instance where Leibniz is affirming the continuum of a non-uniform infinity of parts across a single action (the whole with an ideal infinity of parts). Moreover, Leibniz is explicitly relying on the action to provide the unity among these parts – there is no ideal infinity without an actual unity. When I speak aloud, many parts of my body are unified in the harmony of this action. Even though my body is different throughout every moment of its action (per Leibniz's claims about the indefinite nature of bodies), the singular continuity is the principle of action, or the expressed force.

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[63] Ibid. (AG 188)
[64] This will be discussed at greater length in chapters three and four.
[65] A.iv.4, 1401 (LoC 248-9) [1680-1]

Of course, even without considering time and motion, my body is not a particularly well-defined thing; as alluded earlier, I can lose skin, hair, and even limbs or organs. Moreover, some things can be added to my body as I age (scars, growths, etc.). This prompts Leibniz to use the following example: "This can be clarified by analogy with the natural air, which, on the removal of whatever was holding it in, spontaneously expands into space more than might be believed."[66] Thus, just like how a gas can expand to fill its container while still being considered a single body of gas, so too can any body change its size or composition and still be considered the same unity, so long as it is still in harmony with the same principle of action. If I lose a limb, or receive an organ transplant, my body is still a 'one' because all the parts are aspects of the same force, that force being the activity of my identity expressing itself. This identity that is expressing itself is my entelechy or monad. Therefore, like 'natural air', my force can expand or contract depending on circumstances but what is properly unified as 'me' is always aligned in terms of force. Unlike thinkers of the time, such as Locke, Leibniz is claiming that personal identity is linked to activity rather than cognitive consistency. This is important for Leibniz since monads can never perish but only become exceedingly diminished in their activity. This diminished or 'bare' monad is still perceiving, albeit very confusedly, and is thus still active.[67] Leibniz's reasons for this eternal identity are arguably diverse but most likely primarily due to his religious beliefs. A soul must be accountable for all of its actions; therefore, it is the activity which provides metaphysical consistency – not memory. While I hold no similar religious allegiance, what I admire about this approach is that one's identity and relations are intrinsically tied to activity rather than passivity.

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[66] Ibid.
[67] GP VI 610 (AG 216)

What is most interesting is that Leibniz views the folded structure of continua as the lynchpin that enables this understanding of unity: "For a unity always lasts as long as it can without destroying multiplicity, and this happens if bodies are understood to be folded [*plicari*] rather than divided. As, for example, a chord is one vibration, even though there is no part of it that does not have its own particular motion."[68] The chord is understood as a unity because its force is expressed, or represented, in every part of it. Expression and representation are fairly synonymous terms describing the unique perceptions, apperceptions, and other actions associated with a given monad.[69] Not all expressions or representations are conscious. Therefore, the unity of matter must be divided into "parts of equal power".[70] 'Power' is the activity of the formal aspect of a substance. When a mass of matter can be said to constitute one being, it is because the power attributed to this being is in a single harmony. The matter associated with this body is thus never the minima of the continuum, but the 'portion' of the continuum which has entered into a particular harmony of power with one another.

Furthermore, what is evident from the above statements from Leibniz is that he views this force as a non-uniform continuum. Take, for instance, his statement about vibrations in a chord. He explicitly states that every aspect of the chord played has its own distinct vibration even though it is part the single self-similar action.

Leibniz's discussions of vibrations in a chord recognizes that the 'unity' of enfolding all the different motions of the chord is one established despite the fact that these are unilateral and nonreciprocal forces. None of the motions in the chord are done *because* of one of the other

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[68] A.iv.4, 1402 (LoC 251)
[69] Leibniz often writes that "all individual substances are different expressions of the same universe" (C 521; AG 33, around 1686). Therefore, there is no single definition for what an expression is, it could be riding a bike, contemplating the heavens, or typing this footnote. Every expression is a representation of the universe from that particular point of view (the point of view of the expressing monad).
[70] A.iv.4, 1402 (LoC 251)

motions so they are not reciprocating any kind of exchange. I understand this same operation to be in place in relations, and the value of this operation is that it allows for these different expressions to be enfolded together in way which 'unifies' without the loss of absolute individuality. The relational side of this operation will be discussed in much greater detail in the following chapters.

Folds Beyond Motion

While Levey provides a thorough examination of the usage and purpose of folds as deployed in Leibniz's analysis of motion, scholars still struggle to identify the definition of folds outside of motion. For instance, Michael Friedman and Wolfgang Schäffner understand folds in Leibniz to represent "epistemological units", claiming:

> Taking the fold as an epistemological unit, as Gottfried Leibniz did, shows that it is nothing but a basic one. The fold functions neither as a basic element (the indecomposable chemical element), nor as one of the composing elements of Morse code (the line and the dot)...The geometric point, defined by Euclid as the basic element among all spatial elements, is for Leibniz no longer a minimal or static object, but an operation of folding.[71]

Such an understanding of folds is not exactly incorrect, as Leibniz is clearly developing a system for understanding the mereology of the world as well as determining how one can differentiate parts and wholes (as was seen in his development and use of complexions). However, Friedman and Schäffner seem to be focused too closely on the *minimum* aspect of folds, the endless 'folds within folds' that evades the notion of minima.

I understand Leibniz to be elaborating a system that accounts for greater operations via folds as well. That is, for there to be folds within folds, there must be some folds that are greater than others. This notion of 'greater', however, is not synonymous with 'larger' but is instead more closely related to understanding some folds as having higher concentrations of force. It is

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[71] Friedman & Schäffner, *On Folding*, 9.

this understanding of force that allows Leibniz to make statements regarding unity. Mogens Lærke seems to have a similar understanding when he claims,

> It is important to note that what is folded is not *extension* or *passive matter* in the Cartesian sense. What is folded is the fundamental component of Leibnizian physics, namely *force*: 'matter is a force which refolds itself incessantly'. As is well known, in his 'reformed physics' or 'dynamics', Leibniz argues that the essence of physical objects is not, as it is for Descartes, quantity, motion and shape, but *action* and *force*.[72]

This is a much more accurate understanding of folds and it also explains why Leibniz's most extensive usage of folds comes from a dialogue on motion – it is not controversial to think of motion in terms of action and force. What is important to note is that, while Leibniz introduced the terms through an analysis of motion, by also utilizing folds as epistemological units (knowable unities) of force he is able to carry-over the notion of folds into his metaphysics as well.

What I mean by epistemological units of force is that folds act as a way of understanding distinguishability of harmonized forces – that is, folds are the ideal division of unities. For instance, in moving my hands to type, I am clearly using the muscles in my fingers, but also relying on my circulatory system, the sensation of the keys under my fingers, and the intention of what I plan to write. Nonetheless, I call this the single act of 'typing', even while within this act are, by Leibniz's account, an infinity of enfolded forces that result in the act and motion of my typing. Yet, it is clear that my typing has a beginning and an end. This is because in the phenomenal world we are dealing with discrete actions. As Leibniz states, the folds are contiguous with one another. This is what makes the labyrinth of the continuum so hard to navigate: Leibniz is understanding motion simultaneously as an ideal continuum and a phenomenal contiguum, for which folds somehow provide congruence. Yet this is precisely what

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[72] Lærke, "Four Things Deleuze Learned from Leibniz," 28.

force does for Leibniz. Force, here understood as folds, provides congruence by uniting the contiguum of the phenomenal world with the continuum of ideal motion.

Folds, as defined in Leibniz's 1702-04 unfinished encyclopedia, are angles in the bend of two continuous surfaces. I understand this to mean that Leibniz not only sees folds as units of force and that *as* force, folds are that which unites contiguous actions of motion. Although, it is not exactly the 'angle' which is explicitly a force. The angle institutes the point of indistance that carries over, or joins, the force of expression from the one to the other. Thus, this angle is like an inflection point which carries over the expression of the line even though it switches from convex to concave.[73] If Levey is right and folds are self-similar expressions of force (in the style of fractal geometry), then eventually this self-similarity would seem to approach a level where it can be taken as one because of force. Richard Arthur calls this the Principle of Unassignable Difference in Leibniz's philosophy. Arthur's principle states that, "Two quantities or ratios of quantities whose difference can be made smaller than any assignable difference (by varying a co-dependent quantity), are equal."[74] I see this principle at play in Leibniz's thought as early as his use of complexions, where multiplicities are taken as one because the assignable difference is either null or negligible to the mind. Part of Leibniz's argument in *Pacidius* is that motion cannot be solved by simply dividing it into contiguous states – what is needed is something that impels the unity of these contiguous states, *viz.* force. Force unites by taking as 'one' those discrete moments of motion and realizing that self-similarity of the force of motion throughout the act of motion allows minds to take these actions as one. Ideally, these actions can still be divided infinitely, but the consistency of force allows for these actions to be understood as infinite complexions, or folds. Considering Leibniz's encyclopedic definition of folds, and Arthur's

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[73] 'Inflection' will be discussed at greater length in chapter three.
[74] Arthur, "Leibniz's Syncategorematic Actual Infinite," 160. (2018)

Principle of Unassignable Difference, I am claiming that Arthur's "varying co-dependent quality" and Leibniz's "angle in the bend" have no assignable difference either. Therefore, folds are units of force that provide epistemic clarity about the congruence of a given thing according to the consistency of the force expressed in the act under consideration.

What is important here is Leibniz preserves a unity or continuity despite a differentiation produced by the non-uniformity of motion and force. These endless instances of differentiation are the folds that still produce a single self-similar act. As Levey showed through his analogy of fractal curves, the largest structure (or action) is always constituted by a recursive self-similar repetition of the structure. What this seems to mean for Leibniz's account of force is that any action is accomplished only through the recursive repetition of a self-similar force throughout the entirety of the acting substance. One must keep in mind though that this recursive repetition, while self-similar, is not a repetition of the same. Even though folds allow us to understand as continuous that which is contiguous, Leibniz is adamant that while folds account for the consistency of motion, this consistency is accomplished by an infinity of folds.

It is important to remember is that the infinity of folds is a syncategorematic infinite. The difference between categorematic and syncategorematic becomes easier to understand with an example drawn from Arthur: if one understands *totus mondus est pulcher* in a categorematic way, then it would mean "the whole world is beautiful", whereas a syncategorematic understanding would render it as "each and every part of the world is beautiful".[75] In this way, Leibniz's account of motion as infinitely folded should be taken as a claim that each and every

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[75] This a modified version of the example found in Arthur, "Leibniz's Syncategorematic…" (2018) It should be noted that Arthur's Latin does not entirely provide the meaning he desires; by writing the sentence in the nominative case, it is impossible to translate it as "each and every part of the world is beautiful." However, had Arthur written it in the genitive, *toti mundi est pulcher*, this would be readable as "the whole of the world is beautiful" or "every part of the world is beautiful." That said, I do not think this defeats the intended utility of the example.

part of motion is folded. The syncategorematic understanding is distributive rather than collective, and it is this distribution of force in the action that provides the unity. Leibniz's unity is accomplished through the congruence of difference, not its dissolution. On this note, it seems useful to turn to Gilles Deleuze's account of Leibniz's use of folds. Deleuze's account, unsurprisingly, focuses on the generation of difference that Leibniz's understanding and usage of folds provides.

Enfolding Difference

Deleuze begins his analysis by way of analogy with a Baroque House with two floors, developing the image as follows:

> Clearly the two levels are connected (this being why continuity rises up into the soul). There are souls down below, sensitive, animal: and there even exists a lower level in the souls. The pleats of matter surround and envelop them. When we learn that souls cannot be furnished with windows opening onto the outside, we must first, at the very least, include souls upstairs, reasonable ones, who have ascended to the other level ("elevation"). It is the upper floor that has no windows. It is a dark room or chamber decorated only with a stretched canvas "diversified by folds," as if it were a living dermis. Placed on the opaque canvas, these folds, cords, or springs represent an innate form of knowledge, but when solicited by matter they move into action.[76]

Deleuze is here confronting the claim made by Leibniz that monads are 'windowless', meaning that since monads are absolutely simple substances, they cannot permit addition or subtraction since these would make them divisible. Monads must instead be perfect (complete) substances that lack nothing. Leibniz then goes further by claiming that this is not a deficiency in monads since they express or represent the whole world (all other monads). As Deleuze points out, to represent the whole world is necessarily to contain difference. However, this is a radical understanding of difference wherein *difference* constitutes the *consistency* of the soul or monad. In stating that monads must be distinguishable from one another, Leibniz claims that there must

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[76] Deleuze, *The Fold,* 4.

be a principle of change that drives the production of difference in each monad; this principle of change is termed "appetition".[77] However, the change produced by the appetition, which distinguishes one monad from all others, cannot be so radical that it distinguishes a monad from itself: "This diversity must involve a multitude in the unity or in the simple. For, since all natural change is produced by degrees, *something changes and something remains*."[78]

Changes may often appear sudden, but they are always preceded by a myriad of other changes. Oftentimes these preceding changes are obvious: I drank coffee and felt more awake. I know that ingesting caffeine leads to changes in my mood and energy level, though it should be noted that this change in energy level does not occur all at once with the first sip of coffee. My progressive change from tired to energized is a relatively steady one. A seemingly more sudden change might be the change in state from sleeping to awake; however, I would argue that even this change in state occurs via degrees. As is evidenced by my need for morning coffee, I am not wide-awake when I first stop being asleep. The 'sleepiness' lingers and gradually fades. However, there are other changes wherein one only recognizes the complex degrees of change in hindsight; as in the case of a historian researching the inception of a given war. While a single declaration of war or act of aggression can perhaps be pointed to, there are clearly more complex reasons for why these acts resulted. Leibniz's philosophy recognizes this complexity and inserts it into his metaphysics as a basic law: nature never makes leaps (*la nature ne fait jamais des sauts*).[79] This is why the problem of the Sorites paradox was so pressing for Leibniz's account of motion: there must be some instance wherein there is absolute indistance between one state and the other (e.g. the change from sleeping to awake) such that the 'change' in state does not occur

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[77] GP VI 608-9 (AG 214-5) [1714]
[78] GP VI 608 (AG 214) [1714]
[79] A.vi.6, 56 (RB 56) [1704]. It should be noted that Leibniz himself refers to this claim as the "Law of Continuity" and it appears throughout his writings.

by any kind of leap. I am arguing that the activity of expressing a relational predicate leads to this same kind of indistant change, and the result of that indistant change is the relational statement. However, my term for this kind of 'indistance' is intimacy, as it showcases the limitations of relations (they never unify the related substances) but also validates the result of a relational statement by claiming that minds are not making 'leaps' by concluding relations between substances.

This 'change by degrees' is precisely the system of change in force at play in Leibniz's usage of folds. Deleuze, in discussing how folds function in 'two floors' of the windowless monad claims that:

> The "duplicity" of the fold has to be reproduced from the two sides that it distinguishes, *but it relates one to the other by distinguishing them*: a severing by which each term casts the other forward, a tension by which each fold is pulled into the other.[80]

Deleuze clearly understands that Leibniz uses folds as a way of expressing how differentiation can produce congruence and consistency. The reason for this congruence lies again in the notion of force, however, this time we are discussing the force of change internal to the monad, namely, the appetition. Across the perceptual states of the monad, what urges it from one perception to the next, is the force of appetition. Deleuze recognizes that this unifying appetition, or force, is not *determinative* but is actually the wellspring of liberty;

> Inclination is the fold in the soul, inflection the way the fold is included. Whence Leibniz's formula: the soul is inclined without being necessitated. The motive is not even an internal determination, but an inclination. It is not the effect of the past, but the expression of the present. It must be observed to what degree Leibniz's inclusion is always coded in the present: I write, I travel… If inclusion is extended to infinity in the past and the future, it is because it concerns first of all the living present that in each instance presides over their division.[81]

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[80] Deleuze, 30 (my emphasis).
[81] Ibid, 70.

What Deleuze is highlighting here is that each instant of the monad is a distinct state; there is no predetermination, only an inclination. This 'inclination' *is* appetition, and it is the appetition that is the self-similar but non-identical force of the monad as it expresses itself in time, that is, as it unfolds. Therefore, Leibniz is claiming that while any given present state is always 'pregnant' with the future, the future state of any given monad is not interchangeable with previous states of that monad. A past monad that has different degrees of clear and distinct perceptions cannot be considered identical to its following temporal states. Nevertheless, the monad is reiterating itself consistently. The history and future of the monad are always self-similar, but not self-identical. What is consistent is the expression of force (appetition) but not exactly what is expressed by that force.

However, another point that must be drawn out here is that Leibniz is preserving some of his mathematical revelations in his metaphysics. As above, Bell claims that Leibniz understands the mathematical continuum to be only ideally infinite. That is, if the whole precedes the parts it can only do so in an ideal way, the constitutive parts, however, are real. As Leibniz has stated, in the ideal it is the whole that precedes the parts, but in the actual, parts precede the whole. Deleuze understands Leibniz's conception of monads to be functioning in a similar way; the lower level of the Baroque House is the ideal continuum of the representation of the world that generates the differences in clear or confused perceptions. To put it more precisely, the continuum is one of perception. The ideal whole is the totality of perception, whereas the discrete apperceptions are the parts that make up the actual identity and relations of the monad.

The Continuum of Perception

What I have been trying to show is that there is not one 'type' of continuum for Leibniz. Rather, Leibniz's understanding of nature and metaphysics describes activity as either

continuous or contiguous: processes or actions are continuous if the whole precedes the parts and

contiguous if the parts accumulate to create a whole. As Levey describes it, "Continuity is a kind

of structural indeterminacy: a continuous quantity would be something *interminatum*,

'unbounded,' lacking an assignment of interior boundaries or parts. Matter, on the other hand, *is*

something 'bounded.'"[82] I understand Leibniz to be explicit that monadic perception is

indeterminate because each monad must equally represent (perceive) all the other monads, yet

this is not *actualized* or made determinate in the monad because if this were the case, then all

monads would be determined identically.[83] In the preface to the *New Essays*, Leibniz writes,

"there are hundreds of indications leading us to conclude that at every moment there is in us an

infinity of perceptions, unaccompanied by awareness or reflection...of which we are unaware

because these impressions are either too minute and too numerous, or else too unvarying, so that

they are not sufficiently distinctive on their own."[84] He proceeds to use the analogy of the noise

of the roaring sea that is composed from the multitude of insensible waves to explain the

indeterminacy of these perceptions on their own: "To hear this noise as we do, we must hear the

parts which make up this whole, that is the noise of each wave, although each of these little

noises makes itself known only when combined confusedly with all the others, and would not be

noticed if the wave which made it were by itself."[85] Multitudes of perceptions become 'bounded'

when rendered as apperception (i.e. as conscious reflective thought). Leibniz is arguing that all

our thoughts and reflections are the result of the accumulation of these perceptions. On the next

page, Leibniz even claims that it is because of these insensible and undetermined perceptions

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[82] Levey, "Matter and Two Concepts of Continuity in Leibniz," 84.
[83] GP VI 608 (AG 214) [1714]
[84] A.vi.6, 53 (RB 53, my emphasis) [1704]
[85] Ibid, 54 (RB 54)

that the continuity of identity occurs. [86] The continuity of perceptions connects the former and present states of a substance. This all points to perceptions operating in the production of a continuous apperceptive identity in the same way that folds operate in the production of continuous motion. It should again be noted that this apperceptive identity is 'guided' by the given monad's appetition. That is, I consciously reflect on some perceptions rather than others because it is in my nature (appetition) to do so. What connects the folds is the force of motion; what connects the perceptions through apperception is the activity of the monad's appetition.

Vassil Vidinsky agrees that monadic perception perfectly fits the description of the syncategorematic infinity that characterizes a continuum. Vadinsky follows Leibniz's claims in *Monadology* to conclude that: 1. monads are subject to continuous change 2. The source of this continuity is the monad's internal principle, i.e. its appetition, and 3. "Perception involves and represents a multiplicity in the unit."[87] The 'unit' in question is the monad, and monads are eternal as well as undergoing continual change. Moreover, this change occurs by *degrees*, namely, degrees of perception and apperception. Since there is an infinity of degrees (as there is in the unbounded and infinitely complicated perceptive field of the monad, which varies intensively in terms of clarity, obscurity, distinctness, confusion, etc. in accordance with its perspectival specificity) then this is a syncategorematic infinity, in other words, there is a continuum of perception.

Richard Arthur also alludes to this perceptual continuum when discussing syncategorematic infinity. He makes special note of that fact that a syncategorematic infinity is not only always capable of further division or increase, but also that each division always produces discrete differences. He understands this production of discrete differences to be akin to

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[86] Ibid, 55 (RB 55)
[87] See GP VI 608 (AG 214) [1714] and Vidinsky, "Dynamical Interpretation of Leibniz's Continuum," 62.

Leibniz's understanding of perception: "Likewise, a monadic series of perceptions consists in successive finite perceptions, each apparently uniform, although divided within by changes of which the perceiver is unaware… it is because this division proceeds internally without limit that the series does not violate the law of continuity."[88] The 'series of perceptions' that Arthur mentions seems actually to be an apperception insofar as it is understood and reflected upon. Yet, what Arthur hits on quite nicely is that any given apperception, according to Leibniz, is always composed of an infinity of minute perceptions that are infinitely divisible. However, when discussing the infinite divisibility of apperceptions Leibniz does not typically discuss apperception in general, rather, he discusses this in terms of freedom and relations. As was shown in the example of the roar of the ocean, what is apperceived is the singular roar even though there is a vast multiplicity of waves. All apperceptions are likewise composed of a multiplicity of perceptions. This becomes important for Leibniz's discussions of freedom and relations since it is God alone who, through divine intellect, can see all the perceptions that compose every apperception for every substance. God's knowledge of how every apperception arises for each individual substance raises the question of whether we are predetermined through God's knowledge.

In *Discourse on Metaphysics*, Leibniz attempts to explain how it is that God knows how apperceptions and events will develop without those events then becoming necessary and revoking the freedom of substances. For example, God sees Alexander the Great's "individual notion or haecceity" and "sees in it at the same time the basis and reason for all the predicates which can be said truly of him."[89] This individual notion is what Leibniz will go on to later call the monad's 'appetition' and its unique perceptions. Here, Leibniz is saying that it is not because

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[88] Arthur, "Leibniz's Syncategorematic Actual Infinite," 171.
[89] GP IV 433 (AG 41) [1686]

God has willed Alexander to be king that Alexander will be king. Rather, God fully understands the appetition of Alexander and from this can deduce how Alexander's life will unfold. This future state is unclear to a young Alexander himself because he is not privy to clear knowledge of the infinite perceptions that will inform his apperceptions. God, however, has absolute access to these perceptions: "Thus when we consider carefully the connection of things, we can say that from all time in Alexander's soul there are vestiges of everything that has happened to him and marks of everything that will happen to him and even traces of everything that happens in the universe, even though God alone could recognize them all."[90] Leibniz mirrors this statement later on in *Monadology* by claiming that "a soul can read in itself only what is distinctly represented there; it cannot unfold all it folds at once, because they go to infinity."[91] What is distinctly represented are apperceptions, whereas perceptions themselves are not all clearly known. As in the case of the roaring ocean example: the perception of the single wave is minute and confused but the apperception of the aggregate roar of the ocean is comparatively much clearer. Alexander's relation, "king of Macedonia," inheres in the very notion of Alexander. Yet, it is indeterminate for Alexander himself so long as he cannot clearly apperceive it. For God, Alexander's haecceity is completely clear and the truth that Alexander will one day rule is evident. God reads all the 'parts', or degrees of change, in Alexander's soul that result in the relational whole 'king of Macedonia'. My argument is that relations must be understood in the same way as folds: the relational 'whole', or the relational statement which unites multiple substances under a single predicate, may be ideal but it is the result of a series of distinct, yet congruent, expressions of that relational whole. In this way, relations, like motion, are both ideal and actual, and the best way of describing how this is expressed is through folds.

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[90] Ibid.
[91] GP VI 617 (AG 221) [1714]

According to Leibniz, every expression of a relation is informed by the relations that particular substance has with the rest of the universe. Given this, any relational statement (e.g. 'Paris and Helen are lovers') would have to contain an infinity of expressions and understandings of that relational statement (and each expression likewise contains an infinity of further relations). There are always more folds within any fold. However, while Leibniz utilizes the language of folds to allow for substantial consistency across motion, he still admits the each of these folds is discrete and contiguous with respect to all the others. It is this characteristic of contiguity of force that allows for an ideal unity. Likewise, I understand each representation of a relation to express that relation distinctly but in a way that allows for ideal unity. As I will explore in the next chapter, I think that Leibniz provides the best evidence for this understanding of relations when he is using logical reduplicatives. This reduplication is the process of reiterating a relation so that it pertains distinctly to each related term, e.g. 'Paris loves Helen' becomes 'Paris is a lover, insofar as Helen is beloved by him'. By my understanding, the initial relational statement ('Paris loves Helen') is essentially an enfolding of two lesser folds into a greater fold. Leibniz's restatement of this relation through reduplication is an unfolding of this greater fold into its lesser folds. This unfolding is not exhaustive since the predicates and apperceptions that result in Paris being a 'lover' can also be discretely understood by the intellect (and of course these too can be unfolded into their constituent parts). In the next chapter, this reduplicative logic will be explored in detail.

Conclusion

My goal in this chapter has been to develop a clearer understanding of Leibnizian folds. I argued that his use of folds is predicated on both taking infinity in a syncategorematic sense and on understanding ideal wholes to precede their parts while actual wholes follow from parts. To

these ends, I have shown that Leibnizian folds describe the consistency formed in and through force. I also demonstrated that folds are also particularly useful insofar as they make explicit the syncategorematic infinity at work in Leibniz's philosophy. There are always more folds within each fold. Leibniz understands infinity as infinitely productive; there is always more. I have also emphasized that Leibniz insists that the syncategorematic infinity of folds is a continuum and not a 'contiguum'; even though folds are contiguous with one another, force provides a congruence and consistency for this multiplicity.

I began by suggesting that a more developed understanding of folds was needed in order to produce a clear understanding of Leibniz's system of relations. Up to this point, I have only shown that the model of perceptions and apperceptions that form relations operates in a folded manner. I have yet to show how relations themselves express the same process as folds of motion, which would mean relations are a kind of fold. In the following chapter, I explain how Leibniz's usage of logical reduplicatives along with the technical sense of 'congruence' and 'concurrence' in his system of relations showcase the process of folding at play in relations. As I will show, the shift from motion to relations changes how certain terminology functions for Leibniz. Though it may perhaps seem odd to argue that relations are contiguous given that contiguity is a spatial term, looking forward, I propose that a better way of understanding the discrete but unified system of relations at play in Leibniz is to think of these relations as intimate rather than contiguous. Understanding relations as intimate preserves the distinctions of each substance's expression of the relation, but also provides a means of unifying these distinctions.

Chapter II: Relations and Logical Reduplicatives

To understand how the concepts of 'indistance' and 'contiguity' are operating in Leibniz's theory of relations, it is necessary to understand the role of 'logical reduplicatives' in expressing relations. Logical reduplicatives function by carefully rephrasing a relational statement in such a way that it is understood as uniquely expressed by each related subject. A reduplicative works by way of taking a logical conclusion about a relation and parses this conclusion out into unilateral and nonreciprocal statements about the predicates of each subject.

These statements, when symmetrical (i.e. mirrored), affirm the conclusion of the relational

statement but also omit the relation itself from the related subjects. One of Leibniz's most

famous examples of this is his restatement of the relation 'Paris loves Helen': "Paris is a lover,

and by that same fact [*eo ipso*] Helen is a loved one."[1] Leibniz's use of terms like *eo ipso* and

quatenus are indicative of his adoption of reduplication. [2] These terms relay that it is necessary to

have both condition A (a Paris who is a lover of Helen) and condition B (a Helen who is beloved

by Paris) before a conclusion can be made because the conclusion itself (i.e. Paris loves Helen) is

not a part of either condition or subject. The conclusion only follows because it is founded by the

two coincident conditions. However, these two conditions are understood as completely separate,

even though these conditions *produce* a relation which goes beyond either condition itself. This

is because all substances are *only* active and never passive for Leibniz.[3]

Therefore, I am arguing that relations follow the same model of connectivity as folds in

motion, wherein the individual fold is never lost, even though it conforms with the activity of a

greater fold. The relational expressions of any given subject are such that they absolutely

conform to the relational expressions of the subject(s) they are related to. This conformity is

founded by the *concurrence* of the contiguous, or indistant, relational predicates of each

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[1] C 287 [Date not given, but likely around 1680]

[2] To the best of my knowledge Leibniz does not explicitly advocate that others should use reduplicatives. However, he does acknowledge when a statement is reduplicative (see: C 262 and 403). Since he is clearly aware of what the logical move of reduplication is, his decision to use this process should be understood as intentional.

[3] There is a careful distinction in Leibniz about what kinds of substances are ever acted upon and how: In *Principles of Nature and Grace*, Leibniz claims that "each body acts on every other body… and is itself affected by the reaction" (GP VI 598; AG 207) [1714]. Yet, in *Monadology* Leibniz writes that there is "no way of explaining of explaining how a monad can be altered or changed internally by some other creature, since one cannot transpose anything in it, nor can one conceive of any internal motion that can be excited, directed, augmented, or diminished within it, as can be done in composites, where there can be change among the parts" (GP VI 607; AG 213-4, 1714). The distinction lies in the fact that a body is a composite substance and a monad is a simple substance. The relational predicates being discussed are not properties of a composite body, they are internal properties of the monad. Given this, relational predicates cannot be passive recipients of change from any outside force. All change must be internally generated. c.f. C 520 (AG 33) [around 1686]

substance. [4] 'Concurrence' is a technical term for Leibniz which describes relations that assert a connection such that each related subject is understood as a 'parts in a whole'. I intend to explore this model of concurrence and show how it asserts that relations are produced through the activity of the related monads. However, this examination will occur after discussing logical reduplicatives as well as other aspects of Leibniz's logic. Overall, my goal is to show that Leibniz's logic of relations institutes the same series of operations that is presented in his account of folds in motion. With this asserted, I think it follows that relations should be understood as a kind of fold. The value of this understanding is that it provides a model for understanding relations as connective but distinct in a way that preserves individuality while still accounting for intimacy.

I am arguing that understanding Leibniz's use of logical reduplicatives plays into his claims that every predicate that can be said of a subject has its source in the subject itself. As Leibniz puts it; "*there are no purely extrinsic denominations*, denominations which have absolutely no foundation in the very thing denominated. For it is necessary that the notion of the subject denominated contain the notion of the predicate. And consequently, whatever denomination of a thing is changed, there must be a variation in the thing itself."[5] If this is the case, then it would mean that 'Paris loves Helen', operates on the same transitive model as indistance in motion. The indistance model works so well because 'indistance' eliminates any third 'thing' meaning that relations are not something that subjects participate in but are more like descriptions of this indistance. The ramifications of this claim are that it would mean Leibniz had a much more complex theory of relations than previously thought. Furthermore, I consider

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[4] It should be noted that 'relational predicate' is not a term used by Leibniz but is instead used by Leibniz scholars to distinguish the predicates that are in substances that one can understand as relational from relational statements which infer a shared predicate in multiple substances.

[5] A.vi.4, 1645-6 (AG 32) [around 1686], c.f. A.vi.6, 228 (RB 228) [1704]

Leibniz's theory of relations to have an impact on how we understand relations in our everyday lives. I am arguing that relational statements, even if they are ideal, are nonetheless as real as the relational predicates that produce them. If Leibniz's understanding of relations as ideal means they are fictions of the mind (either having no basis in substances or only nominally applicable to substances), then Leibniz's own claims about the interconnection of all substances seems fallacious.[6] Additionally, Leibniz holds that many ideal things, such as numbers, are still 'real'. I am not arguing against the fact that relational statements are the product of a mental conclusion, but I am arguing that the production of this conclusion is founded upon an activity in monads that, like motion, is connective without imposing any internal change and real. Folds in motion do not alter the preceding or succeeding folds but are *understood* as a single motion. I argue that the reason why these folds are understood as a single motion is because they concurrently establish the 'complete' motion (e.g. from point A to B).

To explain why I hold this view, I am examining Leibniz's decision to use logical reduplicatives to express how he understands relations to function. A logical reduplicative is an approach which divides a relation such as 'Paris and Helen love each other' into its concurrent parts, i.e. what must be the case for the logical conclusion to follow. So, 'Paris and Helen love each other' becomes 'Paris is a lover insofar as Helen is beloved' and likewise 'Helen is a lover insofar as Paris is beloved'. If these logical statements are accurate, then the conclusion 'Paris and Helen are lovers' will follow, but it only follows because of the concurrent active expression of each substance's respective relational predicates.

Additionally, as an account of the world, Leibniz's philosophy is potentially quite fruitful if it provides a model for understanding how relations can be real even though they depend upon

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[6] GP VII 321 (L 365) [Unknown date, but probably between 1680-90]

distinct relational predicates that express those relations. This potential benefit is lost if Leibniz does in fact think that relations are purely fictitious, leaving us without the possibility for intimacy and instead stranded in solipsism. If relations are concurrent but not unified, this establishes a symmetry of activity that I understand as intimacy and which I prefer to notions of unity that dissolve the individuality of the related substances.

Before discussing that, it will be helpful to broadly summarize the scholarly debate on Leibniz's theory of relations. The disagreement is primarily concerned with whether Leibniz takes such extensive care to make these relations conditional and private because they are merely ideal and have no validity outside of individual predicates *or* because Leibniz is trying to assert some way in which relations do have a (more than ideal) reality but only when they are produced by those predicates. While I am quite sympathetic with the predicational understanding of relations, I think the reasons why these relations result from such predicates is more complex and imbues relations with more reality than previously thought. Furthermore, I understand Leibniz's theory of relations to provide a model of understanding how relations are *connective and personal* at the same time while still preserving individuality. I view Leibniz as asserting a monadological intimacy that explains how, and why, substances express different degrees of relations in order to be distinct from one another. While Leibniz himself does not discuss relations in terms of degrees (or intimacy), he does discuss our representations of the world as differing by degrees of clarity and distinctness. I consider the differences in clarity and distinctness to affect a substance's particular representation of the world, and by extension, affect the relational predicates of that substance. Such a model preserves the identity of subjects but also allows for relations to have meaning beyond distinct predicates.

Leibniz's use of logical reduplicatives has hardly been ignored in the literature, and it has informed the development of many different readings of Leibniz's theory of relations. To begin then, I will examine Leibniz's usage of logical reduplicatives and some of the historical context that led to Leibniz adopting this method. Following this, I will show how different scholars understand the relation 'Paris loves Helen' to play out. Using this example as a baseline will help me then establish exactly how my own understanding of Leibniz's theory deviates from the work of others. From here, my task is to show why my understanding of Leibniz's theory is necessary, not just for providing clarity on Leibniz's work, but for an understanding of relations more broadly construed.

Introduction

In everyday conversation, it is easy to think of relations as 'connections' between two subjects or objects. For example, a friendship or love might, on the surface, be understood as a quality that is held in common between multiple subjects. However, for Leibniz, two substances cannot have a completely identical set of qualities, despite all substances representing the whole universe. While sharing a single relation such as "lovers" seemingly does not violate this principle of identity, Leibniz is explicit that monads do not share relations. In a letter to Des Bosses, Leibniz writes: "For orders, or relations which join two monads, are not in one monad or the other, but equally well in both at the same time, that is, really in neither, but in the mind alone."[7] If there are no identical representations, then all relations between subjects are actually two very similar, but not identical, expressions of relations. Therefore, a substance's expression of a relation becomes a predicate (such as 'lover of Helen') in the same way that 'pale' is a predicate. If Leibniz is claiming that relational predicates are never shared across multiple

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[7] GP II 517 (AG 203) [1714] c.f. GP VII 401 (AG 339) [1715-16]

monads, then is it also the case that other predicates also work this way? How can one account for multiple pale people or many red flowers? Surely these are not "in the mind alone"? The solution is that while many roses are red, they are not all expressing this red at the same time, in the same place, or to the same degree.[8] As will be shown later, Leibniz instead thinks of many roses being red as an 'agreement' in the expressions of red across many roses (and other red bodies), but the status of '*being* red' is unique for each rose. This will be an important idea to develop and grasp, though, as it applies to every monad's representation of the world as well.

Nevertheless, accepting Leibniz's metaphysics makes the whole idea of relations as an operation that links two completely isolated unities (monads) seem absurd. Leibniz is consistent in his claim that nothing can be added to monads and that they are thus "windowless" and do not interact with one another. For Leibniz, though, this isolation does not result in any deficiency, given that every monad represents the entire universe. Thus, nothing could ever be added to any monad without being redundant. Furthermore, Leibniz often claims that relations are products of the mind and even goes so far as to call them 'merely' or 'purely' mental things:

> Thus I think the following about relations: paternity in David is one thing, filiation in Solomon another, but the relation common to both is a merely mental thing [*rem mere mentalum*], whose foundation is the modifications of the individuals.[9]

Therefore, Leibniz posits that since predicates cannot be in two monads at once, relations must not be predicates. Rather, relations are ideal things fabricated by minds that are understood *as if* shared equally well between two monads. There is no conflict because the ideal status of relations denies the reality of any given relation. This lack of reality means that any relation is

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[8] It should be noted that Kant argued in his Amphiboly of Reflection that Leibniz could not account for differences of space and time, and that only qualitative and quantitative differences were in substances. As far as I can tell, there are two reasons why Kant would have argued this: it may have been Kant simply did not have access to enough of Leibniz's writings and was not exposed to texts where Leibniz affirms spatial differences; or since Leibniz often claimed that space and motion were only relations (i.e. qualities or predicates), Kant may have been dissatisfied with this claim and viewed Leibniz as dismissing the universal truth of space and time.
[9] GP II 486 (DB 327) [1716]

not actually *in* the world at all and thus maintains the complete distinguishability of any two substances. My concern is that this reduces relations to something like opinions. In that case, there is no difference between 'Paris and Helen are lovers' and 'All dogs are good'. I can think all dogs are good, but this does not make all dogs good. Yet, it seems that Leibniz must be able to give an account of how one can know whether a relational claim is correct or not.

As previously noted, Leibniz is also quite explicit in claiming that anything denominated of a subject must have its root in that subject. That is, nothing predicated of a subject has its source anywhere but in the subject itself. I consider this claim to be evidence that relational claims can still be correct even if they do not inhere in the subject itself. This confuses things quite a bit, though, as we now have two seemingly competing proposals from Leibniz: relations are in the mind and do not 'add' anything to the world or the monad, yet everything denominated of any substance has its root in that substance.

I understand logical reduplicatives as playing the primary role in solving this mystery of how Leibniz can maintain both that relations are products of minds and removed from the reality of substances, while also claiming that no denominations are completely extrinsic to substances. Logical reduplicatives function by rephrasing relational statements in terms of unilateral and non-reciprocal, but still symmetrical, predicates. The reduplicative nature of Leibniz's logical formulations expressing relations is crucial because it allows him to assert relations that do not infringe upon the closed nature of individual substances. That is, reduplicatives explain the foundation for relational statements, such as 'Paris loves Helen', without creating any shared content between the two related substances while, nonetheless, admitting that a relation is produced.

Logical Reduplicatives

The operation of using a logical reduplicative is when a two-term predicate statement (e.g. X is stronger than Y) is rephrased into a more complex and bifurcated statement (e.g. X is strong, and as such is superior insofar as Y qua strong is inferior). These restatements feel convoluted and overly tentative due to their use of logical operators like *quatenus* (insofar), *eo ipso* (by that same fact/in the same way), and *qua talis* (as such). The function of these operators is to assert the contingency of relational statements. By asserting this contingency, a relational predicate can only be true insofar as another substance expresses a correlated predicate. While these predicates can indeed be understood as correlated, there is no causal relationship between them. That is why I have referred to these correlated predicates as unilateral and non-reciprocal. There is no give-and-take that is characteristic of a reciprocal relation. Instead, there is only symmetrical activities that mutually provide the foundation for a relation. This view on relations means that my love for my family is not an activity that I impose upon my family but is something that my family co-constitutes with me by being beloved by me. Both my predicated love for my family and my family's predicated status as 'beloved' are equally active in the foundation of my relation to my family. Therefore, while Leibniz's system of relation affirms the individual agency of all substances, it also affirms the real connection among them that is always expressed differently by each substance.

Allan Bäck's extensive work on logical reduplicatives particularly addresses the way that Leibniz utilizes them in his theory of relations: "[Leibniz's] reduction of relations is not merely syntactic: it also deals with the semantic features (supposition) of relational statements. His reduplicative analysis of relational statements suggests that the ground of truth for a reduplicative proposition resides *partly* in human mental operations and *partly* in things

(ultimately in monads)".[10] Therefore, Bäck understands Leibniz's decision to use logical

reduplicatives as informative regarding Leibniz's understanding of relations as a whole. This is

interesting because Bäck's analysis of reduplicatives spans from Aristotle's beginning use of

'*qua*' propositions up to contemporary analysis, with few gaps. Bäck realizes that Leibniz is one

of a handful of thinkers who tried to utilize reduplicatives in a manner such that various other

philosophical arguments could be made or furthered.[11] Bäck's familiarity with the history of

reduplicatives provides an understanding of the soundness of Leibniz's utilization of

reduplicatives and allows Bäck to realize that Leibniz is doing something novel in the service of

his other philosophical endeavors.

Another example of logical reduplication in relations utilizes locations and objects rather

than human beings: 'the country house is a thousand paces far-away from the town' becomes

'this country house is distant insofar [*quatenus*] as the town is distant and the distance is a

thousand paces'.[12] This approach is quite contrived and seems unnecessary to our understanding

of any given relation. However, I understand Leibniz as using reduplicatives to provide a

metaphysically rigorous account of the process of understanding a relation. This approach asserts

the qualities of the town and the country house that *result* in the relation between the country

house and the town given their respective qualities. To restate this in Bäck's terms: the relation is

in part in the respective qualities of the country house and the town, but what results from these

respective qualities is in the mind. If the house is a thousand paces away from the location of the

town and the town is a thousand paces away from the location of the house, then it follows that

they are a thousand paces away from each other. This formulation does not directly assert a

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[10] Bäck, *On Reduplication*, 460 (my emphasis).
[11] Ibid, 435.
[12] This example is taken from Massimo Mugnai's explanation of logical reduplicatives in *Leibniz' Theory of Relations*, 65.

relation that unites or links the house to the town but rather one which is derived from the facts about what is under consideration. As stated at the start of this chapter: reformulating a relational statement through reduplicatives maintains the validity of concluding a relation without making the relation itself a part of either subject.

This approach from Leibniz is even maintained when it comes to recognizing similarities in subjects. Understanding A and B as both red is reasonable, but not metaphysically rigorous. Benson Mates keys into this aspect of Leibniz's theory of relations when he discusses Leibniz's bizarre approach to discussing Peter and Paul as both being apostles. Leibniz expressed an aversion to using numbers when discussing similarities such as "Peter and Paul are two apostles," because numbers do not 'exist' in the world. Therefore, Leibniz rephrases this statement to express it in a way that can still be upheld under metaphysical scrutiny: "Peter is an apostle and Paul is an apostle and it is not the case that Peter is Paul and Paul is Peter."[13] The result that is concluded by the mind (Paul and Peter are two apostles) is simply acknowledging the unilateral and nonreciprocal, yet still symmetrical, qualities of each substance. Why does Leibniz feel the need to use such contrived mental acrobatics? Mates recognizes that, while Leibniz diverges from the Aristotelian tradition of substance by claiming that there is a "universal interconnection of all things," Leibniz nevertheless still upholds certain principles that are derived from Aristotle's *Categories*.[14] One such principle is that no accident can be in two substances simultaneously, a principle that Mates asserts Leibniz held to be self-evident.[15] I consider this idea of symmetrical but unilateral and nonreciprocal expressions to be part of how Leibniz is able to get away, in his mind, with claiming that all substances are interconnected and

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[13] C 239 (translation taken from Benson Mates, *The Philosophy of Leibniz*, 175) [around 1679-86?].
[14] Mates, 221.
[15] Ibid.

that no accident adheres to multiple substances. There must be symmetry in how the universe is expressed by all substances, but this symmetry cannot be reduced to identicality. Paul and Peter are symmetrically apostles, but they are not identically apostles. Likewise, two red apples are not identically apples, nor identically red. Why is such a convoluted system worth considering in terms of intimacy? Because while the system requires a complicated approach, this approach preserves the individuality of all substances at the *substantial* level. That is, it is not just a matter of respecting the limits of a relation, it is about affirming that substances cannot be otherwise than individual.

Leibniz uses this same approach when considering relations of love. If I say that Paris is a lover of Helen, the relation can be described in the following terms: "Paris is a lover, and *eo ipso* [by that same fact] Helen is a loved one."[16] One could possibly phrase this differently using *quatenus* as well; Helen and Paris are lovers *quatenus* (insofar as) Paris is a lover of Helen and Helen is a lover of Paris. In both restatements, the logical operator (*eo ipso* and *quatenus*) asserts the boundary of each substance's relational predicate.

There is no unity, only intimacy. Mates draws attention to the fact that Leibniz borrows much of his views on relations from Jungius and it is Jungius who draws attention to the 'terminus' of a relation:

> The *terminus* of a relation is that thing to which the relation relates, or that in which the relation itself is terminated [*sive id ad quod relation ipsa terminator*], as, for example, the terminus of Masterhood which is in [*est in*] Simo is [*terminus est*] Davus, and conversely the terminus of the Slavery which is in Davus is Simo... A pair of relata are *correlates* if they commute as subject and terminus, that is, if the subject of one is the terminus of the other and vice versa; thus Father and Child are correlates since, for example, David, the subject of one relation, which the philosophers call Paternity, is the terminus of the other relation, which they call Filiation and which is in Solomon as a subject; and in turn Solomon is the terminus of Paternity which is in David.[17]

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[16] C 287 [Date not given, but likely around 1680]

[17] Jungius, *Logica Hamburgensis*, 41. (Translation taken from Mates, *The Philosophy of Leibniz,* p.212)

I take this passage to show that Jungius is claiming that there are not connections between substances, but expressions which find their end (terminus) at the site of other substances. Note that Jungius only uses the language of 'in' to discuss the predicate in the explicitly predicated substance (Masterhood is *in* Simo and Filiation is *in* Solomon) yet the terminus is *not* 'in' the other substance but rather *is* the other substance. This allows for what Jungius calls a correlation and what I consider to be more technically understood as unilateral and nonreciprocal symmetry. Symmetrical lines mirror one another but do not interact (in Euclidean space). Just as monads are mirrors of the universe but have no causal relationships with one another. I understand Leibniz's usage of logical reduplicatives to be explicitly announcing the terminus of each 'related' substance. Furthermore, this terminus in relations showcases the same operation that the extremus of a fold serves in motion. That is, the terminus institutes indistance and is the product of active forces. This activity is what will be discussed as I evaluate Leibniz's usage of 'concurrence' in the last section of this chapter and what I believe represents a unique kind of congruence. Stated briefly, a concurrent relation is one which is equally *produced* by multiple substances. A concurrent relationship is a non-causal, but still fundamental, connection between substances. I am arguing that this concurrence is what is at play in logical reduplicatives as the reduplication showcases the indistance of relational predicates and how they concur in founding a relational statement. The reduplication makes explicit how the terminus of each related subject is symmetrical, making the 'result' of a relation reasonable.

While Leibniz does not use the language of 'terminus' to discuss relations, he does it use alongside 'extremus' in his logical works to discuss 'terms' and 'extremes (of terms)'. He also uses 'terminus' somewhat interchangeably as a 'boundary' (or extremum) in texts like *Pacidius*. In *A Mathematics of Reason* Leibniz provides an examination of conclusions derived from

logical syllogisms. In this analysis, Leibniz claims that these conclusions are derived from two distinct premises (major and minor) and they can be either universal (All A are B) or specific (Some A is B).[18] There is also a middle term which is distinct from the major and minor premises (and is also not the conclusion), and is either universal or particular in each of these; "if the middle term in each premiss is particular, it is not certain that the contents of the middle term which are used in one premiss are the same as the contents term which are in the other premiss, and therefore nothing can be inferred from this about the identity and difference of the extremes [*indentitate et diversitate extremorum*]."[19] I take this to mean that a particular premiss is always an extreme, it is always *limited* or *bounded*, and that as such, any syllogism that invokes a particular major premiss and a particular minor premiss must yield a particular conclusion, e.g. Paris is a lover of Helen insofar as Helen is beloved by Paris. From this, the particular conclusion that Paris is a lover of Helen is a verified statement. What is interesting to me about Leibniz's reformulation of this statement is that while it seems redundant (the conclusion and major premiss are identical), for Leibniz, the major premiss can only be concluded if the minor premiss is also true. By my understanding, this contradicts any reading of Leibniz's theory of relations as instituting purely reflexive relations. A reflexive relation would be one where Paris is not a lover of the substance Helen, but only of his representation of Helen that is internal to his own monad. Leibniz is showing via reduplicatives that a relational predicate is valid only insofar as its correlate is valid. Moreover, as I understand it, the term 'love' or 'loving' is the middle term in this case, and there is something of it in Paris and something of it in Helen, but it is not in them identically. Therefore, one cannot conclude from the above example that Helen loves Paris too. One can only be sure of the particular truth that Paris is a lover *if* it is the case that he is a lover

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[18] C 193-196 (LP 95-7). [no date given but I would guess in the 1680s]
[19] C 195 (LP 97).

of someone and that someone is beloved by him. The reduplication is Leibniz's attempt at

making this unique relation to the middle term (be it 'love', 'filiality', 'distance', or any other

such thing) explicit.

Furthermore, in another logical text, Leibniz discusses subalternant and disparate terms in

logic. While these are standard terms in logic, I have still included Leibniz's definitions for

them:

> I call those terms 'subalternants' [*subalternantia*] of which one is in the other, such as A and B, whether A is in B or B is in A.[20]

and

> I call those terms 'disparate' [*disparata*] of which neither is in the other.

These definitions are then further discussed in an explanatory note, where Leibniz discusses 'co-

integrant' parts, that is, parts which complete a whole.[21] These co-integrants, have no common

parts with one another. Despite not sharing any common parts with one another, Leibniz writes

that "If any two parts are so related that a third thing can be found which has a part common to

the one and a part common to the other, *that which is composed of them is a continuum*."[22] Given

Leibniz's discussion of middle terms, it seems that this is the 'third thing' which has a part in

common with each. This third thing, or concept, is what each other term has a specific relation

to, but this specific relation is *symmetrical* in the two terms. Additionally, since Leibniz is here

admitting that the relation among these parts is one that constitutes a continuum, I am therefore

arguing that relational predicates are the folds in this continuum. That is, relational predicates are

the major and minor terms. What is expressed by these relational predicates (i.e. love, filiality,

etc) is the third term, or relational terminus (extremum), which is indistant to each of the terms in

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[20] GP VII 237 (LP 132). [After 1690]
[21] ibid, 245 (LP 141).
[22] Ibid, (LP 142), my emphasis.

a different way. This whole arrangement then produces a relational statement (just as terms

produce a conclusion in a syllogism) which is a continuum, which is also to say, ideal. This ideal

continuum is nevertheless composed of actual co-integrant parts, that is, folds or disparate terms.

Leibniz goes on to say:

> Further, I call 'subalternants' those of which one is in the other, as a species in a genus, or the straight line RS in the straight line RX. I call them 'disparate' when the case is different; such as the straight lines RS and YX, two species of the same genus, a perfect and an imperfect metal, and also the members of the different divisions of the same whole, which have something in common.[23]

As I understand it, Leibniz is claiming that parts incorporated into a greater whole are

subalternants, thus, a state in America is a subalternant term. However, these subalternant terms,

when considered in relation to each other, are disparate; e.g. Pennsylvania and Maryland are

disparate terms. I consider these terms to be disparate insofar as they are unilateral and

nonreciprocal. A fold is a subalternant term in a given motion, but all the folds in a motion are

disparate terms. The tricky thing about folds is that each fold is not only a subalternant term in a

given motion, but also a subalternant term in a greater fold (because folds are always infinitely

enfolded). Leibniz's paradigm example of two different lines RS and YX as disparate terms

implies that disparate terms cannot contain one another, i.e. the species 'Dog' cannot contain the

species 'Cat'. However, it is the case that within the species of cat, there are breeds of cat that are

subalternants. A fold is a more diverse concept for Leibniz in that it is differentiated from other

folds by the expressed activity. Folds therefore constitute an infinitely more complex hierarchy

of inclusion and distinction. That is, whereas a category like 'gemstones' has a limited number of

subalternants, the category of folds has an infinite number of subalternants (ranging from greater

to lesser) which themselves also have an infinite number of subalternants. Nonetheless, all these

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[23] Ibid.

degrees of folds are disparate. What still connects these disparate folds is their indistance to one another which, according to Leibniz, form a continuum. Likewise, I understand Leibniz's approach to relations to be that relational predicates are subalternant terms (they are *in* specific substances), but they are disparate to one another: i.e. Paris' relational predicate is disparate from Helen's. Of course, given Leibniz's claim that all substances are related *in some way* means that there are always more subalternant terms that comprise the greater terms under consideration. That is, within Paris' predicate 'lover of Helen' is nested other predicates that led to him being a lover of Helen.[24] All of these other predicates are enfolded in the predicate 'lover of Helen'. The activity or expression of the predicate (in this case, 'love') is the middle term which has a part in common with Paris, and a different part in common with Helen. I am arguing that Leibniz used reduplicatives to make this approach to relations explicit.

What remains to be analyzed is this activity that establishes indistance between these disparate relational predicates. I will argue that activity is what institutes the concurrence of relational predicates and it is this concurrence of activity which imbues relations with reality. To this end, I believe Leibniz's metaphysics demands the usage of logical reduplicatives. Logical reduplicatives make explicit how each term is functioning in the operation of concluding a relational statement and why such conclusions are valid. However, before continuing with my own understanding of the relations between monads, I think it is useful to examine the primary readings of Leibniz's theory of relations.

Critical Dialogue: Other Interpretations of Leibniz's System of Relations

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[24] This endless chain of relations in a given substance will be discussed in greater detail in the 'Relations as Agreements' section which covers Leibniz's analysis of how the predicate 'king' inheres in Alexander.

While there is still much contemporary discussion regarding Leibniz's understanding of relations, much, if not all of it is written in response to key readings developed by Bertrand Russell, Nicholas Rescher, Benson Mates, Massimo Mugnai, Hideo Ishiguro, and Jaakko Hintikka. I do consider some individuals to have added crucial additions to these mainstream interpretations but in the following section I will mainly be trying to summarize the long-standing methods of interpretation. Particularly, I will be explaining how each scholar understands the relation 'Paris loves Helen' to play out in Leibniz's theory of relations.

Russell's position claims that all relations are only predicates.[25] Russell goes further, though, by claiming that the only way for Leibniz to salvage the reality of relations is to make God the guarantor of relations. However, Russell argues that this ultimately makes a fool of Leibniz's God; "as applied to relations, the view has, in Leibniz's case, a special absurdity, namely, that the relational propositions, which God is supposed to know, must be strictly meaningless."[26] If God is the guarantor of relations then God is the guarantor of 'meaningless' content.[27] Yet, this absurd conclusion is quite obvious and it would be odd for this absurdity to have escaped not only Leibniz but also his interlocutors. While such oversight is far from impossible, it is also quite possible that relations are not as meaningless as Russell believes. For Russell, then, the relation 'Paris loves Helen' amounts to being 'veritable' fabrication of the mind. However, Russell argues that the source of this veritability is only found in God since it cannot be represented *as a relation* (i.e. as a shared relational predicate) by related subjects. Thus, relations are only real insofar as one accepts Leibniz making God the guarantor of relations. Russell, though, does not accept this claim and argues that accepting it results in

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[25] Russell, 12-13.
[26] Ibid., p.14
[27] Ibid., p.15

making God the guarantor of something that does not exist outside of God's own knowledge of it. While Russell's argument here is more concerned with poking holes in Leibniz's theory (as Russell understood it) then with discussing relations per se, it becomes clear that Russell understands Leibnizian relations (i.e. relational statements or shared relational predicates) to be mere fabrications of the mind. It should be noted that I consider a mere fabrication of the mind to infer a lack of reality that a 'merely mental thing' does not necessitate. Numbers are merely mental things for Leibniz, but he does not consider them to be fabrications.

Benson Mates builds upon Russell's critique of Leibniz to provide a more developed analysis of relations, while still accepting relational statements as products of minds.[28] Mates follows Russell's accurate reading that a relation cannot be equally expressed by multiple subjects but wants to understand the logistics of this operation. That is, understanding Leibniz's claim that all things are interconnected, and that there are no extrinsic denominations in substances, Mates concludes that relational predicates can be *reduced* to unique but corresponding relational predicates in another subject (a la logical reduplicatives). To some extent, this makes Leibnizian relations like puzzle pieces, each piece is in a way interconnected with larger 'picture' being constructed, but their relation to one another has nothing to do with any activity of each piece and is instead only a matter of their 'fitness' with one another. There are no relations, only corresponding predicates that fit together by design rather than intention. This allows Mates to claim that the relation 'Paris is lover of Helen' is reducible to "the forms 'Paris is *X*' and 'Helen is *X*,' with simple attributes (or 'intrinsic accidental denominations') *X*, and that depict those modifications of singulars that are the ground of its truth."[29] Mates even

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[28] As opposed to products of the activity of substances that are expressing their relational predicates, as I am arguing.
[29] Mates, 216.

analyzes Leibniz's restatement of this relation via reduplicatives ('Paris is a lover, and *eo ipso* Helen is a loved one'), writing that this restatement of the relation "seems to me to point the way to such a reduction. It tell us that those '*facts*' or individuals-cum-accidents that make 'Paris is a lover' true also make 'Helen is a loved one' true...but the predicates would be from the category of Quality and, above all, not 'extrinsic denominations' like 'lover of Helen' or 'beloved of Paris'."[30] Therefore, part of Mates' argument is that if relations are the product of internal qualities and void of extrinsic denominations, then these 'relations' are simply nominal. The result is that all that is 'real', insofar as it exists as a quality in the related subjects, are corresponding or 'fitting' predicates.

Similarly, Nicholas Rescher claims that, for Leibniz, all relations are ultimately reducible to judgments regarding predicates in such a way that affirms the compossibility of worlds. This could be expressed as something like Subject A has Quality 1 and Quality 1 is such that X can be attributed to it, likewise, Subject B has Quality 2 and Quality 2 is such that X can also be said of it as well.[31] As Rescher states, "In these combinations, no more than logical or quasi-logical connectives are invoked."[32] That is, whereas one might normally write 'Paris and Helen are lovers' as Lph (Being lovers is a quality of Paris and Helen), this will not work for Leibniz as it ascribes the same quality to each subject. Rescher holds that Leibniz's metaphysics allows only for substances and their qualities to have 'real existence', and that therefore any product of the mind's understanding of these substances in relation to one another is a purely mental thing.[33] Rescher is therefore divorcing the ideal from the real since what is ideal does not exist as a

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[30] Ibid (my emphasis). Note: 'Helen is a loved one' [*et eo ipso Helena amatur*] and 'Helen is beloved' [*et eo ipso Helena est amata*] are two different formulations which Leibniz uses in the same paragraph and seemingly views as interchangeable (C 287).
[31] Rescher, *Leibniz*, 71-3.
[32] Ibid, 75.
[33] Ibid, 71.

predicate of any substance. Therefore, whatever 'results' from an understanding of qualities would still be divorced from those qualities (as they are expressed by their respective substances) and thus lack reality. Therefore, Rescher affirms that such relations are only logical conclusions. However, Rescher still considers this to be establishing a connection of sorts among substances:

> To be sure, this is not a matter of a logical reduction of a relation into something nonrelational; we are still left with something relational. Rather, it represents something relational within the combinations among purely predicative facts comprised in the notions definitive of the substances at issue.[34]

 Thus, even though Rescher sees relations as logical conclusions which are ultimately divorced from substances, he also claims that these conclusions still establish a kind of connection. That is, the relation itself does not have its own reality, it has only a dependent reality tied to the predicative terms. While I agree with Rescher on many of these points, he does not provide a detailed enough account of how or why this reality is transferred from the predicates to the relations. His account, by my understanding, claims that logical conclusions are this method of transferring reality from predicates to relations. However, he does not examine this logical conclusion in terms of activity, something which I feel is vital in order to understand relations in Leibniz's metaphysics.

Opposed to the reducibility thesis, Hide Ishiguro's reading of Leibniz's theory leads her to believe that even if substances only express their relations through relational propositions, this does not make the relation any less true or real. For example, the relation 'Titius is wiser than Caius' as it is broken down via logical reduplicatives becomes: "Titius is wise and as such [*qua talis*] is superior, insofar as [*quatenus*] Caius *qua* wise is inferior."[35] This restatement could be divided up, or reduced, to the expressions 'Titius is superior in wisdom' and 'Caius is inferior in

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[34] Ibid, 74.
[35] C 280 (translation taken from Ishiguro, "Leibniz's Theory of the Ideality of Relations," p.207)

wisdom'. Ishiguro argues that while this does indeed reduce the relation down to its respective expressions by both substances, "the fact that one does not name the second term of the relation does not make the property expressed by 'is superior' any less relational."[36] Therefore, Ishiguro is arguing that Leibnizian predicates, even when reduced, maintain a relation to another term. When broken down into predicates, 'Paris loves Helen' and 'Helen is beloved by Paris', they are not standard predicates which are self-contained; these predicates are necessarily relational. Even if the predicate is only 'lover of *x*', this predicate cannot manifest without an '*x*'. The second term of the relation is always included in any relation no matter how obfuscated it is. To this extent, relations always supervene on a subject because the relation carries something that each related subject cannot affirm based on their own clear and distinct perceptions. Yet the relation not only *results* but also is *necessitated* by the real qualities of the related subjects.

Jaakko Hintikka similarly views Leibniz's stance on relations to be one which establishes more than just a logical conclusion that can be made about two subjects given information about the predicates of each. Hintikka understands relations to inhere in subjects even if the relation is not clearly and distinctly represented by the subject in question. Much of the argument from Hintikka seems related to the claim from Leibniz that monads are mirrors of the whole universe and thus reflect or represent one another.[37] It seems evident that monads do not *clearly and distinctly* mirror the universe, that is, I do not clearly perceive or apperceive what the President of China is doing at this moment, but this is necessarily represented within myself. My most immediate perceptions which are the clearest and most distinct tend only to inform me of my conscious thoughts, desires, feelings etc. but beyond these perceptions there is still a universe contained within me 'in a certain way'. To go against the claim that monads contain the whole

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[36] Ishiguro, "Leibniz's Theory of the Ideality of Relations," 207. (1972)
[37] Hintikka, "Leibniz on Plenitude, Relations and the 'Reign of Law'," 171-3. (1972)

universe 'in a certain way' is to do more than just reduce relations to predicates, it goes against Leibniz' claims about simple substance and metaphysics writ large.

On the contrary, as Hintikka proposes, these claims strongly suggest that "Leibniz was not trying to reduce relations to non-relational predicates but rather to reduce relational statements to statements in which a complex predicate (possibly involving relations) is attributed to a single subject."[38] Therefore, Hintikka claims that it is not exactly that relations lack truth or reality, rather, the limits of clear and distinct perception inhibit the possibility for any monad to fully know its own relations to another. By claiming that the degree of clarity and distinctness individuates monadic representations, one can say that Paris and Helen's respective clarity on their relation distinguishes that relation for each of them. In the same way, all monads represent the universe differently due to a perspective that grants different degrees of clarity and distinctness. Thus, the relation 'lovers' is clearer in some ways for Paris and clearer in other ways for Helen, ultimately producing a difference that is incommensurable even though it involves the 'same' relation.

Ishiguro and Hintikka challenged the argument that relations are always reducible to predicates by claiming that while relations are rooted in predicates, those predicates are still two-term predicates even if they are expressed differently by each substance. Therefore, while 'Paris is a lover of Helen' is strictly said of Paris, the predicate gestures toward another substance and is therefore not reducible to a simple predicate. This approach to understanding Leibniz's theory of relations as a system of solely relational predicates challenged the line of thought that relations could be reduced down to simple predicates like 'kind' or 'young'. However, Jan Cover and John O'Leary-Hawthorne argue for a return to the reducibility thesis.

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[38] Ibid, 168.

Cover and O'Leary-Hawthorne argue that the 'relational predicate' view is merely linguistic-syntactic nitpicking lacking any real philosophical inquiry. Part of their argument relies on their understanding that since there are no extrinsic denominations lacking intrinsic foundations, then every denomination can be reduced to an internal expression – at best, any 'relational predicate' is really only reflexively relational.[39] What is meant by 'reflexively relational' is that the predicate 'Paris loves Helen' expresses a relation between only Paris and Paris' own representation of Helen, not to the substance Helen herself. Ultimately, Cover and O'Leary-Hawthorne argue that 'relational truths' are the result of the mind's supervenience on what they call the 'monadic facts'.[40] Thus, Paris's love for Helen is a monadic fact about Paris, when considered alongside the monadic fact of Helen being beloved by Paris, the relational truth of 'lovers' is the manifestation of the mind's supervenience on these facts. However, Cover and O'Leary-Hawthorne go a step further and claim that there is an identicality between the ideal relational truth and the real monadic fact: "The reductionist program we have sketched on Leibniz's behalf can perfectly well permit an identification of some relational accident with an intrinsic modification…a relational accident can and should be regarded as identical with an intrinsic accident insofar as certain facts of expression hold of it."[41] These 'certain facts of expression' are things like a king being a person who has a kingdom, or paternity applying to a person who has children. As I understand Cover and O'Leary Hawthorne, their argument is that relational predicates are *no more* than these expressions of facts; "Our point is not to deny the existence of relational accidents thus understood. There are such accidents, and they are identical with their *esse-in* foundations."[42] In which case, saying Paris and Helen are lovers is nothing

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[39] Cover and O'Leary-Hawthorne, *Substance and Individualism in Leibniz,* pp.67-8, c.f. pp. 70-1
[40] Ibid, 85.
[41] Ibid, 86.
[42] Ibid.

more than saying Paris is a lover of Helen and Helen is beloved by Paris; thereby managing to stay in line with the fact that nothing can be added to monads, but also once again making relational predicates inactive in the production of a relational statement.

While I am sympathetic to many of the points argued by the thinkers above, my own reading of the 'Paris loves Helen' relation requires an understanding of Leibniz's distinctions of relational agreement into two categories: homogeneous and congruent. I understand Leibniz's use of logical reduplicatives to play the role of instituting a *congruent* relational agreement. Therefore, relational agreements must be explored.

Relations as Agreements

Leibniz is inheriting a lot from the systems of Aquinas, Ockham, Duns Scotus, Suarez, Jungius, and the Jesuit Aloys Temmik.[43] Further, almost all these systems seem to take their cues from Aristotle in claiming that there are two types of predicates: universal and particular; universal accidents can inhere in a subject and may be predicated of another subject, whereas particular accidents inhere in a certain subject but cannot be predicated of any other subject. For example, many people are humorous, but no one is humorous in *exactly* the same way. While I can say that Bob Hope and Dave Chapelle are both humorous, they are not identically humorous. Thus, any number of people can be said to be wise or tall, but they are not wise or tall in exactly the same way as another person who is called wise or tall. This hashes out well in terms of abstract things, such as wisdom – I know that two individuals who score the same on a test are not intelligent in the same way, though, I could easily refer to both as intelligent for doing well on the test. The problem of relations involving physical measurements, though, such as temperature, size, weight, etc., is that they can seem to be *exactly* the same. The objectivity of

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[43] Pseudonym of Gaspar Kuemmet.

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these measurements is precisely the beauty of them – twenty pounds is twenty pounds whether in New York or Chicago. How can we say that X being twenty pounds is somehow different from Y being twenty pounds? For Aristotle and some others, this was not an issue because these were the type of predicates that could be said of a subject but were not necessarily *in* the subject (mainly because these descriptions can change over time). However, Leibniz manages to discern a unique way of understanding these differences through what he calls the "situational relationship" of the predicated subject.[44]

Leibniz's fifth letter to Clarke examines a geometrical situation where the positions of two points, A and B, change so that B is now in the former position of A – and thus, holds all the relational measurements that A previously held. However, Leibniz introduces the notion of 'relation of situation' to show that B still does not possess a relation to the other points that is *identical* to the relation previously held by A.[45] Rather, Leibniz will claim that these two relations only *agree*;

> And here it may not be amiss to consider the difference between place and the relation [*rapport*] of situation which is in the body that fills up the place. For the place of *A* and *B* is the same, whereas the relation of *A* to fixed bodies is not precisely and individually the same as the relation which *B* (that comes into its place) will have to the same fixed bodies; but these relations agree only. For two different subjects, as *A* and *B*, cannot have precisely the same individual affection [*affection individuelle*], it being impossible that the same individual accident [*un même accident individuel*] should be in two subjects or pass from one subject to another.[46]

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[44] Mugnai, *Leibniz' Theory of* Relations, 37.

[45] Loemker translates Leibniz's *rapport de situation* as "relation of situation", whereas Mugnai translates it as "situational relationship". It should be noted that a substantial amount of literature has addressed this 'relation of situation', otherwise referred to as *analysis situs*. For the purposes of this investigation I am not interested in a full discussion of 'analysis situs' but I do feel I would be remiss to not mention it as a factor in Leibniz's understanding of relational agreements. I recommend Vincenzo De Risi's *Geometry and Monadology*: *Leibniz's* Analysis Situs *and Philosophy of Space* for further reading.

[46] GP VII 400-1 (L 703-4) [1715-6]

This example and analysis seems to map well onto Leibniz's usage of logical reduplicatives. As discussed above, the logical reduplicative necessitates a relation through the agreement of internal predicates in two distinct subjects but denies the notion that any relation could be in two subjects at once (be that paternity, love, distance, etc.). Leibniz continues in his letter to Clarke by stating that issues arise because the mind "is not contented with an agreement" and looks for "identity, for something that should truly be the same, and conceives it as being extrinsic to the subject; and this is what we here call *place* and *space*. But this can only be an ideal thing, containing a certain order, wherein the mind conceives the application of relations [*rapports*]."[47] While this might seem quite damning, I take it to mean that the error of minds is not in the supposition of relations full stop. Rather, the error occurs in understanding relations as extrinsic qualities that are shared or expressed identically between subjects. Leibniz's conception of relations of situation which instantiate the agreement of two predicates is still a relation, but it is one that maintains the individuality of each subject. Mugnai surmises that this means "that it is reasonable to maintain that the same accident cannot adhere in more than one subject, without having to draw the conclusion that relations are 'purely mental realities'."[48] Leibniz is able to fully account for both abstract and concrete relations and predicates without resorting to an understanding of all of them as purely mental realities.

Leibniz claims in *Discourse* regarding predicates of Alexander the Great, "Thus, taken in abstraction from the subject, the quality of being a king which belongs to Alexander the Great is not determinate enough to constitute an individual and does not include the other qualities of the same subject, nor does it include everything that the notion of this prince includes."[49] That said,

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[47] Ibid
[48] Mugnai, 39.
[49] GP IV 433 (AG 41) [1686]

Leibniz goes on to explain that God knows everything there is to know about Alexander just from knowing his 'individual notion'.[50] That is, God knows all the predicates that will result from the individual notion of Alexander. Thus, whereas you or I cannot fully know the predicates that found the relation 'king' that our minds observe in Alexander, the opposite is true for God, who sees the totality of the foundation and understands the result to follow.

That is, it is the full set of predicates within Alexander that inform the representation of him as 'king' from a given perspective: thus, when I recognize Alexander as 'king', nested within this recognition are the qualities, perceptions, and actions of Alexander that led to him becoming king. However, simply examining the accident 'king' does not reveal the complexities of the substance known as Alexander. By my understanding, it is possible to extend Leibniz's statements about analyses of denominations like 'king' in Alexander to relational predicates such as 'Paris loves Helen'. Leibniz's usage of reduplicatives and his understanding of them resulting in the agreement of a relation shows a sort of conceptual contiguity between related subjects. That is, contiguity can be understood as a descriptor of *what* is related. While an infinite intellect can examine Alexander, and know he will be a king, an infinite analysis of 'King' does not produce an understanding of Alexander.[51] If this is the case, then it would mean that the relation itself, such as 'lovers', does not provide us knowledge about Paris or Helen, but an analysis of Paris or Helen would produce the relation of love between them. Moreover, the analysis of Paris's set of predicates would produce results *congruent* with those found in an analysis of Helen's set of predicates, at least regarding the understanding of them as lovers.

This last point leads us to the important role that Aloys Temmik's work seems to have played in the development of Leibniz theory of relations. Temmik did not understand

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[50] Ibid.
[51] Ibid.

"similarities as similar", meaning that whiteness in Socrates could not be understood as 'similar' to the whiteness of Plato.[52] This might not seem entirely different from Leibniz's previously cited claim that similar predicates only 'agree'. However, in marginal notes of his copy of Temmik's *Philosophiae vera*, Leibniz wrote "similarities can be similar; as the ratio A to B can be similar to the ratio C to D."[53] Thus, while Leibniz does not want to say that two relations can be identical (as was evident from his statement in the letter to Clarke), the notion of agreement does indicate similarity between these relations. Furthermore, when discussing similarity between geometrical figures, Leibniz understands them as either *homogeneous* or *congruent*.[54] Homogeneous identicality of concepts would be something like my understanding of a triangle in one math problem and my understanding of a triangle, with the same measurements and angles as the previous triangle, in a different math problem. These two concepts of triangle are coincident, and due to this, they are not actually understandable as distinct. The superposability of these notions of triangles indicates more than just agreement. Thus, if two ideas of triangles are identical, then they are actually just the same idea of triangle. However, if there are two existing triangular objects with the same measurements and angles, then these two existing triangles are instead understood as *congruent*.

These two existing triangles could also be said to be superposable and interchangeable. For instance, if you have multiple four-by-fours to use when constructing something, it does not matter which one you use first given that they are all interchangeable. However, Leibniz indicates that even congruent things are still distinct from one another, claiming:

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[52] Mugnai, 87.

[53] VE 1087: "Similitudines possunt esse sibi similes. Sic ratio a ad b potest esse similis rationi c ad d." c.f. Appendix of Mugnai's *Theory of Relations*, 159.

[54] GM V 153-4. [1679]

[T]hey are discriminated only by reference to place; that is, they cannot be discriminated until another object external to them is assumed as point of reference and it is observed that they have different positions with reference to this third object.[55]

While Leibniz is explicitly discussing the distinguishability of two geometric points or objects, this explanation seems to echo his usage of logical reduplicatives. Consider again the application of reduplicatives in the example of the distance between the country house and town: This country house is a thousand paces away from the town *insofar* as the town is similarly distant from the country house and the distance is a thousand paces. What makes this relation work is the congruence of the measured distance. If this distance was not observed as congruent, then one could not conclude a relation of distance between them. I hold this to be the case because Leibniz explicitly says above that there must be an observer to discern a difference in position. Otherwise, while the town and the country house would still be a set distance apart, no observer would be present to explicitly relate one to another. That said, the relational statement that the house is a thousand paces from the town is a conclusion, but it is not produced by the addition of new content. Rather, the similarities are recognized and understood as congruent. This is clearly not the same as a relation being homogeneous between substances but it is clear that homogeneous relations cannot exist in substances since this would violate the principle of identity.

However, Leibniz is keying into the fact that minds often mistakenly understand relations *as* homogeneous. That is, the homogeneous relation between two identical triangles in separate math problems makes it impossible for me to justify my understanding of these as two distinct triangles. Likewise, if I say 'Paris and Helen are Lovers' this ascribes a relation which seems homogeneous but cannot be, because Paris and Helen are not coincident substances: one cannot

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[55] Ibid, 155.

take the place of the other without difference. However, are 'Paris loves Helen' and 'Helen loves Paris' interchangeable or superposable *in the same way* as geometric points and objects? Almost certainly not. However, just because a relation between two substances is not congruent in the same way as the relation between two geometric points or objects does not mean that such relational formulations are not also due to something like congruence. After all, an infinite analysis of Helen as well as of Paris will both result in the relation 'lovers'. That is, while geometric points and objects have a fairly limited range of distinguishing factors and are thus more superposable, this does not mean that the complexity of substances prohibits a more complex congruence.

The Congruence of Relations

In the previous chapter I proposed that all monads share a common relation to the world, and that any given monad's relationship to the world could perhaps be understood as contiguous. The problem is that this insinuates that the world precedes all monads while also somehow containing all the monads and being represented by all monads. I believe that part of the solution to this problem also contains a reason for Leibniz adopting logical reduplicatives. Leibniz's metaphysics posits that this is the only existent world, and it exists rather than all the other possible worlds because it is the best, due to its accord with Leibniz's principle of the maximum.[56] Further, in *Monadology*, Leibniz claims that monads "only begin or end all at once, that is, they can only begin by creation and end by annihilation".[57] There is nothing in the world that is not composed of monads. From this, one can assert that when God creates the world, he does not simply create some empty pocket of space and fill it with monads, rather, the creation of

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[56] GP VII 303-4 (AG 150-1). [1697]
[57] GP VI 607 (AG 213). [1714]

all monads is the creation of the world. The monads that are created, though, must be compatible (Leibniz often uses the term 'compossible') with the world that God's free decree brings into existence.[58] What I am proposing based on this claim is that the world itself is only the manifold of relations that 'connect' all created monads and produce a congruency among these monadic representations of 'the world'. The monads that are created are not linked to one another insofar as they do not interact, but they do *agree* with one another in such a way that what *results* is the world.

In the previous discussion of congruence, I discussed how it does not matter which four-by-four one uses first from a pile of them because they are 'congruent' even though they are not identical. Now, however, I am arguing that the same principle holds for monadic representations of certain relationships. Each monad's representation of the world is distinct, but I am also arguing that a complex form of congruence is at play among these representations of relations when those relations are represented *similarly enough* in each subject. It seems like quite the stretch to say that my representation of the world is congruent with someone else's representation of the world; especially considering the fact that I am oblivious to the very existence of most people, let alone their relations. However, my fraternal relationship with my brothers *seems* to be similar enough that our representations of this 'fraternity' are congruent. Therefore, while I understand this notion of 'congruent agreement' to be the immaterial analogue for contiguity in the mental continuum, there must also be a way of understanding *in*congruence.

The Uninterrupted Ocean

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[58] Leibniz goes to great lengths to show that there is still freedom in this 'best' world and that the compossibility does not equal determination. However, I do not feel it is relevant to the arguments I am making here to address the issue of freedom.

I do not consider this to be a terribly radical reading of Leibniz; many scholars have written about the novelty and production that Leibniz associates with the repetition of the world through its representations. Each repetition or representation of the world endlessly ripples out to demand further and further repetitions and representations. Daniel Selcer's writings on Leibniz's vision of an infinite encyclopedia explains that within such an encyclopedia, all concepts or references are always also cross-references with the entire rest of the encyclopedia; such that "every concept includes a reference to every other, but each is also a unique pattern of that total system of references."[59] As Selcer points out, this is because Leibniz's theory of infinity is far more complex and unpredictable than Newton's. Newtonian infinities are simply infinitely large containers that can never be filled, or whose contents could never be enumerated. Selcer offers an analogue for what a Newtonian encyclopedia might look like:

> Our imaginary Newtonian encyclopedia would be organized by the notion that the classificatory space of its pages and volumes is absolute and empty, ready to receive its content from the substance of particular truths. No matter which propositions those truths may be, the classificatory system awaiting them is understood to be already given. More important, the "terms" of a Newtonian encyclopedia – the "truths" or "propositions" to be organized – *occupy* a location within that classificatory space.[60]

This is quite different from the Leibnizian vision where the "classificatory space is a relational totality of simultaneous coexistents."[61] It is Leibniz's proposal that all concepts are referential and representational in some way that leads him to claim that all of knowledge is like one continuous, uninterrupted, ocean.[62] Thus, since every science, every concept, are all cross-referenced, the very cross-referencing of these concepts endlessly generates more concepts

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[59] Selcer, "The Uninterrupted Ocean: Leibniz and the Encyclopedic Imagination," 43. (2007)
[60] Ibid, 39.
[61] Ibid.
[62] C 530-1.

which represent these cross-references and so on *ad infinitum*. Nevertheless, each reference, each entry in the Leibnizian encyclopedia, is similar to every other concept's cross-reference or representation of *it*; that is to say, they all *agree*. However, if knowledge is like a continuous ocean that is filled with distinct concepts, all of which reference one another and reproduce this ocean in a way that is unique but still agrees with one another, then how are these concepts truly distinct? How do they become individuated from this continuous ocean of knowledge? It must be the case that each idea is distinct or else it would not be understandable as a unique index of all other ideas. While every concept references all the others *differently*, there is still the criteria of agreement which suggests that each entry in the Leibnizian encyclopedia is interchangeable. This cannot be entirely true, though, or it would result in the dissolution of difference. The ocean that is produced may be a single continuum, but it is understood and represented distinctly. This is the problem of incongruence, and it is not difficult to see how this problem reappears in the issue of monadic representations of the world as well. While it is clear that these entries in the encyclopedia are not homogenous, it seems quite possible that they are congruent – but it is not yet clear what the criteria for incongruence might be, or if there even is such a thing as incongruence, and this seems like an important criterion to elucidate.

The *New Essays* and Concurrence

In *New Essays*, Leibniz no longer uses 'homogenous' and 'congruent' to distinguish relations and instead uses 'comparison' and 'concurrence'. While I think that 'concurrence' shares much in common with 'congruence', there are still distinctions between the two terms that I think are helpful for understanding the criteria for incongruence or nonconcurrence. The development of 'comparison' as a relational category will likely be the most helpful. Though, as it seems to be the case that if a relation is not one of congruence or concourse, then it must be

comparative. Leibniz provides the grounds for distinguishing these types of relations in the passages below:

> I take relation [*la Relation*] to be more general than comparison. Relations [*les Relations*] divide into those of *comparison* and those of *concurrence* [*de concours*]. The former concern agreement and disagreement (using these terms in a narrower sense), and include resemblance, equality, inequality, and so forth. The latter involve some connection [*liaison*], such as [*comme*] that of cause and effect, whole and parts, position and order, and so forth.[63]

And,

> I have already pointed out that all relation [*rapport*] involves either *comparison* or *concurrence* [*de concours*]. Relations of comparison yield identity or diversity, in all respects or in some only, which makes things the same or different, like or unlike. Concurrence includes what you call coexistence, that is, connectedness of existence. But when it is said that something exists or possesses real existence, this existence itself is the predicate; that is, the notion of existence is linked with the idea in question, and there is a connection [*connexion*] between these two notions. Or the existence of the object of an idea may be conceived as the concurrence of that object with myself.[64]

My understanding is that Leibniz felt the need to revise his relational terminology as he realized that his mathematical terms of homogeny and congruence failed to provide adequate differentiation in all aspects of relations. While it is perhaps possible to think of 'Paris loves Helen' as a congruence of Paris' status as 'lover' and Helen's status as 'beloved', it does not explain how, or why, my representation of 'Paris loves Helen' is *incongruent* with either Paris' or Helen's representation. Seemingly, I also represent this relation within my monad since I represent the world, but the depths of this relation are far from clear to me. In the passages above, Leibniz is providing a means of discerning whether a relation is congruent, or whether it only agrees. Leibniz even places agreement and disagreement under the category of comparison. Therefore, it seems that while my representation of 'Paris loves Helen' might agree with the

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[63] A.vi.6, 142 (RB 142). [1704]
[64] Ibid, 358 (RB 358, my emphasis). [1704]

representation – that is, might be equally truthful of describing the situation – it is not the case that my representation of Paris or Helen is concurrent in the production of that relation. It is also worth noting that while Leibniz claims that concurrence is *comme* or 'like' a causal relationship, he does not go so far as to say that it actually is a causal relationship. Such a statement would seemingly violate the windowless quality of monads, and Leibniz knows to avoid it. However, thinking of a concurrent relation as *similar* to 'cause and effect' or 'part and whole' lines up with his use of logical reduplicatives. It is the case that *because* 'Paris is a lover, and *eo ipso* Helen is a loved one' that one can say, 'Paris loves Helen'. There is an *effect* that is *caused* by the private representations of each subject's relation. In which case, it would seem that the relation only holds as concurrent *for* Helen and Paris. Any other representation of this relation is instead *comparative*. Leibniz seems to provide an additional criterion determining whether a relation is concurrent or comparative, writing that a concurrent relation is one whose "foundation lies in what is the case within each of the individual substances taken alone."[65]

Considering Bäck's statement about Leibnizian reduplicatives showing the 'ground of truth' of relations, this makes it seem as if all reduplicative relational statements are concurrent. The answer seems to be both yes and no. If I say, 'Hector knows that Paris loves Helen', then this is also a concurrent relation, wherein Paris must love Helen such that Hector can be aware of it; to state reduplicatively: Hector knows that Paris loves Helen, insofar as Paris has confessed this love of Helen to Hector. However, this relation *is not* concurrent with the one between Paris and Helen. It is only concurrent for Paris and Hector. Thus, as Leibniz says, everything is interconnected; however, nothing is interconnected in the same way. The concurrence of Hector and Paris in this instance only produces a *comparative* understanding of Paris status as 'lover of

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[65] Ibid, 146 (RB 146).

Helen'. This becomes much more complicated if one wants to say 'Hector knows that Paris and Helen are lovers.' This kind of relation involves statements about the predicates of all three subjects such that it would have to be restated into two distinct statements: Hector knows that Paris is a lover of Helen insofar as Paris has confessed this love of Helen to Hector, and *eo ipso* Helen is beloved by Paris **and** Hector knows that Helen is a lover of Paris insofar as Helen has confessed her love of Paris to Hector, and *eo ipso* Paris is beloved by Helen. To be clear though, Hector's knowledge of this relation is only comparative to the expression of the relation by Paris and Helen. Of course, stating relations in this way is only necessary to show the substantial distinctness in all metaphysical rigor such that a relational statement can have its criteria for validity affirmed. Such an understanding of concurrent relations maintains that the relation *itself* is not in either substance, but it is founded or *produced* through a relational concurrence of each substance. Moreover, this understanding allows one to easily discern whether a relation is concurrent or comparative. If the relation results from the activity (apperception) of the substances in question, then it is concurrent.

To explain why the relation *AB*, or 'Paris loves Helen', should not be understood as comparative, it is useful to return to the concept of indistance in motion. As discussed, this conception is refuted as a reasonable account of motion because it does not actually assert motion. What it asserts is only an indistance that is so extreme that the two states suffer no gap and thus the motion is understood as an act of transcreation. As the model from Roy Cook explained: "Two squares that share an edge are contiguous but not overlapping; the edge, while an ingredient of both, is a part of neither."[66] Relational concurrence is the founding of such an 'edge' (or terminus) in substantial apperceptions. The relational statement is produced from the

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[66] Cook, "Monads and Mathematics: The Logic of Leibniz's Mereology," 12. (2000)

intimacy of the related substances' activities but the relation itself is only contiguous with each substance, it is not a predicate within either substance. The activity is not the simple state of 'bordering' a shared terminus, the activity is the establishment of such a terminus; like oil and water reacting to one another to maintain separation. However, rather than the repellent forces of water and oil, the activity of relations is more like the magnetic pull of polar opposites. Even though the force of the activity 'joins' substances together, this joining still maintains the distinction of each substance.

All of this contributes to my understanding of relations as folds. That is, they operate through the production induced by contiguous activity. Looking back at the discussion of folds in motion from the previous chapter, Leibniz's claims about the unity of these lesser folds within the greater folds implies a concurrent relationship as well. I do not think it would be a mistake to speak of the unity of these folds within the greater fold as being the case because each lesser fold serves as the *foundation* of the greater fold.[67] Further still, I am not denying that the relation itself is, to some extent, an ideal production but the grounds for that production are absolutely real and rooted in the related substances to such a degree that the concurrence of their substantial notions *produces* an understanding of this relation, at least insofar as the substances themselves serve as the foundation of that relation. Therefore, one can imagine someone meeting Paris, or Helen, and not immediately knowing that they are lovers. For the Paris and Helen, though, this relation of love is immediately obvious. I understand this to be inferring that concurrent monadic relations are instances of monadic intimacy. I call this intimacy rather than unity because the unity always resides in ideal understanding of the relation as universally distributed across

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[67] Moreover, motion itself is understood as ideal to some extent as well, since one's apperceptions gloss over the distinctness of each lesser fold and only understand the greater folds of motions. The unity of the substance in motion is true or real insofar as the activity is consistent but the motion is not homogeneous across each instance, as was shown in the discussion of Levey's examination of folds as fractal and always non-differentiable.

subjects while in reality (for Leibniz) the relation itself is produced by the fact that the concurrently related monads equally produce the foundation of that ideal relation.

However, to be explicit, it is not my understanding that Leibniz is suddenly fabricating new distinctions of relations in *New Essays*. Rather, I understand Leibniz to be developing the distinction of congruence and homogeneity, or in the case of homogeneity, casting it off as non-relational.[68] Congruence has instead been developed into the more complex distinctions of comparison and concurrence. To put it another way, a concurrent relation is produced by the congruence of substances' individual notions, or appetitions. A comparative relation is also a relation of congruence, but it does not contain a direct source of production for that relation. All monadic representations of the world are comparatively congruent, whereas all relations that are produced from the activity of an individual notion result in a concurrently congruent relation. Ultimately, I argue that there is no such thing as incongruence in Leibnizian relations, but the distinctions of congruence allow for the distinction of substances.

Thus, returning to Selcer's examination of the Leibnizian encyclopedia, one can see how each reference and cross reference is a mixture of congruent relations, i.e. comparative and concurrent. The cross-referencing is itself a concurrent relation, but the results are ultimately only comparative. The infinite volumes of Leibniz's encyclopedia are also infinitely differentiable, but the production of each volume relies on a kind of concurrence with the catalogued world.

Finally, what I am claiming here through this examination of the reduplicative structure of relations that allows an understanding of their concurrence is that the produced ideal relations are nonetheless true rather than fictive because they are based in the truth of monadological

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[68] To be fair, it has only been 'cast off' as a relational term. Homogeneous relations arguably lead to, or are another way of stating, Leibniz's conception of the identity of indiscernibles (Bäck 451).

intimacy. However, while Leibniz often guarantees this truth solely through utilizing God as the guarantor of this truth, this is not the only way that Leibniz guarantees the veracity of relations. Another way that Leibniz guarantees the veracity of relations is through his discussion of intimate and immediate perceptions in *New Essays* and elsewhere. In the following chapter I will be investigating what kinds of truth are produced through these intimate and immediate perceptions.

Conclusion

Where I see the crucial divide between reductionist and realist readings of Leibniz's theory of relations is in the veracity and reality attributed to these logical conclusions. Thinkers like Russell, Mates, Rescher, Cover, and O'Leary Hawthorne, all seem to believe that while relations can be logically concluded, given that they do not inhere in any subjects, they must then also lack reality and truth. My response is that relations do inhere in subjects, only they inhere 'contiguously' through the operation of concurrence. This perspective allies me more closely with Ishiguro and Hintikka insofar as I am claiming that the way Leibniz expresses relations still demands that there be some other substance which relational predicates relate *to*, something that has been clear since Socrates questioning of Agathon about the nature of love in Plato's *Symposium.*[69] However, while these relational predicates may only be concurrent – my perspective on a relation is necessarily different from the individual I am related to – the relational statements that result are still pragmatically correct.[70] To clarify, the unity of these

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[69] Socrates shows Agathon that no one is a brother unless they are a brother *of* someone else, and similarly, love is always *of* something that one does not have or, at least, can lose (pp. 40-3, Nehamas and Woodruff translation 1989).

[70] In a letter to Clarke, Leibniz wrote "Therefore we must say that this relation, in this third way of considering it, is indeed out of the subjects; but being neither a substance or an accident, it must be a mere ideal thing, the consideration of which is nevertheless useful" (GP VII 401; L 704) [1715]. My usage of 'pragmatic' is derived from this utility that Leibniz mentions.

concurrent expressions of the relations make up the greater expression of the relation itself which is 'contiguous', or 'indistant', to each related subject. However, this contiguity, or indistance, is indeed ideal, but the real structure of concurrence in the related substances asserts the reality and truth of such ideal productions.

The real structure of the relation that is expressed differently in the ideal relational statement needs to be examined. The goal of the next chapter is to consider Leibniz's use of 'virtual' in logical relations to explain the structure and reality of the relation *qua* relation. I will argue that at the level of the virtual, substances do completely coincide and 'share' their relations. However, not everything that is virtually contained in a given substance will become explicitly expressed (i.e. actualized). The actualized expressions of relations are *not* shared, but those actualized expressions are the product of all substances virtually containing the universe in the same way. The perspective necessary to express the universe of all other substances leads to actualized differentiation. However, the foundation for those perspectives is the same universe that is virtually contained in every subject. Therefore, the task of the next chapter is to define the 'virtual' for Leibniz and explain how the virtual functions in relations. I argue that it is this the same virtual foundation that establishes the reality of relations *qua* relations. I have argued that relations are congruent, and in the next chapter, I will try to show that this congruence holds despite explicit differentiation because of the virtual.

<u>Chapter III: The Reality of Relations</u>

Why does it matter if the relational statements produced by relational predicates express something 'real' rather than something imagined? I argue that since Leibniz frequently affirms the interconnection of all substances, it would be surprising if that interconnection were an imaginary one.[1] More importantly for my own project, if this interconnection were imaginary, this would mean that intimacy itself is a fantasy. It could be argued that Leibniz himself was likely unconcerned with the reality or fantasy of relations given his commitment to concomitance.[2] Although his system does not demand an understanding of relations as real, I am arguing that it is completely capable of supplying an understanding of relations as real to a certain degree. Therefore, while this question of the reality of relations is perhaps unimportant for Leibniz with respect to his larger project, his discussions of relations do invite the consideration of the reality of these relations. Since I am interested in understanding Leibnizian relations as intimate, I want to know if the uniqueness of relational predicates renders an understanding of relations themselves as essentially imaginative, or if there is some evidence that could be used for defending the reality of relations. I understand the intimacy of relations to be a connection that nevertheless maintains the distinct individuality of the connected substances. For this to be the case, I need to provide an understanding of what is 'real' about relations beyond relational predicates. I am arguing, though, that a real intimate relation must be more than a logical conclusion because that removes each substance's volition and activity from the

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[1] GP VI 616 (AG 220) [1714], c.f. GP II 59 (L 338) [1686], C 521 (AG 33) [1689], GP IV 484-5 (AG 143-4) [1695], and GP II 226 (L 524-5) [1701]. This discussion of the interconnection of all things is clearly a part of Leibniz's theory of pre-established harmony. However, Leibniz does not always say this harmony is an interconnection (*liaison*) and sometimes only calls it concomitance (*concomitantiae*). This leaves it unclear if the harmonious relationship is based on relations, or just a perfect synchrony of action. I am arguing for the former.

[2] GP VI 617 (AG 221). [1714]

formation of a relation. Saying all X are Y and Y is Z therefore all X are Z does not contain any account of activity. Leibniz, in his attempts to solve the problem of motion in *Pacidius*, even realizes that contiguity alone is not motion. If object A passes from X to Y, simply saying that Position X and Position Y are indistant does not fully account for why a change occurs such that the position of A has changed. The change must occur through the connection of activity, this activity being rooted in appetition. However, what is this activity and how does it establish a connection? All that is clear up to this point, is that appetition asserts the law of the series in the substance (a sequence of activities that will be actualized due to the initial activity of the appetition, or desire). Due to this, I think it stands to reason that it is through an understanding of this activity that bridges together these other contiguous actions that one can most fully account for the diachronic identity of motion.[3] Likewise, Leibniz's theory of relations requires activity so that the produced denomination (e.g. 'lover of') is not external to the substance. Strictly speaking, such a denomination would then be only an internal change in the substance. However, given that all substances are interconnected, I am arguing that this change, which is uniquely founded and actualized for each substance as a predicate, is still produced out of relations and thereby asserts the reality of that relation. However, this raises the question of what 'real' means for Leibniz, and how what is ideal can be real or produces what is real. Analyzing this and demonstrating the reality relational statements express is crucial for maintaining my position that relations are intimate.

Up to now, I have argued that relations are a type of fold insofar as folds constitute unities through contiguity and that relational contiguity is understood as 'congruence' for

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[3] For some discussions of the law of the series, see GP II 135-6 (L 330) [1690], GP II 259 (L 533) [1703], GP II 262 [L 534) [1704], GP IV 48 (AG 296) [1703-5], and GP VI 610 (AG 216) [1714].

Leibniz; specifically, comparative or concurrent congruence.[4] Folds, as used to account for motion, are connective degrees of force (activity) that maintain their distinctness from one another despite establishing a greater activity.[5] Thus, every fold can always be divided into 'lesser folds' that express lesser degrees of activity; likewise, every fold also becomes enfolded into 'greater folds' that express a higher degree of activity. What connects these folds is the congruence of their activity established by an 'indistance', or contiguity, of the expressed force.[6] That is, there is some commensurate degree of the connecting force in the lesser fold, and some other commensurate degree of that force in the greater fold. Given that every fold is infinitely divisible into lesser folds, it is reasonable to assert that each of the lesser folds comprising an action is congruent with the activity of this greater fold (the action itself). By this account, I argued it is also reasonable to assert that the greater fold would not be possible *unless* it were founded by these lesser folds. This type of congruence which provides the foundation for something based on the connection of multiple forces is understood as *concurrence* by Leibniz. A comparative relation would be something like comparing the motions of body A to the motions of body B. In his work on relations, Leibniz uses logical reduplicatives to split statements about predicates in subjects into contingent statements that include multiple subjects. [7] For example, the simple predicate statement 'Paris is a lover of Helen', can only be the case for Leibniz insofar as another predicate statement is also provided, i.e. 'Helen is beloved by Paris'.

I argue that this method of using logical reduplicatives to showcase the entanglement of relations enforces the idea that these relations are concurrent. The logical reduplicative makes explicit that there is a requisite co-existence required for a relational predicate to be true of even

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[4] A.vi.6, 142 and 358 (RB 142 and 358). [1704]
[5] A.vi.3, 555 (LoC 186-7). [1676]
[6] ibid, 558 (LoC 191). [1676]
[7] C 287. [Date not given, but likely around 1680]

one substance (i.e. 'Paris is a lover of Helen' seems like a predicate that only involves Paris, but Leibniz claims this is only the case insofar as one recognizes that it also means Helen is beloved by Paris). As will be shown later in this chapter, this reduplicative approach to relations is too reflexive to express the unilateral and non-reciprocal nature of relations. Furthermore, if all substances are interconnected, then nested within Paris' predicate 'lover of Helen' are countless other predicates. The problem with this kind of reduction is that it is still not a comprehensive account of the relation because it does not account for the entirety of what is enfolded in each subject.[8] Therefore, a comprehensive account of the relations requires an infinite analysis, which is impossible not only for human minds but also in general, since what is infinite can never be completed. Since no analysis can be completed, there is also no subsequent comprehensive demonstration of the relation. I take this to mean that Paris' predicate 'lover of Helen' entails an *infinity* of other coexistent predicates to be the case, not just Helen's predicate 'beloved of Paris'. Therefore, while the logical reduplicative shows the need to account for the interconnection of all relational predicates, I am arguing that it is *still* not rigorous enough.

However, Leibniz claims that there, is in fact, something else that requires an infinite analysis to understand: the virtual. In *Discourse on Metaphysics*, Leibniz discusses how it can be that God knows that Julius Caesar will one day become "perpetual dictator and master of the republic." [9] For Leibniz, this is the case, not because God has thrust Julius Caesar into this fate, but rather because God understands everything that is virtually contained in the individual notion of Julius Caesar.[10] In this instance, what is virtually contained is only that which is latent in the

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[8] See, GP II 438 (AG 199) [1712], C 403 (MP 94-5) [around 1686], GP VI 617 (AG 221) [1714], and Bäck, *On Reduplication*, 460.
[9] GP VI 436-7 (AG 45). [1686]
[10] Ibid.

subject. However, it is God alone who can analyze the subject's nature so fully that everything latent is clearly understood. That is, while being a ruler may seem contingent to a young Julius Caesar, God understands Julius Caesar's nature so clearly that the future predicate ("dictator of the republic") is apparent even though this predicate is not explicit for Julius Caesar himself or any other human at the time. What is virtually contained in a substance seems to be inevitable predicates that have not yet become explicitly expressed. That said, my concern is whether everything that is virtually contained in a substance must at some point become explicitly expressed. Marc Parmentier raises a similar concern in his analysis of Leibniz's usage of 'virtual':

> If one confronts this classic use of logical virtuality with Leibniz's construction of an individual substance enveloping the totality of its determinations, a difficulty arises. Does the virtual presence of propositions in the mind apply to all logically deducible propositions or only to the propositions that a mind will actualize during its existence?[11]

One of the many reasons Parmentier is curious about the inevitability of the expression of what is virtually contained is that in *New Essays* Leibniz uses enthymemes as examples of the virtual: "Thus, we use these maxims without having them explicitly in mind. It is rather like the way in which one has implicitly [*virtuellement*] in mind the suppressed premises in enthymemes, which are omitted in our thinking of the argument as well as in our outward expression of it."[12] An enthymeme is an argument that implies, but never makes explicit, one of the premises that justifies its conclusions (e.g. "Of course he gets paid more than her, he's a man", what is implied

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[11] Parmentier, "Leibniz et le virtuel," 457. My translation. Original: "Si l'on confronte cet usage classique de la virtualité logique à la construction par Leibniz d'une substance individuelle enveloppant la totalité de ses déterminations, une difficulté surgit. La présence virtuelle des propositions dans l'esprit s'applique-t-elle à toutes les propositions logiquement déductibles ou seulement aux propositions qu'un esprit actualisera au cours de son existence?"

[12] A.vi.6, 76 (RB 76). [1714]

but not explicit is that men receive unfairly higher wages than women for doing the same job). If something could be virtually predicated of a subject in the same way that a premise is virtually included in an enthymeme, then this would mean that not all aspects of the virtual must become explicit. To this extent, I am curious whether one could say that the conclusions regarding relations produced by logical reduplicatives are a way of making explicit what is only virtually expressed by the substances themselves, namely, the relational statement. Parmentier's investigation into Leibniz's usage of the virtual will be helpful in this endeavor because he understands the virtual as a degree of activity that works toward actualization. To be clear, this 'degree of activity' is not entirely synonymous with 'potentiality'. The virtual activities going on in a given substance are not simply latent potentialities, they are ongoing activities that have not yet become explicitly expressed by the substance. A loose analogy would be something like high blood pressure: if one does not regularly check their blood pressure, then they would not be aware of having high blood pressure until it became so severe that significant symptoms (e.g. a heart attack) occur. However, just because high blood pressure might not be noticed until significant symptoms are shown, this does not mean that the activities (of rising blood pressure) were not ongoing the whole time. Such activities are not, therefore, only potential, they are simply largely unnoticed.

This notion of the virtual in Leibniz, particularly as it pertains to predication, will be of great interest in further determining the actuality of relational statements for each related substance. That is, relational statements are clearly *real* insofar as they are stated. My question is whether (or to what degree) these statements describe the relation as it is expressed by the related substances. For example, "I saw a ghost" is a real statement – but is it a statement that describes reality? This is what I want to know about relational statements. My understanding is that a

relational statement expresses the virtual relation that is not explicitly expressed by each substance's predicational representation of their relation. Therefore, something like 'Paris and Helen are Lovers' is a relational statement that goes beyond the explicit expressions of that relation by the predicates of Paris or Helen, nevertheless, my claim is that what is virtually (i.e. non-explicitly) expressed in the relation does justify relational statements. This would get around the issue of 'two-footed relations' as the virtual relation is not *explicitly* expressed by either subject.[13] My theory is that the virtual is what incites relational predication (such as 'Paris is a lover') but is never actually 'in' a substance in any explicit way. In this case, the virtual would be like heat for boiling water: necessary for the production but not fully explicit in the result. It is not yet clear, though, how this 'virtuality' plays into, or aligns with, the ideality of relational statements; nor is it clear how this virtuality would affect the reality of a relational statement.[14] To this end, I will be examining Leibniz's understanding of the virtual, particularly when it comes to predication. I will also be diving deeper into Gilles Deleuze's examination of folds. Deleuze's interest in the distinction of virtual and actual in his own work naturally draws his interest to this distinction in Leibniz. More importantly, Deleuze considers this virtual/actual distinction as applying to folds and relations. Examining Deleuze's account of this virtuality and then comparing it to Leibniz's own statements will be invaluable as I attempt to weave together all these various claims about relations.

Types of Truth in Leibniz

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[13] What I am calling 'two-footed relations' references Leibniz's occasional claim that an accident that equally adhered for two subjects would have "one leg in one [subject] and the other [leg] in the other [subject]" (GP VII 401; AG 338).

[14] Leibniz's definition of 'ideal', and by extension the ideality of relations will be investigated in the next chapter.

One instance regarding predicates wherein Leibniz invokes the virtual is his discussion with Arnauld about Adam's freedom. For Leibniz, there are two kinds of truth: contingent and necessary. Necessary truths are those which, through an analysis of terms, can be shown to be identical "just as in algebra an equation expressing an identity ultimately results from the substitution of values [for variables]."[15] Thus, a necessary truth is one which produces an identity (as is done when I show that x = 5 when solving x+3=8). This is because if I can show an identity in the proof, then it is absurd for the contrary of this identity to be true. Therefore, Leibniz holds things like numerical and geometrical truths, as well as God's existence, to be necessary truths because they involve identities and their contrary implies a contradiction.[16] Contingent truths on the other hand, "cannot be reduced to the principle of contradiction; otherwise everything would be necessary *and nothing would be possible other than that which actually attains existence*."[17] Whatever actually attains existence is considered a 'truth of fact' which is a contingent truth that is known through reason or experience.[18] Contingent truths that do not "attain existence" are still *possible* for Leibniz even though they are never actualized.[19]

It has always been a struggle for Leibniz to convince others exactly how a contingent truth that *will be* actualized is not also necessary. While 'Adam sins' is a contingent truth, once God wills to create the world wherein this contingent truth becomes a truth of fact (a true statement about the created world) the question becomes: does God (in knowing that Adam's nature would lead to him being a sinner) necessitate Adam's sinning? Arnauld certainly thought so: "If this is so, then God was free to create or not create Adam, but supposing that he did will

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[15] Gr 302 (AG 28) [1686], c.f. C 16-7 (Parkinson 96) [1686]

[16] A.vi.3, 128 (Conf. p. 57) [1672]

[17] Ibid. (my emphasis)

[18] GP VI 612-3 (AG 217) [1714] c.f. F de C 181 (AG 96) [1689?], Gr 287 (AG 19) [1680-82?], Gr 302 (AG 28) [1686?], and GP II 46 (AG 76) [1686].

[19] A.vi.3, 128 (Conf. p. 57) [1672]

to create him, everything that has happened since then, and will ever happen, to humankind must have happened or must happen by a necessity that is more than fatal."[20] Leibniz writes in his letter of response that he feels as though Arnauld either did not fully read the principle with which he took issue, or took Leibniz's statements in that principle as being insincere.[21] The principle in question is found in Leibniz's summary of *Discourse on Metaphysics* which he sent to Arnauld, and is as follows:

> As the individual concept of each person contains once and for all everything that will ever happen to him, one can see therein the a priori proofs or reasons for the truth of each event, or why one happened rather than another. But even though these truths are sure, they are nevertheless contingent, being founded on the free will of God and creatures, whose choice always has its reasons, which incline without necessitating.[22]

It is not hard to see why Arnauld was perplexed, it seems contradictory to maintain that something is certain but not necessary. Leibniz's abridged presentation of his thirteenth principle in *Discourse* appears to be insinuating that God's freedom (and the freedom of other creatures) is proof enough that all created substances are also free, even though their future is assured. Leibniz's attempts to prove that Arnauld had misinterpreted this principle will be discussed, but first I think it would be helpful to examine the points Leibniz makes in the full section from the *Discourse*.

Leibniz admits that this principle *seems* to eliminate the difference between necessary and contingent truths. His solution, though, is to provide a further distinction between what is 'certain' and what is 'necessary'.[23] Leibniz asserts that it is true that he is "maintaining that everything that must happen to a person is already contained virtually in his nature or notion; just

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[20] GP II 15 (LA 9) [1686]
[21] GP II 17 (LA 21) [1686]
[22] GP II 12 (LA 5) [1686]
[23] GP VI 436-7 (AG 44-5) [1686]

as the properties of a circle are contained in its definition."[24] This 'virtual' containment is

discussed in other sections of the *Discourse*, one such statement from Leibniz is that "when the

predicate is not explicitly contained in the subject, it must be contained in it virtually."[25]

Therefore, the predicate 'sinner' is only virtually in Adam until Adam actually sins, at which

point it becomes an *explicit* predicate. By this same logic, the predicate 'king' is virtually in

Alexander up until Alexander becomes king and the predicate becomes explicit. Therefore, what

is virtually contained in a subject can be thought of as *almost* latent predicates.[26]

Think of it this way: if I go to the grocery store and buy a ripe avocado, I know that it

will go bad in a few days – this much is certain. However, when the avocado goes bad, I do not

think this is because my 'choosing' forced the avocado to rot. Rather, I chose an avocado that

would certainly rot within a few days. Put another way, I chose an avocado that virtually

contained the predicate 'rotten' and this became explicit as the predicate 'rotten' a few days after

purchasing it. God's decision to create a particular Adam in the world is like my decision to pick

a particular avocado. God is not forcing Adam to sin, rather God 'chose' an Adam who certainly

will sin. To be more accurate, though, God's choice is less concerned with the particular Adam

and more focused on creating the best of all possible worlds.[27] Creating the best of all possible

worlds may entail creating an Adam who sins, but creating any contingent existent is not the

principle decision.

While what is virtual *can* be thought of as latent, this makes it appear as if the virtual

will always eventually become explicit in some way, but this is not the case for Leibniz. By

distinguishing 'certain' from 'necessary', Leibniz argues that he preserves freedom and I think

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[24] GP VI 437 (AG 45)
[25] GP VI 433 (AG 41) [1686]
[26] Schwebel, "Intensive Infinity: Walter Benjamin's Reception of Leibniz and its Sources," 604. (2012)
[27] GP VII 302-4 (AG 149-151) [1697]

this also shows that Leibniz is asserting that what is virtual is not inevitable. Something that is necessary *must* be the case, that is, its contrary produces absurdity. A world without Adam, or without an Adam who sins, is hardly absurd. It is not the case that there *must* be an Adam, let alone an Adam who sins. Therefore, just because it is certain that Adam will be a sinner, does not mean that Adam lacks freedom – because it is not necessary that he will sin, it is only certain.

Thus, Leibniz is using this distinction of 'virtual' containment of a predicate as a way of describing how God can know some truth as certain, even if it is not explicitly revealed to (or expressed by) the substance in question or anyone else. This is relevant in response to Russell's claim that, in making God the guarantor of relations, Leibniz has made God the guarantor of superfluous knowledge.[28] If what is virtual is expressed, just not explicitly, then God's knowledge of the reality of relations is loosely akin to understanding an inside joke. The joke itself plays on what is not explicit, but implied and personal. God's knowledge of what makes the inside joke funny for each person is not meaningless knowledge, but it is also not the joke. The joke is enjoyable for its privacy, explaining the inside joke is not humorous. One must 'get' the joke, and while it might be said that God 'gets the joke' of relations in a perfect way, this does not change the fact that the people who enjoy the joke also 'get' the joke without making the humorous elements explicit. This analogy of inside jokes aside, what is clear is that I need to explore the possibility that some qualities remain virtual while what is virtual is also (non-explicitly) expressed.

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[28] Russell, 14-15. The passage that Russell is referring to is from a letter to Des Bosses: "God not only sees individual monads and the modifications of every monad whatsoever, but he also sees their relations, and in this consists the reality of relations and of truth." GP II 438 (AG 199) [1712]

<u>The Logic of the Virtual</u>

There is much more to Leibniz's account of freedom with respect to contingency and necessity, but those arguments do not immediately pertain to relations. What does pertain to relations is this notion of virtual containment (as was discussed above when Leibniz states that everything that will happen to a subject is "contained virtually" in the nature of the subject) that leads to explicit relational predication. While 'sinner' is a predicate that does eventually become explicit for Adam, and likewise 'king' becomes explicit for Alexander, it is unclear if everything that is virtually contained must become explicit for the subject, or if becoming 'explicit' is the only way the virtual can be expressed. Abdul Muhit argues that what is virtually contained in a substance is simply a predicate that human rationality cannot determine or perceive because "finite minds cannot determine the 'virtual' presence of a predicate in a subject since this would require a completed infinite process. So, such propositions are contingent for us, though not for God. God alone can complete this infinite analysis 'in one stroke of mind'."[29] Muhit is arguing that any given contingent truth (which all relations and predicates of existing things are) requires an infinite analysis to fully understand. What is virtually contained in a subject is what cannot be found in the subject except through infinite analysis (so long as the predicate remains virtually contained). All substances can determine through reasoning or experience whether or not a contingent truth (for the purposes of this argument, a predicate) is a truth of fact. However, seemingly no substance can determine through reasoning or experience that what is virtually contained (insofar as it remains virtual) is true; only God can do this. Bertrand Russell understood Leibniz's claim about relational truth being evident only to God but does not connect this to the possibility that a relation is the virtual foundation for relational predicates. If the

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[29] Abdul Muhit, "Leibniz on Necessary and Contingent Truths," p.129. (July 2010 - June 2011)

virtual does serve as such a foundation, then the existence of relational predicates are the result of virtual relations. The human mind's inability to make this virtuality fully explicit does not reduce the validity or reality of relations. Now to be clear, when I say, 'a relation', I do not mean the relational predicates that were discussed in the previous chapter. Rather, I mean a relation that would hold equally well of multiple substances. It is relations in this sense which God is the guarantor of, according to Leibniz.[30] Therefore, it is reasonable to consider relations as virtual. However, for relations, what is virtually contained will never become fully explicit.

Additionally, while Leibniz is clear that relations cannot be in multiple substances at once, is it possible for the same *virtual* foundation for relational predicates to be in multiple substances? That is, do Helen and Paris both virtually contain the same foundation that produces the relational predicate 'lover of Paris/Helen'? I have found no explicit instance of Leibniz discussing virtual relations nor the role that the virtual plays in the production of relational predicates. That said, I understand Leibniz to be using the 'virtual' as one (of many) means of getting around the issue of formal identity.[31] If every monad were to explicitly represent the entire universe identically (which would have to be the case in order for there to be no deficiency in the representations of the universe by different monads) then there would be no discernible difference between any monads – they would be identical in all facets. That is, while both Paris and Menelaus may be described as a 'Lover of Helen', this hardly makes Paris and Menelaus identical. Sharing one, or even many, predicates does not make two subjects identical, but if two subjects both represented the entire universe in the *same* way, then this would mean that they were identical. Yet, Leibniz is clear that each monad represents the universe distinctly, these

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[30] See: GP II 438 (AG 199) [1712], C 19 (Parkinson 98) [1686], A.vi.6, 265 (RB 265).
[31] C 362 (LP 53). [1686]

representations differ in terms of clarity and distinctness of what they represent. This does not mean that monad A represents the world more distinctly in any holistic sense in comparison to monad B. Rather, every monad represents the various aspects of the world *differently*. Something that is clear and distinct for me about a football game might not be clear for my friend, and likewise another aspect of that same game might be more clearly and distinctly known for my friend than it is for me. Nevertheless, I *do* still represent my friend's understanding of the football game, but my friend's understanding is very confusedly represented by me. This example becomes even clearer if my friend and I are actually playing in the game and have different roles to perform during a play. We may both understand the play clearly, but not in precisely the same way since we are performing different tasks during the play that correspond to our different positions. That said, insofar as we can be said to really understand the play, we also both understand (i.e. represent) what the other is doing during the play, even though this understanding is less clear. On a larger scale, my representation of different aspects of the world may be so confused that I am not even aware of my representation of it.

Despite this lack of clarity, Leibniz is clear that all monads do represent the entire universe. Yet, no monads are identical because the perspective of each, which affords different degrees of representation, keeps their identities distinct. Given this, it is necessary to consider Leibniz's claims in his logical *Inquiries:*

> Let there be a term A and a term B: if for each of the two a definition is substituted, and for any constituent term another definition, until one arrives at primitive simple terms; if, moreover, there appears in the one what appears in the other, i.e. what is formally the same, A and B will therefore be 'coincident', *virtually the same*.[32]

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[32] Ibid. my emphasis

It does not seem like much of a stretch to say that any two monads are therefore virtually the same insofar as they represent the universe. Leibniz's claim that all monads mirror the universe and that monads therefore suffer no lack seems to provide even more evidence that monads are coincident (i.e. virtually the same) in their mirroring of the universe; "'A coincides with B' if the one can be substituted in place of the other without loss of truth."[33] There is no loss of truth between considerations of the universe from monad A's representation of it as compared to monad B's representation. Examples of statements that are virtually the same, taken from the *Inquiries,* are 'Alexander the Great' and 'the king of Macedonia who conquered Darius', likewise, 'triangle' and 'trilateral' are also virtually the same. These propositions are different ways of saying the same thing just as monads are different expressions of the same world.

As Hector-Neri Castañeda explains, "A composite term seems to have, thus, a *Gestalt* or epiphenomenal core that keeps it apart from its analysis, but does not preclude them from coinciding in a very intimate way."[34] What Castañeda means by "composite term" is simply a combination of terms such as 'Alexander the Great', which is a composite of three terms, and is virtually the same as the composite 'the king of Macedonia who conquered Darius', which is a composite of seven terms. Despite their compositional differences, both of these statements can be reduced to A ('Alexander the Great') = B ('the king of Macedonia who conquered Darius') because the cores of these composite statements are coincident, i.e. virtually the same. What Castañeda is emphasizing here with his notion of a gestalt core is not simply that A implies B and B implies A, but that A contains C and B contains C, with 'C' here representing the gestalt core, or in this case the subject, that both statements express equally but differently. This equal but different expression makes these two statements virtually the same. That is, they are *virtually*

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[33] Ibid.
[34] Castañeda, "Leibniz's Concepts and their Coincidence *Salva Veritate,*" 391-2. (1974)

the same because what each statement *virtually contains* is the same, even though it is explicitly expressed differently in each case. However, it should be noted that while I agree with Castañeda's explication of this coincidence, I do not see, as he does, Leibniz drawing a strict distinction between formal and virtual identity.[35] If anything, I understand Leibniz to be quite clear that wherever there are two terms that are formally the same, they are also therefore virtually the same and coincident.[36]

It appears that the 'virtual' in this case of coincidence is operating differently from the virtual in predication. However, it is worthwhile to dig a little deeper into Leibniz's claims in his *Inquiries* to see if these really are completely distinct usages of 'virtual', or if there is some common thread. In discussing the fact that every true proposition is provable, Leibniz again makes use of the virtual, this time discussing virtual *coincidence* of terms. Leibniz claims that true propositions can be proven to the extent that they can be reduced to axioms, this is easy for necessary truths but difficult for contingent ones;

> It is a question whether the data of experience can be analyzed into others *ad infinitum,* and (without reference to data of experience) whether it is possible for some proof to be such that it is found that the proof of the proposition always presupposes the proof of another, which is neither an axiom nor a definition, and so needs proof again. Hence it is also necessary that some incomplex terms can be analyzed continually in such a way that one never arrives at terms which are conceived through themselves. Otherwise, when the analysis has been completed, it will appear whether the virtual coincidence becomes formal or express [*expressa*], i.e. whether a reduction has been made to an identical proposition.[37]

In this paragraph, the 'virtual coincidence' is between the axiom at the 'end' of the infinite analysis and the contingent proposition. Since there is no 'end' to an infinite analysis, it is never

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[35] Ibid. 391
[36] C 362 (LP 53) [1686]
[37] C 373 (LP 63). [1686]

clear to human minds whether the truth of the proposition is only formal, or if it is "express".

This express, or explicit, coincidence seems to be something like A=A, in other words,

something necessary. Formal virtual coincidence, though, requires perspicacity to recognize, i.e.

one must be aware of the fact that Alexander the Great is also the king of Macedonia who

conquered Darius, in order to recognize the coincidence.

This much largely lines up with what Leibniz claims in *The Nature of Truth,* wherein he

states, "the notion of the predicate is in the notion of the subject, either expressly or virtually;

expressly in the case of an identical proposition, virtually in the case of any other."[38] However,

this distinction poses a bit of problem: what is the difference between two propositions that are

'virtually the same' and two propositions that are 'identical'? I think that Leibniz is framing

identicality in a more complex way than necessary truths. My reason for thinking this comes

from the fact that following this distinction between express and virtual notions, Leibniz invokes

the principle of sufficient reason, stating, "*nothing happens for which a reason cannot be given

why it should happen as it does rather than otherwise*."[39] I believe that Leibniz is returning to

this principle in order to show that an express notion has a clear connection to its reason. The

term I would use to describe this kind of connection is *isomorphic*, because when two

propositions are isomorphic it means that the inversion of the one proposition produces the

other.[40] An example of this would be the logical reduplicative: Paris is a lover of Helen and, *eo

ipso*, Helen is beloved by Paris. My reason for associating reduplicatives with these express, or

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[38] C 402 (MP 94). [around 1686]

[39] Ibid.

[40] I was first exposed to the use of these terms in relation to Leibniz's work on *Analysis situs* through Soshichi Uchii's short pre-print article "Leibniz's ultimate theory" (2017) through the Philosophy of Science Archive: http://philsci-archive.pitt.edu/id/eprint/12787. While I was exposed to this terminology in relation to Leibniz through Uchii's article, my application of these terms is my own.

identical, notions comes from Leibniz's own comments about reduplicatives later on in *Nature of Truth*:

> Now that we understand that every proposition is either true or false, and that every proposition which is not true of itself, or immediate, can be proved *a priori*, it follows that we should state the method of proof. This is contained above all in the axiom: *without loss of truth, the predicate can be put in place of the subject of a universal affirmative proposition, or the consequent in place of the antecedent of an affirmative proposition, in another proposition where the subject of the former proposition is the predicate, or where the antecedent if the former is the consequent*. But we must except reduplicative propositions, in which we state of some term that it is so strictly expressed that we refuse to substitute another for it; for these propositions are reflexive, and in respect of our thoughts are like material propositions in respect of speech.[41]

I quote this passage at length because it is necessary to see how Leibniz is asserting a connection between principle and conclusion (antecedent and consequent). There is a virtual coincidence, or a virtual expression of the one in the other to the point where they are "virtually the same" if the one can be substituted for the other without loss of truth. To clarify, if I write 'Alexander the great is the king of Macedonia who conquered Darius', it becomes clear that I could also write 'The king of Macedonia who conquered Darius is Alexander the Great', without any loss of truth. However, just knowing one of these notions does not, through inversion, assert the other notion. Therefore, instead of being isomorphic, these expressions are *homomorphic*. Two notions would be homomorphic if they express the truth of something in two different ways. These different instantiations would not be identical and could not produce one another through inversion, but they would share something like the gestalt, or epiphenomenal core, that Castañeda describes.[42] Another way of describing a homomorphism is to say that the two notions are *congruent*, that is, similar but not identical (i.e. virtually the same). The point of explaining

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[41] C 403 (MP 94-5).
[42] Castañeda, "Leibniz's Concepts and Their Coincidence *Salva Veritae*," 391-2.

this principle is to show that an isomorphic proposition like 'Helen is beloved by Paris' is the sufficient reason for my understanding that likewise 'Paris is the lover of Helen'. However, this understanding, as Leibniz points out, is far too strictly expressed for it to be a relation and is instead only reflexive inference.

At this point, it must be conceded that the coincidence of 'Paris loves Helen' and 'Helen is beloved by Paris' is *not* much of a relation at all. From the perspective of Paris there is no understanding of Helen as a subject, she is only the object of his affections. This is a solipsistic obsession rather than an intimate relation. Announcing "I love you! And you are beloved by me!" does *not* institute the relationship 'lovers'. However, in terms of explicit expression, this is all Paris can do. That is, such statements are the most clearly and distinctly known, whereas a statement that implies a relationship is always less clearly and distinctly known because it requires another person for it to be the case. Only hearing Paris profess his love is not enough for Helen to understand this as certain evidence of a loving relation between herself and Paris. Even if Helen responds with a similar statement, this still does not indicate to either Paris or Helen that they share the same relation of love. It's possible that Paris is only pretending to be in love, or that Helen intends a different definition of love than what Paris understands it to mean. While the two of them might accept that this is a loving relationship, neither would *know* for certain.

In the same way, if I overheard my friends laughing at something that was not obviously funny, I might assume it was an inside joke. The resolution to this uncertainty seems clear: ask those involved to explain the relation, or joke, to me. However, as was stated last time, the explanation will not suffice to make me laugh at the joke nor will it allow Helen or Paris to conclude with total understanding the nature of their loving relationship. Now, Helen and Paris might feel quite certain that they are sharing a loving relationship, but the limits of what can be

made explicit make it impossible for either of them to know, or make known, this with certainty. What Leibniz shows with logical reduplicatives is that while a relation can be explained, the relation itself is also lost in doing so. Why? To explain this, it's helpful to consider Robert Adams' discussion of Leibniz's account of indefinite shapes.

Adams draws attention to Leibniz's claim that finitely complex shapes are not even "entirely real… outside of thought". This means finite shapes exist *only* in our mind. Adams' admits that this paints the picture of an idealist (by its the standard definition) account of shape, but he also picks up on the fact that it is not just abstractions of shape, but *all* shapes that Leibniz treats as ideal; "The conclusion that I think Leibniz draws is not that real shapes are infinitely complex…Rather, he concludes that shape as such [i.e. determinate] is only a phenomenon."[43] Therefore, it is not just my perceptions of shape that cannot exist in the world outside of my mind; shape itself is a mental imposition. Some might take this to only further indicate that Leibniz is a standard idealist – if all shape is ideal and not just abstractions then there is no shape at all outside of thought.[44] However, two things should be acknowledged: 1. Only finitely complex shapes (i.e. representations of shapes) lack reality outside of thought. Leibniz never claims that infinitely complex shapes lack reality; he asserts only that an infinitely complex 'shape' would not be properly understood as shape at all (nor properly *understandable* at all) because the abstraction known as 'shape' is always determinate. 2. If infinitely complex shapes do not lack reality but *are* ideal then it stands to reason that Leibniz is understanding ideal in a unique way. It is precisely what is only thinkable as abstract that is ideal. Abstractions are quite

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[43] Adams, *Leibniz*, 230.
[44] When I say 'standard idealist' I mean the definition of an idealist that was developed after Leibniz's death. In the next chapter I will examine Leibniz's own understanding of the ideal and argue that it is at odds with this definition. I am refraining from going into too much detail now because the ideal in Leibniz's thought is too much to address in any sufficient way within this chapter on the virtual.

easy to think of, and they do provide limited understanding, but they are not comprehensive. As I understand it, Leibniz describes contingent existents as 'ideal' because they are also only finitely comprehensible for human minds. Contingent existents lack a sufficient reason for existing in themselves, so any analysis that is limited to the contingent existent itself will necessarily be infinite and thereby incomprehensible.

That said, a rough understanding of contingent existents is entirely achievable but, to accomplish this, the contingent thing in question must be understood in an abstract way, i.e. as finite. So far, this all lines up quite well with what Leibniz has said about relations: it is perfectly fine to say that two people are related in a certain way. However, this hardly explains the whole story of that relation, and relations are therefore ideal because they can be understood only abstractly. According to Adams, Leibniz does suggest (with regard to shape) that an infinite series of increasingly complex shapes will end up expressing the reality of a shape "more and more adequately".[45] Yet, as Adams explains, this increasing adequacy will never reach a conclusion because "Every shape in the series... will still be only finitely complex, and for that reason among others will still be only an appearance, qualitatively different from the reality expressed, which is infinitely complex and does not have a shape at all."[46] Leibniz's theorizing amounts to claiming that 'shape' itself is an inadequate understanding because it is an abstraction of the infinite complexity of the world.

What I think is important to pull out of this is that any shape, since it would be abstract, is ultimately not representative of real 'shape' at all. By way of extended metaphor, any explanation of an inside joke is no longer funny. Moreover, and more relevantly, any reduction of relations via a system of logical reduplication does not arrive at a relation. The logical

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[45] Adams, 230.
[46] Ibid.

reduplicatives operate like abstractions of shape. Explaining a relation in terms of relational predicates is like understanding the world as composed of determinate shapes. Paris and Helen may agree that they are lovers, but if one were to ask Helen to explain her love, the only thing she could explain *with clarity and distinction* is that she loves Paris and that therefore he is beloved by her. Yet what is *expressed* in Helen's relation to Paris is more than what she (or Paris) can make explicit. It is this virtual coincidence that truly provides the congruence of a relation. This is not something one can give an account of because it is not something one can ever know clearly and distinctly. I am choosing to name that limitation in a positive way as *intimacy*. I see positivity in this limitation precisely because the limitation is the mark of congruence rather than continuity. This means that while Helen and Paris' accounts of their relation are not identical, they are *virtually the same* and therefore *formally coincident*.

For human minds, Leibniz claims that the proofs of contingent truths are always unknowable, and uses the example of asymptotes to express this fact:

> We can prove that some line – namely, an asymptote – constantly approaches another and (also in the case of asymptotes) we can prove that two quantities are equal, by showing what will be the case if the progression is continued as far as one pleases; so human beings also will be able to comprehend contingent truths with *certainty*. But it must be replied that there is indeed a likeness here, but there is not a complete agreement. Further, there can be relations which, however far an analysis is continued, will never reveal themselves sufficiently for certainty, and are seen perfectly only by him whose intellect is infinite.[47]

Through his analysis of logical reduplicatives, Leibniz attempts to display this asymptotic quality in relational predicates. That is, relational predicates only 'approach' one another but they are still only reflexive, or isomorphic, because the human intellect can analyze them only to a

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[47] C 389 (LP 77-8) [1686] my emphasis.

limited degree. Just as with shape, more and more adequate understandings are possible to generate, but they will never be perfect understandings.

The *Analysis Situs*

If I am going to be discussing relations in terms of congruence and virtual coincidence, then I need to address Leibniz's *analysis situs* project. In addition to clarifying technical terms, the writings on *analysis situs* also explain how a 'situation' is the result of a totality of relations. In this way, to use Leibniz's terminology, situation is constituted by these relations but not composed of them.[48] I understand this constitution to be *virtual* and that an understanding of this production is necessary for my understanding of Leibnizian relations. It should be admitted from the outset that this section will hardly be a comprehensive engagement with the *analysis situs*.[49] However, given that Leibniz's *analysis situs* revolves around considerations of congruence, it is necessary to address it in order to fully show how large of a role congruence plays in Leibniz's philosophy.

Leibniz, when introducing his situational analysis, says in a letter to Huygens that he has "discovered elements of a new characteristic which is entirely different from algebra and which will have great advantages in representing to the mind, exactly and in a way faithful to its nature, even without figures, everything which depends on sense perception."[50] Leibniz notes that algebra is an excellent system for considering *magnitude* but, as I understand him, Leibniz recognizes that what is needed is a more rigorous account of quality. Leibniz considers three basic relations in his situational analysis: equality, similarity, and congruence.[51] Equality applies

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[48] GM VI 370
[49] As noted in the previous chapter, for a more thorough treatment of this topic see Vincenzo De Risi's *Geometry and Monadology*.
[50] GM II 20 (L 249-50) [1679]
[51] GM V 178-9 (L 254-5) [c.1679]

to figures with identical magnitudes, whereas figures are deemed similar if they have the same "form".[52] Essentially, things are equal if they are isomorphic, and similar if they are homomorphic. Congruence, for the time being, will remain enigmatically defined as "the combination of equality and similarity".[53] The more immediate task at hand is to fully grasp what Leibniz means by equality and similarity.

Leibniz straightforwardly claims that similarity, insofar as it is assessing quality rather than quantity, can determine whether two things are similar just by presenting them to the mind.[54] Quantity, however, can only be determined to be equal if both things considered are present together.[55] Leibniz himself gives two examples of this, with the second one building upon the issues present in the first. Leibniz's example is of two temples. These two temples are "everywhere the same" in terms of design, material, and so on – except for the fact they differ in magnitude.[56] In other words, I walk into Temple B and it looks identical to Temple A, and it is, except for the fact that everything is 1% smaller. Such a small degree of difference will hardly be noticeable to my senses, and it is impossible to be in both temples at once so that I could observe the difference in magnitude. What I could do, though, is utilize a measuring instrument that would make 'present' the same notion of size that evaluated temple A. However, Leibniz does not determine the exact degree of difference in his example and he seems to realize that, even if one did not have measuring tools, one's bodily senses would quite easily notice this difference in magnitude, if Temple B were 50% smaller than Temple A. In this scenario, I would not need any measuring instrument to notice that these two temples are unequal expressions of magnitude.

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[52] Ibid.
[53] Ibid.
[54] Ibid, 179 (255).
[55] Ibid.
[56] Ibid, 180.

Simply using my body as a point of reference more than suffices. Anticipating this critique, Leibniz runs through the example again with all the same parameters except this time the spectator of the temple is a disembodied mind:

> But if you consider the spectator only as a seeing mind concentrated at a point as it were, without any magnitude about him, either really or in his imagination, and have regard only for those aspects of things which the intellect can follow, such as numbers, proportions, and angles, no distinction will appear. These temples are therefore called similar, because they can be distinguished only by being observed together, either directly with each other or with a third something, but it is impossible to distinguish them singly and when seen by themselves.[57]

Therefore, Leibniz's notion of similarity which is based on an evaluation of *quality* is a notion developed through the mind's consideration of (at least) two different things *without* considering their magnitude. In this case, though, if the mind can only evaluate the temples based on their qualities, then the two temples are understood as identical rather than similar.

Now, any two things that differ solely in terms of number, i.e. magnitude, must violate the principle of the identity. However, Leibniz's claim in the above passage seems to be that even the "things which the intellect can follow" do not provide minds with the ability to discern similar things without simultaneous perception. Our senses and understanding give us an account of the world whereby much of what we encounter *seemingly* violates the principle of identity. Likewise, a consideration of only formal qualities leads us down a similarly dangerous path because, without magnitude, there is no way for the mind to discern similar things clearly and distinctly. All the mind can clearly and distinctly produce is an *abstract* understanding. This abstract understanding is not wrong, but it is also not comprehensive.

Therefore, a comprehensive distinguishing of two things that are similar requires an understanding of the generation of this abstraction by means of their *congruence*. However, it is

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[57] Ibid.

entirely unclear how one should understand congruence to be operating in this instance since Leibniz does not mention 'congruence' again in this short text after giving his definition. From my previous chapter, it can be recalled that Leibniz defined congruence as the superposability of two distinct things. What is odd, then, is that congruence, which is a form of similarity, is also Leibniz's method of providing distinction when quality and quantity fail. In one of Leibniz's writings on the geometric characteristic, Leibniz writes: "What is perceived when two points are simultaneously observed is a *straight line*, that is, the path of a point."[58] Immediately, it is interesting that Leibniz is asserting that congruence generates something distinct. It should be noted that Leibniz does not actually call this 'generation' or 'production'. However, I think that the mind's conclusion of a line given the observation of two points should be understood as a productive constitution. I also want to point out that Leibniz's language here when discussing the constitution of a line via points aligns perfectly with the language of *concogitabilitas* (co-thinkability) that Leibniz associates with relations: "A relation is an accident which is in several subjects and is only a result and supervenes without change made on their part when several things are thought of simultaneously: it is *concogitabilitas*."[59] A relation, then, seems to supervene upon subjects in the same way that a line supervenes upon two points. While thinkers like Cover, O'Leary Hawthorne, and Mugnai have all discussed Leibniz's theory of relations as a theory of supervenience, I do not see any of them discuss how supervenience requires coincidence.

What I mean by this is that Leibniz is claiming that a coincidence occurs when the differences between two subjects are so similar that an abstraction that would produce distinction

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[58] Leibniz, *La caractéristique géometrique,* p.228 [c. 1679] (translation taken from Arthur, *Leibniz,* p.156-7).

[59] A. VI. 4. 866 (translation taken from Mugnai, "Leibniz's Ontology of Relations," 182) [c. 1686-1696]

is impossible. Such a similarity would occur if there is a combination of equality and similarity, per Leibniz's definition of congruence. More importantly, though, given that Leibniz is asserting that there *is* still a difference, this difference must lie in the non-explicit, or virtual, aspects of the two subjects. The line is not *in* the two points, nor is the similarity *in* the two temples in Leibniz's examples. The similarity, or coincidence, leads to a shared situation, that is, congruence. However, this situation is only similar but not identical.

This foundation of coincidence is critical for any understanding of congruence, and therefore, any understanding of situation. Leibniz's acceptance of Euclidean claims (that points are the extremities of lines and that a straight line may be drawn between any two points), in addition to Leibniz's own claim that a line is generated through the thinking-together of two points, allows Leibniz also to claim that space is constituted by points, but not composed of points.[60] Therefore, space, which is truly situation for Leibniz, is what is understood through a simultaneous knowledge of (at least) two points. The very *relation* between those points *is space*. This clarifies what Leibniz means when he says that "all the points in the world are congruent to each other; that is, one can always be put in place of another."[61] The congruence of all points is space, but space is not made up of points. This interchangeability of points in space is interesting though, because one might assume that this interchangeability of points equals identity among points. However, Leibniz is claiming precisely the opposite. Leibniz discusses the coincidence in terms of 'agreement', and there can be no agreement without difference. To make use of the temple example again, the interchangeability of situation relies on the fact that both the abstracted notions of explicit quality in both temples and quantity in both temples are so similar

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[60] GM VI 370 [1695] and Euclid, *The Thirteen Books of Euclid's Elements*, 1d3 and 1post1 (trans. T.L. Heath, 1908)
[61] GM II 23 (L 252) [1679]

that it is easy to mistake them for being the same. However, these explicit similarities are truly only the result of the virtual activity that never becomes explicit or capable of abstraction.

Congruence, therefore, is the recognition of the fact that some relations occur among points which can seem identical given our standard modes of evaluation. However, an understanding of the production of congruence reveals the distinctness of each subject. As I understand it, congruence is produced by the virtual coincidence of multiple subjects observed as a shared situation. Rather than unify these coinciding subjects, what congruence does is acknowledge the similarity of situation, while also maintaining irreducible distinction and demonstration of what is virtually included in those subjects. However, while all of this is important for relations, it is perhaps more important for my current analysis of the virtual.

What is the value of this for my project? If I were looking at Paris and Helen, I might conclude that they were lovers, that is, I might recognize a shared situation. This is fine, so long as I understand that sharing a situation only means that Paris and Helen share *similar* explicit expressions of love for one another rather than *identical* relations. Each of their expressions of love are only congruent because of differentiated expressions of an underlying virtual coincidence, but it is also this virtual coincidence that is productive of their unique explicit expressions. The points are not in the line, but the line is generated through simultaneous knowledge of both points. Likewise, the 'shared' situation is not in Paris or Helen but is a kind of congruence produced by their differences. I consider this valuable because it acknowledges and validates the assertion of a relation – if they are genuinely expressing congruent feelings of love for one another – but also understands these expressions as nevertheless distinctive. Moreover, understanding relations as congruences asserts that there is some aspect of the generation of a relation that always remains virtual and inexpressible. There is some aspect of the relation that

remains unique to the subject in question – something that makes my relations *mine*. In other words, there is something about a relationship that is always *intimate*. This something is virtually expressed in all of Paris' actions with regard to the relation in question and is arguably the foundation of this relation. However, the explicit expression of Paris' relation cannot render this foundation recognizable to Helen, whom Paris is congruent with in this relation, nor to any other subject. This is a limit of relations, and it is this limit that I am understanding as intimacy. The foundation of the relation is the very thing that cannot be expressed; the foundation is the virtual coincidence. The limit placed on expressing that coincidence institutes only *intimacy*, rather than complete unity.

Formal Virtual Coincidence

While I consider the *analysis situs* project profoundly interesting for its insights on congruence (and the role congruence plays in relations), there is much more work to be done regarding a fuller exploration of the virtual in Leibniz as it pertains to his other works on topics such as perception, math and physics. Parmentier tracks the root of the usage of the 'virtual' to its neoplatonic origins, wherein the original term *virtutis* was associated with the generative, sensitive, and rational expression of the soul.[62] The 'virtual' was in this sense the possessing of 'virtue' (or *virtus*) with respect to the active capacities of the soul. However, Aquinas and Duns Scotus approached the virtual from a slightly different perspective with both discussing the notion of "the virtual containment of conclusions in principles."[63] In this sense, Scotus and Aquinas wanted to argue that the conclusions of a given science or inquiry were already virtually contained in the principles which guided such an inquiry. However, I should state from the start

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[62] Parmentier, "Leibniz et le virtuel," 448.
[63] Ibid, 449.

that I think Leibniz's goal is to reject this historical position as too simple, and to argue that conclusions also contain principles.

While this historical view is different from the way Leibniz employs the virtual in his logic (primarily as a means of distinguishing the contingent from the necessary), it is reminiscent of his discussion of the predication of 'sinner' in Adam. However, as Parmentier points out, Leibniz's usage of 'virtual' in his logic extends the scholastic notion of the virtual as a necessary connection between principle and conclusion (that is, an inevitability) into considerations of contingent connections.[64] Leibniz is quite clear in his logical works that something which is virtual is not expressed necessarily.[65] The fact that what is virtual is no longer inevitably expressed has created confusion as to how best to translate Leibniz's usage of 'virtuel'. Since what is not always expressed is often called 'innate' or 'implicit', some have tried to substitute this language into Leibniz's discussion of the virtual.[66] This is fair, so long as one understands the nuanced understanding of 'innate' that Leibniz is developing through his reworking of the virtual. Leibniz's usage of innate, or virtual, knowledge often lines up with the definitions of Aquinas and Scotus insofar as what is innately known can be teased out through the mind's attention to, and understanding of, the principle of noncontradiction.[67] However, Parmentier believes that Leibniz's usage of the virtual imparts a kind of inclination rather than a static latency.

Parmentier argues that Leibniz understands virtual knowledge to be a kind of "cognitive dynamic" that impels our thought.[68] When Leibniz states:

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[64] Ibid, 453.
[65] A.vi.4, 13 [around 1677-79]
[66] E.g., Peter Rembrandt and Jonathan Bennett's translation of *New Essays* translates the majority of instances of 'virtuel' as innate or implicit.
[67] See: A.VI.6, 77 (RB 77), GP IV 451-2 (AG 58)
[68] Parmentier, 459.

And when one wants to think about what is in us implicitly [*virtuellement*], before all awareness, it is right to start with the simplest. For general principles enter into our thoughts, serving as their inner core and as their mortar. *Even if we give no thought to them*, they are necessary for thought, as muscles and tendons are for walking. The mind relies on these principles constantly; but it does find it so easy to sort them out and to command a distinct view of each of them separately, for that requires great attention to what it is doing, and the unreflective majority are hardly capable of that.[69]

What is significant here is that kind of knowledge which is active without being explicit; truly then, this hardly counts as 'knowledge' since no subject would be explicitly aware of it. Virtual knowledge is active *only* as perception, not as apperception. Leibniz is claiming that these principles lead to (some) conclusions even if they are not explicitly analyzed. To put the above statement into relation with his claims in his logical works, it seems that what virtually impels one to act in some way is a formal virtual coincidence (that is, the cause and effect relation would be a formal virtual coincidence) rather than an "express" virtual coincidence (that is, an identical reciprocity, as discussed in the passage from *General Inquiries*). Therefore, it is clear that this virtual expression has a significant impact on us according to Leibniz, to that extent, if relations are virtual they are nevertheless real insofar as they affect us. How do they affect us though? To answer this, it is necessary to discuss Leibniz's *petite perceptions*.

Virtual Perceptions

Leibniz's notion of *petite perceptions* is perhaps one of his more well-known concepts, that being, our apperceptions (cognitive reflections) are the product of an infinity of minute perceptions that are not explicitly represented individually but are implicitly expressed in the composite apperception. Leibniz's go-to example for discussing this relationship between apperception and *petite perceptions* is the roar of the ocean and the multitude of waves which

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[69] A.vi.6, 83-4 (RB 83-4), my emphasis.

compose that roar.[70] However, while this notion of *petite perceptions* is fairly well known,

Leibniz does not explicitly discuss them until *New Essays*. That said, there are seeds of this

concept in many of his writings. Richard Arthur sees the lacuna of *petite perceptions* in Leibniz's

work as early as the 1676 essay "Infinite Numbers".[71] Likewise, Benson Mates sees the notion of

petite perceptions to be the natural extension of Leibniz's claim that nature never makes leaps.[72]

My reasons for pointing out the history of Leibniz's *petites perceptions* is to show that while

they are perhaps not formally introduced until *New Essays* they are still integral to his

philosophy as a whole. Moreover, I think these *petites perceptions* have a formal virtual

coincidence with the apperceptions that arise from them. While these minute perceptions are

never individually explicit, they are like the premises that get suppressed in an enthymeme:

expressed but not explicit. To this end, I think it is fair to say that *petites perceptions* are *virtual*.

These virtual minute perceptions have a real effect on perceiving monads in that they lead

to apperceptions. Parmentier disagrees with this claim and argues that the connection between

the virtual and *petites perceptions* is too thin.[73] However, I would argue that this is because

Parmentier's analysis is limited to investigating a connection between 'virtual memory' in some

of Leibniz's writings as well as discussions of *petites perceptions* in *New Essays*.[74] However, I

think that a more thorough investigation of Leibniz's account of perception yields a stronger case

for the virtuality of *petites perceptions*. Larry Jorgensen, for instance, draws attention to the fact

that Leibniz often defines perception as "the expression of many in one."[75] The many which

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[70] Ibid, 54

[71] LoC, 396, n.1.

[72] Mates, 163. For examples of Leibniz's claim that nature never making leaps, see: GP II 168 (L 515-6) [1699], GP III 634 (L 658) [1715], A.vi.6, 56 (RB 56)

[73] Parmentier, 462.

[74] Ibid, 460-2.

[75] A.vi.4, 1625 [Date unknown] c.f. A.vi.1, 286 (L 91, n.16) [1697-1700], GP VI 598 (AG 207) [1714]

form the one are indistinct in the 'one' which they form. Nevertheless, Leibniz asserts that while these principle perceptions which form the expression may not be explicit, "It is sufficient for the expression of one thing in another that there should be a constant relational law, by which particulars in the one can be referred to corresponding particulars in the other."[76] Leibniz follows this with an example: the relational law of expression between confused perceptions and distinct apperceptions.[77] My understanding is that Leibniz is here inverting the claims about virtuality made by Aquinas and Duns Scotus. That is, for Leibniz, it is the principles that are virtually contained in the conclusions. These 'conclusions' are the 'expressions' of the principle perceptions.

To be fair though, with Leibniz asserting this relational law, he is not denying the claims of Aquinas and Duns Scotus, but I do see him implying that the relation between principles and conclusions is not a one-way street. The principles virtually contain the conclusion, as is the case of the predicate 'sinner' being contained in the nature of Adam, but the conclusion also contains the principles even if they are not explicit, as is the case in perception and the expression of perceptions. The virtual is not simply the containment of a certain predicate, it is the potential for the *production* of the corresponding predicate: a predicate that is an *abstracted* expression of this virtual foundation.

Moreover, it is clear that folds in motion are another aspect of Leibniz's thought that utilizes this same system of mereological implication. What establishes the connection between the lesser enfolded folds and the greater folds that are produced by them is this notion of a relational law: a relational law that is, ultimately, a connection between principle and conclusion;

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[76] C 15 (MP 176-77) [1712], c.f. A. II. 2. 240 (L-A 241) [1687], GP VII 263 [1678]
[77] Ibid, (MP 177).

a virtual connection that implies containment of conclusions in principles and principles in conclusions. To align this with Leibniz's logic, one can say that there is a formal virtual coincidence between the principle and the conclusion. Therefore, as I understand it, it seems that a relational law is the very operation of the virtual. Another description of this law given by Leibniz is, "a certain constant relational law, by which particulars in the one can be referred to corresponding particulars in the other. Thus, a circle can be represented by an eclipse…and indeed by a hyperbola, which is most unlike it, and does not even return upon itself."[78] The relational law between an eclipse and a circle is like an enthymeme – the circle is not fully explicit but is nevertheless represented by the eclipse. One can imagine that such an operation is reversible as well, that is, a circle represents an eclipse and a hyperbola. This virtual predication is a way of maintaining each monad's expression of the whole universe despite the cognitive limits of apperception. It is also important, for the sake of distinctness, that representation be only virtual. If there were an explicit, or as Leibniz calls it, 'express coincidence' between the circle and the eclipse then it would mean that the circle and the eclipse were identical. This is clearly not the case, but it is also clearly the case that circles and eclipses have some connection. This connection is formal rather than express. Therefore, the importance of this operation becomes even clearer: it is not simply about the limits of apperception, it is also about preserving distinctness, and explaining change.

To examine how the virtual coincidence accounts for change, I think it is worthwhile to return to folds in motion. If folds in motion had an express coincidence, then the distinction of 'lesser' or 'greater' folds would be nonsensical. Moreover, if folds were identical throughout, it would not allow for change; if the motion from point A to B were the same throughout, then

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[78] Ibid.

there would be no change in position. This would be an express coincidence rather than a formal virtual coincidence. Instead of this stagnancy of identity, Leibniz utilizes the relational law of a formal virtual coincidence to show a consistent connection between distinct concepts.

What I mean by 'consistent' in terms of a relational law can be explained by examining some of Leibniz's examples, such as expression of the machine by the model of that machine or thoughts and truths by speech.[79] It would clearly be inconsistent to say that the model of a computer virtually expressed, by means of a constant relational law, a refrigerator. That is, not all models express all things. However, they do express those with which they share a virtual coincidence, in the same way that 'Alexander the Great' is virtually coincident with 'the king of Macedonia who conquered Darius'. Likewise, 'Paris loves Helen' is virtually coincident with 'Helen is beloved by Paris' (and vice versa), and the lesser folds of a motion are virtually coincident with the greater fold of the completed motion.

What is particularly interesting to me is the dynamics of what is virtually included. That is, as Parmentier acknowledged, that which virtually coincides also virtually *produces*. The relational connection between lesser folds produces a greater fold, and the examination (unfolding) of a greater fold produces lesser folds. Whether or not Paris ever thinks about it, it is necessarily the case that his predicate 'lover of Helen' is virtually coincident and productive of the predicate 'beloved by Paris' in Helen, and vice versa. What I gather from this relational law is that these virtual relations are *real* insofar as they generate *actual* expressions. However, and here's the beauty of it, this coincidence remains virtual. It is never expressed explicitly by both subjects, and the reason is that while one can say there is a virtual coincidence between A and B if A = 'Alexander the Great' and B = 'the king of Macedonia who conquered Darius', this

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[79] GP VII 263 [1678]

coincidence becomes an identicality if both A *and* B = 'Alexander the Great, the king of Macedonia who conquered Darius'. I find this profoundly important for contemporary understandings of relationships, because while one can acknowledge the reality of a relation between subjects, the autonomy of subjects demands that this can only ever be *explicitly expressed* in a unique and personal way. As Leibniz himself explains in the logical discussions of contingent truth, the human mind's ability to fully express this virtual coincidence is like an asymptotic function: always approaching but never uniting. In recognizing that A = B due to a virtual coincidence with some gestalt core, what is truly being said is that both A and B are homomorphic of a non-explicitly expressed 'C'. It is not just that Paris' love of Helen is indicative of Helen's being beloved, but that Helen's love of Paris, and Paris' being beloved, are all virtually coincident with the non-explicit relation 'lovers.' That is, both A and B can be understood as distinct conclusions of principle C. A and B do not only coincide with one another, they coincide with one another because they coincide with a final term at the 'end' of an infinite analysis.[80] This non-explicit relation is not known clearly and distinctly by anyone, but it is known less confusedly by those who express the relation most clearly. Therefore, it is my continued position that Leibniz is providing a metaphysics, logic, physics, and world, of intimacy. I see this virtual coincidence as intimate because it shows that both subjects are truly expressing the same relation, even if that expression cannot be made explicit in the same way.

To further discuss how the intimacy of relations is made possible by the reality of the virtual's impact on expression, I want to turn to Deleuze's analysis of the virtual in his own examination of Leibniz's system of folds. Throughout this analysis, I will try to use only Deleuze's discussions of Leibniz's conception of virtuality and actuality. To be clear, I will not

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[80] C 373 (LP 63) [1686]

be treating Deleuze's own account of the virtual or the actual in this section, and I will instead be limiting my examination to Deleuze's interpretation and mobilization of Leibniz's notions of the virtual and folds.

<u>Deleuze on the Virtual in Leibniz</u>

Deleuze's discussion of the folds of the soul in Leibniz's philosophy often branches out to discuss notions of folding and mathematics outside of Leibniz's own work.[81] However, Deleuze clearly understands that even though every monad perceives the whole world, not every aspect of the world is expressed by each monad.[82] That is, the world that is *actually*, or *explicitly*, represented by the monad is one which lacks absolute clarity due to the opacity invoked by the distinct perspective of the given monad. Although, Deleuze does not phrase this limit as 'opacity' and prefers to consider this monadic differentiation as derived from the degree of 'inflection', "A soul always includes what it apprehends from *its* point of view, in other words, inflection. *Inflection is an ideal condition or a virtuality that currently exists only in the soul that envelops it*."[83] I take Deleuze to be saying that the world is *inflected* differently in each monad, in the same way that a word can be spoken with a different tone, that is *different inflections*, the world too is expressed differently by each monad.[84] However, if I understand Deleuze correctly, I think that he is claiming that this virtual inflection is *not* what is *explicitly* expressed.[85] What is

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[81] To clarify what I mean here, Deleuze often associates Leibniz's philosophy with other thinkers, such as Cache, Klee, Mallarmé, Whitehead and others. While I think Deleuze is valid in his association of many of these ideas, at times I think he extends beyond Leibniz's own theory when he stretches these associations into elucidations of Leibniz's own project. I personally find this most common in Chapter Six ('What Is an Event?'/'qu'est-ce qu'un évément?') and to a lesser extent in Chapter Two ('The Folds in the Soul'/''les plis dans l'ame').

[82] Deleuze, *The Fold*, pp. 4-5 and 8.

[83] Ibid, 22.

[84] Ibid, 25.

[85] "Because the world is in the monad, each monad includes every series of states of the world; but, because the monad is for the world, *no one clearly contains the 'reason' of the series of which they are all*

virtually inflected in the soul is not always explicitly included. That is, according to Deleuze's

reading, there is an inflection which precedes *inclusion*. The inflection, as Deleuze understands

it, is the "ideal condition", or "virtuality", of the inclusion. Deleuze seems to verify this when he

writes:

> Folds are in the soul and authentically exist in the soul. That is already true for "innate ideas":
> they are pure virtualities, pure powers whose act consists in habitus or arrangements (folds) in the
> soul, and whose completed act consists of an inner action of the soul (an internal deployment).
> But this is no less true for the world: the world is only a virtuality that currently exists only in the
> folds of the soul which convey it, the soul implementing inner pleats through which it endows
> itself with a representation of the enclosed world. We are moving from inflection to inclusion in a
> subject, as if from the virtual to the real [*l'actuel*], inflection defining the fold, but inclusion
> defining the soul or the subject, that is, what envelops the fold, its final cause and completed
> act.[86]

To start, I do not understand why Tom Conley, the translator, changed *l'actuel* to 'real' in the

above passage, as this distorts much of what I think Deleuze (and Leibniz) are arguing about this

virtual inflection becoming inclusion. If one reads the line as "from inflection to inclusion… as if

from the virtual to the actual", this retains the potency of the act, that is, the dynamics of the

virtual inflection. Deleuze is capturing something here that must be explained: what is the

inflection that defines the fold? The inflection is the monad's *internal principle*, it is what acts *as*

appetition, but it is not the appetition itself: "The action of the internal principle which brings

about the change or passage from one perception to another can be called *appetition*; it is true

that appetite cannot always completely reach the whole perception toward which it tends, but it

always obtains something of it, and reaches new perceptions."[87] As I understand it, the appetition

a result, and which remains outside of them, just like the principle of their accord" (Ibid, 26, my
emphasis).
[86] Ibid, 23 (*Le pli* 31-2).
[87] GP VI 609 (AG 215) [1714]

itself determines the degree of inclusion. The appetition is affected by perceptions of *everything* but is directed toward, or grasps, some perceptions more than others. The perceptions that are most fully obtained become *apperceptions*, which is to say, explicitly included. That which is apperceived is explicit, but not everything that structures the apperception is explicit in the apperception. Much of what constitutes the apperception is only virtually expressed, like the missing premiss in an enthymeme. The world then, which is the totality of all other monads, is only inflected in the monad. The world in monad A is virtually coincident with the world in monad B, but it may well be the case that monad B is only virtually expressed (like the missing premise in an enthymeme) in monad A's explicit representation of the world. The virtual, i.e. complete, world is then to some extent the lesser fold which is enfolded within the greater fold of the world as it is explicitly included by a monad. The virtual incites production and is included in the production but is not completely explicit in the production.

Therefore, this *actual* production, or inclusion, is based upon a virtual representation of the world. As Deleuze writes:

> The world must be placed in the subject in order that the subject can be for the world. This is the torsion that constitutes the fold of the world and of the soul. And it is what gives expression its fundamental character: the soul is the expression of the world (actuality), but because the world is what the soul expresses (virtually).[88]

In this way Deleuze, without explicitly addressing it, does an excellent job of capturing the way Leibniz is reconceiving the idea of virtual inclusion supposed by Aquinas and Duns Scotus. The relation between subject and world is the same relation that Leibniz is implementing as the virtual coincidence between principle and conclusion. Therefore, the world as it is 'contained' in each monad is, for the most part, contained virtually, but the world as it is apperceived is actual.

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[88] Ibid, 26.

Deleuze's claim in the above quote, though, is that the folds of the soul are ways in which the soul inflects or includes the world within it as actual. What this would mean is that a relation like 'Paris loves Helen' (and by extension, 'Helen is beloved by Paris') is *virtually* contained in *every* monad, but it is *actualized* to different degrees. Some monads might only express it to the degree that they are aware of these two individuals, Helen and Paris, and that these individuals claim to be in love; some (perhaps the family and friends of Helen and Paris) might have unique opinions on this relation, whereas some subjects might have no explicit awareness of this relation at all. The difference of 'degree' is the difference of the degree of *clarity and distinction* with which one represents the relation in question. Furthermore, the relation "Paris and Helen are Lovers" is never explicitly expressed by any subject (that is, never known with a high enough degree of clarity and distinctness that it can be said with certainty), but, I would argue, this relation is virtually expressed by the explicit relational predicates as that which provides part of the foundation for those predicates.[89] However, as Leibniz notes in *Discourse on Metaphysics,* this virtuality is not divorced from truth;

> And it is true that we are maintaining that everything that must happen to a person is already contained virtually in his nature or notion, just as the properties of a circle are contained in its definition; thus, the difficulty still remains. To address it firmly, I assert that connection or following [*consécution*] is of two kinds. The one whose contrary implies a contradiction is absolutely necessary; this deduction occurs in the eternal truths, for example, the truths of geometry. The other is necessary only *ex hypothesi* and, so to speak, accidentally, but it is contingent in itself, since its contrary does not imply a contradiction. And this connection is based

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[89] In which case, the relational predicate 'Lover of Helen'/'Beloved by Paris' is only an abstract denomination that is derived from the virtual relation "lovers". However, when Paris asserts the he and Helen are lovers, he does this with far less clarity and distinctness than he does when he claims he loves Helen and she is beloved by him. Paris's attempt to express this relation of 'lovers' only *intimates* the virtual relation rather than explicitly express it with clarity and distinctness.

not purely on ideas and God's simple understanding, but on his free decrees and on the sequence of the universe.[90]

Admittedly, my reading of this passage does go a bit beyond Leibniz's explicit statements. Leibniz is here explicitly stating only that every event has its inception as a virtual predicate for the substance in question.[91] My claim is that this means that a virtual predicate is truly said of a substance, even if that substance is not explicitly expressing said predicate at the time. However, these connections between virtual predicates and explicit predicates are contingent insofar as they rely on the "sequence of the universe". This is reiterated in one of Leibniz's responses to Arnauld where he writes, "every present state of a substance is a consequence of its previous state."[92] I see these statements as reinforcing two of my claims: 1. That Leibniz is utilizing the connection between principle and conclusion as mutually productive of one another, that is, an examination of the conclusion will disclose the principles and an examination of the principles will disclose the conclusion, despite the fact that the principle and the conclusion are not identical. And 2. A predicate that is only virtual at one point but becomes explicit at another point is truly denominated of that substance at *any* point. This is part of why God truly knows Adam is a sinner before Adam explicitly sins.

Assuming these two claims are valid, I conclude that, even if something that is virtually contained never becomes explicit for a substance, it can still truly be said of that substance. Leibniz never describes relations (something shared between multiple substances, i.e. 'two-

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[90] GP IV 437 (AG 45) [1686]

[91] I am trying here to use the term 'event' in the least charged way: I mean only that any change or occurrence in the substance is first virtual before it is actual.

[92] GP II 115 (LA 247) [1687], though, it should be noted, Leibniz makes similar statements about the series of internal causation in almost all his philosophical writings about substances/monads. I'm simply noting this quote as it is a response to Arnauld with respect to sections from *Discourse* to show consistency.

footed') as predicates.[93] One of the reasons for this is that relations, properly speaking, are always virtual. Yet, these virtual relations are the *principle* for the relational predicates that substances *do* explicitly express (such as 'lover of Helen'), that is, the conclusions. These principles and conclusions are far from identical, but I have shown that they are formally coincident. This is also where what is only intimate about relations starts to become apparent: the relation proper cannot be explicitly expressed in its fullness. The only aspect of the relation that is fully expressed is the solipsistic aspect – what the relation is for me. This aspect of the relation is all that is clear and distinct. The intimacy of the relations lies in the permanent obscurity of the relation.

To be clear, though, it is not simply that obscurity equals intimacy. If that was the case, then I would have a more intimate relation with people I have yet to even meet than I do with my closest friends and family. What I am trying to articulate as intimate, but obscure, is the degree of certainty about what one does not know. When it comes to a stranger, they are obscure to me to such a degree that I do not yet know what I do not know about them. However, when it comes to one of my close friends, I understand with greater clarity the limits of what I can never know about them. More than this, though, with this greater degree of clarity I also start to apperceive some things about my friends that are not explicitly expressed by them, nor entirely clearly perceived by me. For instance, I may be able to tell that something is bothering my friend but not be entirely sure why I can tell this, nor can I be sure (just from these apperceptions) what is bothering them. In my opinion, the language of Leibniz would render such apperceptions as relatively confused and, therefore, obscure. What I think is important is that there is no relationship that resolves all confusion or obscurity. I appreciate Leibniz's theory of relations

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[93] GP VII 401 (AG 338) [1716]

particularly because it provides a schema for understanding why this limit of clarity in relations exists. Moreover, rather than couching this limit inside a solipsistic world, I see Leibniz utilizing congruence in relations in such a way that I think what he has done is provide a way of understanding the limits of relations and relational knowledge as productive of, and produced by, intimacy. Lastly, as I will show in the following chapter, it is this quality of permanent obscurity that most properly defines what Leibniz understands to be 'ideal'. However, my point throughout this project has been to show that for Leibniz, this ideality and virtuality does not equal fantasy or falsity.

Consider again the discussion of fractal geometry from the first chapter; fractal recurrence is always a recurrence of the same, but it is also non-differentiable. A geometric shape that fractally repeats is producing the 'same' shape infinitely. However, the repeated shape is hardly identical to the lesser fractal representation. In Samuel Levey's terms, this repetition of the same is nevertheless non-differentiable. When a function *is* differentiable, this means that it is continuous; however, when a function is non-differentiable, it is discontinuous. While a curve may change its direction, if one were to 'zoom in' on a portion of this curve, the curve would appear as a straight line. However, no matter how much one 'zooms in' on a fractal shape, there will never be a simple continuous straight line. Whereas the repetition of a differentiable function may produce change, this change can also be reduced to the constancy of a straight line. The changes that occur in fractal geometry are perhaps *consistent* but never constant. This recurrence is infinite and not identical. Of course, such an infinite is properly understood as syncategorematic, given that it is unending. As Deleuze understands it, this is the shift from an object materialism to an 'objectile' metaphysics: "The new status of the object no longer refers its condition to a spatial mold – in other words, to a relation of form-matter – but to a temporal

modulation that implies as much the beginnings of a continuous variation of matter as a continuous development of form."[94] Deleuze sees Leibniz as providing a way of conceiving how the seemingly static knowledge of a temporal occurrence, material, and identity, are always in flux due to the interplay between the virtual and the actual.[95] Deleuze seems to be conceiving the continuous as the virtual, and the distinct or contiguous as the actual, which occurs only because of the interplay between the virtual and actual.[96] The infinite virtual world is created through the actualization of an infinity of *distinct* monads. None of these distinct monads are static either, as Leibniz makes clear that they are always enfolding and unfolding different aspects of their representation of the world. It is the play of the virtual, or the recursion of the virtual, within the actual that prohibits identicality and produces the 'objecticle', or indefinite, monad.[97] What is enfolded in the monad, that which is not yet actualized, is the virtual world it contains, what is unfolded is the actualizing of points of view on this virtual world. According to Deleuze, this recursion of the virtual produces a different type of inclusion depending on the class of being that the inclusion takes place within.[98]

Four Types of Inclusion

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[94] Deleuze, 19.
[95] Ibid, 24-5.
[96] Ibid, 20, 26.
[97] Ibid, 19-20.
[98] Ibid, 57.

According to Deleuze, Leibniz does not have one universal understanding of inclusion that applies to every aspect of his metaphysics. Instead, Deleuze argues, Leibniz is operating with four subtly different forms of inclusion that operate differently depending on the "class of beings" that this virtual inclusion is occurring within: Table 1, Deleuze's Table of Inclusion.[99]

What Deleuze is calling 'inclusion' is the relational law of virtual coincidence. What Deleuze is drawing attention to is that this relational law of coincidence operates differently with respect to different subjects. There is no need for a relational law of virtual coincidence for a necessary truth because this kind of inclusion is automatic and identical: A=A. A reciprocal

Class of beings	Predicate	Subject	Inclusion	Infinity	Principle
Identicals (absolutely simple)	Forms or attributes	God	Auto-inclusion	Infinity by itself	Principle of contradiction
Definables (relatively simple)	Relations among definers	Extensions or Sizes (wholes and parts)	Reciprocal Inclusion	Infinity by the cause	Principle of similitude
Conditionables (limitatively simple)	Requisites (their relations or laws)	Intentions or Things (what has degrees & tends toward limits)	Inclusion unilateral localizable	Infinite Series with internal limit	Principle of sufficient reason
Individuals (wholly simple)	Events or Modes (relations with existence)	Existents or Substances	Inclusion unilateral cannot be localized	Infinite series with outer limit	Principle of indiscernibles

inclusion, according to Deleuze, is like a defined term, any defined term is defined by reasons or 'definers'.[100] Deleuze claims that there are always at least two definers, e.g. 'apple' can be defined by 'round' and 'fruit' (or, A = BC). However, this is not the end of the definition of 'apple' because 'round' and 'fruit' are also composed of definers and can be similarly broken

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[99] Ibid.
[100] Ibid, 43.

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down.[101] These 'defined terms' are therefore always complexes of other complexes. Deleuze argues that these defined terms are most fundamentally the product of the combination of identicals, but this raises the question: "How could the relation jump out [*surgir*] of the nonrelation?"[102] How is it that nonreciprocal auto-inclusions can produce reciprocal inclusions? Deleuze understands this movement from auto-inclusive principles to reciprocally inclusive definitions to be an act of creation: "if absolute forms constitute God as an infinity by itself, which excludes wholes and parts, the idea of creation goes back to a second infinity, through cause. *It is this infinity by way of cause that constitutes wholes and parts,* without there being either a largest or smallest part."[103] Following this line of thought, Deleuze claims that, for Leibniz, all extensions and extensities are of this second order of infinity which must have principle definers that are somehow what incites definition even though they are never explicit.[104] The principles remain virtual. This seems to be why this second order of infinity is where Deleuze specifically locates cause and effect; in the first order of infinity the auto-inclusion of A=A does not have any virtual causal element; it is instead iterative rather than productive *in itself*. However, this auto-inclusion is the foundation that becomes a virtual cause for the second order of infinity. In other words, this second kind of inclusion, or folding, is the schema of folding that Leibniz describes in his account of motion in *Pacidius Philalethi*. That is, the folds of motion are always different in terms of degree of activity, but they are all only different ways of defining the activity of the motion in terms of greater or lesser degrees of adequacy. While these folds are distinguishable from one another, they are also understandable as a single motion. Necessary truths should then be understood not quite as folds, but what is

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[101] Ibid.
[102] Ibid, 45.
[103] Ibid, 46.
[104] Ibid.

enfolded in folds. Meaning, the identity of the motion is not a fold itself, but what is enfolded differently throughout the variation of the motion. In other words, the reason why one can look at the beginning and the end of a given motion and say it is the 'same' motion (A=A) from start to finish, is because what is enfolded as the principle of this motion is the necessary truth expressed in manifold homomorphic ways. The necessary truth is that which every fold in the motion virtually coincides with to produce a consistent motion. The expressive folds in motion, though, *are* reciprocal as the lesser and greater folds are always mutually enfolded following a relational law of constitutive coincidence.

However, as is shown in the table above, not all inclusions (folds) are reciprocal nor are they automatic or identical. According to Deleuze, there is a third order of infinity that "involves series that do not always possess a last term, but that *are convergent and tend toward a limit.*"[105] These kinds of inclusions are properly understood as unilateral and nonreciprocal.[106] For these folds, which Deleuze identifies as relational, it is no longer a question of 'part' and 'whole', but is instead a matter of *degrees*. These degrees of expression never achieve reciprocity with other degrees of expression, even though they infinitely converge toward one another, like asymptotes. However, this kind of inclusion does *not* pertain explicitly to monads, only to their relational predicates. The relational law of virtual coincidence is one of *concurrence*. While relational predicates are limited and localized (they are explicit only for the subject they apply to) and the monad is what establishes the limit of the relational predicates, the monad itself is not the limit. The monad itself, the individual, represents a fourth order of infinity and a new model of inclusion, or folding.

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[105] Ibid, 47.
[106] Ibid.

This fourth order of infinity is still unilateral, but it is also not limited. The monad is the inverse of God; whereas God can be understood as $\infty/1$, any given monad is $1/\infty$.[107] What this means is that each monad expresses infinity even if what is *explicitly* expressed is only fractional. Therefore, this fourth order of infinity and folding is the enfolding of the world in the monad. It is at this point that it becomes clear that the monad is a continuum of perception. Not every perception is made explicit, but what is explicit is produced from perceptions. Therefore, the relational law of virtual coincidence is of existence, or the world; "In this way the world is in the monad, but the monad lives for the world: God himself conceives individual notions only as a function of the world that they express, and chooses them only through a calculus of the world."[108] It is initially confusing why this kind of virtual coincidence – world and monad, or premiss and conclusion – is not also reciprocal or even auto-inclusive. However, I agree with Deleuze in acknowledging that, while the virtual expressed by any given monad of the world is unlimited, this expression always remains personal.

Part of Deleuze's explanation of this unlimited personal expression is based in his understanding of which of Leibniz's principles drive each type of inclusion. The principle that drives the fourth order of infinity is the principle of the identity of indiscernibles (in nature there cannot be two things that differ in number alone). This requirement of individuality is incompatible with a reciprocity of world and monad. Despite this, every monad is individualized through its total representation of the world. Deleuze claims that this conclusion affirms the two 'principles of principles', namely that "Everything is always the same thing, there is only one and the same Basis; and: Everything is distinguished by degree, everything differs by

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[107] Ibid, 49.
[108] Ibid, 51.

manner."[109] At the level of the virtual representation of the world, there is no limit to what the monad expresses. However, at the level of the actual, the monad is limited regarding how it expresses the world. The expression of the virtual world is the production of predicates. These predicates are convergent, or concurrent, toward other actualizations of the world, but they are never reciprocal. One does not define the other. The 'world' (all other monads) is not a defining force, but a productive one. While one monad does not define the other, it is still true that their productions are nevertheless symmetrical. It is this symmetry that preserves their identity, prevents reciprocity, and testifies to the irreducibility of intimacy.

Furthermore, as I argued at the end of the previous section, for Leibniz, the virtual is essentially productive of the actual; however, it is perhaps the case that the virtual is not, properly speaking, *real* despite this genetic relation. What is *only* virtual (e.g. relations) is that which is not explicitly expressible, and what is not explicitly expressible is ideal. This does not change the fact that virtual is the principle of the actual. However, as will be shown in the next chapter, what is ideal for Leibniz is that which cannot be expressed completely by abstraction. Therefore, any explicit predication is a kind of abstraction of the expression of the universe. Additionally, I can now clarify what I understand to be Russell's mistake regarding his understanding of Leibniz's relations: Russell considered only the third order of inclusion as representing the totality of Leibniz's understanding of relations. If this were, in fact, the only mode of inclusion, then Leibniz's monads would not only be deprived of the truth of their relations, but the relational predicates themselves would be simple attributes (e.g. bald, fair-skinned, green, etc.) rather than productions/abstractions derived from the virtual/ideal world. The truth of the relation lies in the very fact that the relational predicate was produced by the

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[109] Ibid, 58.

substance's relational law of virtual coincidence with the world. If I burn my hand on the stove, then I truly know that the stove was on; likewise, if there is a relational predicate, then one can truly know that it is the result of virtual coincidence. Not everything about this relation will be explicit in the relational predicates of the related subjects, just as I may not be aware of the exact temperature of the stove that burned me, but this does not change the reality of the relation that serves as the foundation for the relational predicates. Lastly, I think this analysis of the virtual shows that the inclusion of the virtual into the actual is what defines something as enfolded.

Conclusion

Therefore, the reality and truth of relations lies in the virtuality of relations. Relational predicates enfold this virtual relation and actualize it as a unilateral and nonreciprocal expression that converges with the related substance's expression of that same virtual relation. Relations are at work in all operations of folding, that is, relations are at play in all orders of infinity. However, the complexity of the relation and the ratio of implicit to explicit expression changes between each order of infinity. In the first order of infinity, when dealing only with necessary truths, what is infinite is the identity, and the term is therefore absolutely simple rather than complex. Lastly, there is nothing that is only implicitly expressed – everything is explicit. In the second order of infinity, when dealing with wholes and parts, the infinity is of similarity and there is a reciprocal level of implicit inclusion among all the related defining terms. In the third order of infinity, what is infinite is the degree of difference, this makes it so that there is never explicit agreement even though there is an implicit similarity.

This is the infinity of intimacy, the level of explicitly experienced difference. This is the distinction of Paris and Helen, even though they are both lovers of one another. They concurrently express this relation, but they do not identically express it. In the fourth order of

infinity, what is infinite is the world, and it is at this level that what is implicitly affecting us is orders of magnitude greater than what is explicitly understood by us. However, I do not see this implicit containment as a deficiency. I understand each monad's implicit containment of the world to be proof of the reality of what grounds our intimate relations to one another, such that it restores the validity of our care. Our relations are not solipsistic, but they are uniquely understood. Leibniz's distinction of the virtual and the actual allows for both aspects of relations (the intimate and the unified) to be real, even though only one (the intimate) is ever explicitly experienced.

The virtual inclusion of unity maintains the unilateral understanding of relations, even if they are founded on a shared ground. The reason for this is that while the virtual ground may be coincident, the actualization is differentiating. What I find so intriguing about Leibniz's approach to relations is his devotion to preserving individuality that does not compromise the role others play in generating this individuality. It is not that others are 'causing' relational predicates in me; it is rather my (virtual) relation to others that causes my (actual) relational predicates. Leibniz's approach is an internalization of the external that avoids solipsism. The way he avoids this solipsism is through his notion of virtual coincidence; every monad virtually coincides with the world in the same way that 'Paris loves Helen' and 'Helen is beloved by Paris' coincide. This is not due to reciprocity, as Deleuze points out, but is instead because all monads mirror the world. In this way, it is not reciprocity that generates coincident relational predicates; it is instead the 'world' serving as the same sufficient reason for multiple expressions of that world.

However, there are still a few issues that remain to be fully explained: why does Leibniz call relations 'merely mental things' and refer to them as 'ideal' if they are more accurately understood as virtual? Are 'ideal' and 'virtual' in fact synonyms for a single concept or is there a

distinction? And what is of greater interest to me: what is the activity of relations? Afterall, relations often come and go or change entirely, if there is a stable virtual ground for relations then this shifting becomes difficult to understand unless the virtual is only the springboard for a series of actual activities. I am inclined to think that the virtual is such a springboard and that relational activities are ongoing in their actualization. However, I will have to defend this view as well as answer the question of the role of the ideal in the next chapter.

Chapter IV: The Ideality and Appetition of Relations

In the last chapter I worked to establish the role of the virtual in the production of relations. Particularly, I argued that the virtual is what constitutes relations without ever being explicitly expressed *in* the related subjects.[1] I then examined the four modes of inclusion (folding) that Deleuze draws out in his work. Through this examination I have argued that relational folds are best understood as unilateral and non-reciprocal: relations are an expressive series that can never be completed but nonetheless converge toward the limit of another subject's expressive series. Every aspect of this relational series is enfolded in the expressed relational predicate. The resultant predicates of the related subjects might appear qualitatively equal, but Leibniz's discussion of congruence in his writings on *analysis situs* indicate that this apperceived equality misses the distinguishing factors of each subject. What is really at play in this conceived equality is a congruence of what is non-explicit that presents as a shared situation.[2] This shared situation is the relation that is understood when minds apperceive two subjects as having coinciding relational predicates (i.e. 'Paris loves Helen' and 'Helen loves Paris'). The mind's imposition of a relation is therefore justified, because it comes about due to congruence, but this relation is not what is explicitly expressed by either subject.

In this chapter, I want to continue this line of examination by now considering the status of these mentally imposed relations. Namely, I want to examine why Leibniz calls them 'ideal' and determine how what is ideal is connected to apperception. I recognize that it is entirely

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[1] Note that I will be switching between the language of substances and subjects in this chapter. While all subjects are also substances, when I specify 'subject' it is because I am discussing apperceiving substances. If I only use 'substance' then I mean the more general category of all monads, souls, etc.

[2] A substance's situation is more complex than just its location. A situation takes into account other differentiating factors that are not explicitly expressed. For a more detailed discussed of situation and Leibniz's *analysis situs*, see the previous chapter.

understandable to consider Leibniz an idealist – most of my own examination thus far has dealt with perceptions, understandings, and incorporeal relations rather than material phenomena. Even the analysis of motion requires discussing increments of 'force' that are not purely physical. All of this, as Daniel Garber points out, aligns Leibniz quite squarely within the category of 'idealism' that was defined after his death by Alexander Baumgarten: "Whoever admits only spirits in this world is an Idealist."[3] Moreover, Baumgarten explicitly had Leibniz's system of monads in mind when providing this definition.[4] Garber argues that while Leibniz may be an idealist (in terms of Baumgarten's definition) by the time of *Monadology*, his writings from the 1680s-1690s admit of a more complex understanding of the role of the body.[5] I am sympathetic to Garber's view but I also want to consider the possibility that even in later works, Leibniz never truly becomes an idealist, at least not according to Baumgarten's definition. I will be arguing that Leibniz's usage of 'ideal', which emerges after 1700, provides evidence that Leibniz himself had a very different definition of 'ideal' in mind when using the term.

It should also be acknowledged that whenever Leibniz is accused by an interlocutor of reducing the body to strictly ideal qualities, he responds that this is not in fact what he is doing.[6] This reminds me of his frequent defense of the claim that God's ability to know everything about all substances does not limit the freedom of any substance.[7] One can argue that Leibniz is mistaken to hold these claims or that his arguments are too thin, nevertheless, the fact remains that Leibniz himself frequently did not agree with his interlocutors' understanding of his system.

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[3] Baumgarten, *Metaphysics*, sec. 402, Garber, "Leibniz and Idealism," 95. (2005)
[4] Baumgarten, sec. 399-402.
[5] Garber, 95-96.
[6] GP II 275 (AG 181) [1704 or 1705] and A.vi.4, 1670 (AG 105) [1690]
[7] Discussed in Chapter Three in the section 'Types of Truth in Leibniz'.

If I am to consider whether relations are fully ideal, then it should first be clarified what it means for Leibniz for anything to be considered 'ideal'.

I intend to show that when Leibniz is utilizing the terminology of 'ideal' or 'merely mental' with regard to apperception what he means is that they are abstractions rather than comprehensive accounts.[8] These abstractions are useful, but still limited because they cannot completely capture the totality of the perceptions (i.e. each individual perceived wave) involved. I will further be arguing that this distinction between these levels of clarity are based on *appetition*. Each monad has a particular appetition (striving or set of desires) that sets it apart from other monads by driving a given monad from one configuration of perceptions to another (and another, and another, and another…). For example, it is one's appetition that urges one toward the study of philosophy rather than the study of business and even more precisely, it is one's appetition that drives a student of philosophy to study Kant, Sartre, Arendt, or some other figure rather than another. To this same point, it is Paris' appetition that impels him toward loving Helen. I intend to examine the role of appetition in considering to what extent relations are actively produced rather than passively developed. To that end, I wish to consider how Leibniz's commitment to the conservation of force plays into this production of relations as intimately structured.

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[8] GP II 517 (AG 203) [1714] and GP VII 401 (AG 338-9) [1715-16], it is also worth considering the passage in GP II 486 (DB 327) [1716]. It pertains to phenomenality rather than ideality, but in *New Essays* Leibniz claims that "As for motion, it has only phenomenal reality, because it belongs to matter or mass, which is not strictly speaking a substance" (A.vi.6, 210; RB 210, see also A.iv.6, 277; LoC 256). Leibniz also wrote that space and motion are really relations (A.iv.6, 266; LoC 224, c.f. GP VII 395; AG 335). If motion is a relation and phenomenal, and relations are ideal, then it is worth considering the potential overlap of the phenomenal and ideal. It may not be that every phenomenon is ideal, but I think it is worth considering this passage given the connection. I would like to dive into greater depth on this question, but a discussion of what counts as phenomenon may be too far adrift of the main focus of this project.

The conservation of force can be easily summarized by the following passage from Leibniz: "it is extremely reasonable that the same force is always conserved in the universe… We observe also that the force of a body is diminished only in proportion to the force it imparts to some bodies contiguous to it or to its own parts, insofar as they have separate motion."[9] Pauline Phemister explains that these statements about the conservation of force in motion equally apply to perceptions of those bodies.[10] More than just the perceptions of bodies, though, there is also the fact that while I am clearly focused on writing this chapter I am not simultaneously clearly focused on other tasks or ideas. For instance, I realize that I need to go to the grocery store later, and while this apperception is clear to me to a degree, it is not as clear to me as the ideas I am formulating in this chapter. These other apperceptions are therefore less clear when I am less focused on them. What this means for Paris is that if he falls in love with Helen (i.e. develops a clear and distinct understanding of himself as a lover of Helen), he necessarily loses some perceptual clarity regarding other aspects of the world. Paris still represents the entire world, but insofar as he is focused on loving Helen, the rest of the world is less clearly perceived or apperceived (in fact, the vast majority of the world is incredibly confusedly perceived). Interestingly, the relation 'lovers' expressed by Helen and Paris is also subject to the conservation of force insofar as neither expresses the entirety of the relation with absolute clarity, they only express their perspective on the relation which does not alienate one another from expressing the relation (making it non-relational). However, Leibniz's conservation of force is made more complex by the fact that it operates alongside his theory of pre-established harmony. In the material world, this results in a unique conception of occurrences such as the collision of two bodies:

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[9] GP IV 442 (AG 49-50) [1686]

[10] Phemister, "Substance and force: or why it matters what we think." [2017]

both act equally in the collision, so that half of the effect comes from the action of one, the other half from the action of the other. And since half of the effect or passion is also in one and half in the other, it suffices to derive the passion which is in one from the action which is in it, so that we need no influence of one upon the other; even though the action of one provides an occasion for the other to produce a change within itself.[11]

Leibniz is clear that this equal participation as well as the harmonized oscillation of action and passion is also at play in perceptions.[12] I understand this to mean that Paris and Helen's love for one another is something that requires congruent expressions of representations (apperceptions). Therefore, Paris' predicate 'Lover of Helen' – which carries with it the necessary predicate of Helen; 'beloved by Paris' – is one side of this harmonized congruence of conserved expression. Relations themselves pose a problem though, because they are not actually what is explicit in either substance (nor is the collision 'expressed' as a collision, it is only abstracted as such); what is explicit is the perspectival abstraction of the relation. To this end, I will be arguing that what is *ideal* is the abstracted clear understanding of a relation that is different for each subject, and that the production of this abstraction is rooted in the subject's *appetition*. To better understand the role of appetition in the production of relations I will be addressing it in greater detail after discussing my understanding of Leibniz's usage of 'ideal'. Lastly, given that, for Leibniz, all 'collisions' occur in the material continuum, it will be worthwhile to return to the consideration of the continuum of relations.

In the previous chapter I discussed shared relations as abstractions of the virtual foundation of relational predicates even though they are never fully expressed in the predicate. So, what distinguishes the virtual from the ideal? If the virtual is the foundation that produces the predicates, then the ideal is the abstracted apperception of this foundation. That is, much as each

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[11] GM VI 251 (L 448) [1695]
[12] GP VI 615 (AG 219) [1714]

wave is not individually represented in my apperception of the roar of the ocean, everything virtually expressed is not represented in the ideal abstraction.[13] Consider again the distinction between the virtual and actual understandings of wholes and parts made in the first chapter: in the ideal, the whole precedes the parts, but in the actual, parts precede wholes. Thus, the ideal provides certainty regarding the whole, but lacks absolute distinctness regarding the parts. A shared relation is ideal because no substance's knowledge of it can be comprehensive: Helen may know that she loves Paris, and that by this fact he is beloved by her, but she cannot know with perfect clarity and distinctness that he loves her (and the same holds for Paris' knowledge of Helen). Moreover, Helen is largely unaware of the myriad other subjects whose expression of the world (including Paris and Helen's love for one another) shapes the shared relation "Paris and Helen love one another". Now, insofar as Paris and Helen make their love known to one another, their understanding of this love is much more well perceived by each of them, but the shared relation remains ideal (abstract) because they still do not understand the totality of their relation with perfect clarity or distinctness.

Therefore, my goal in this chapter is to distinguish the ideal from the virtual in Leibniz's work. Additionally, I want to examine how appetition determines the development of relations. Through establishing this, I want to show that monads are actively developing their relations with one another through a conservation of perceptual force that incites the recognition and development of relations. I find this second goal to be of great importance for a contemporary understanding of intimacy in relationships. It must not be the case that the limit of intimacy institutes solipsism, rather, the intimacy of relations truly depends on the concurrent actions of multiple subjects. Neither should it be the case that relations simply 'occur' for subjects. I think

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[13] I am using Leibniz's example of the waves and the roar of the ocean analogously to discuss abstraction, even though Leibniz himself uses it to discuss petite perceptions (A.vi.6, 54; RB 54).

that Leibniz's language of 'unfolding folds' belies a notion of subjective activity. As I have argued from the beginning, understanding relations as intimate preserves the idea that each subject equally produces their relationships. Therefore, while relations are unilateral and nonreciprocal, they are still concurrently produced. In this model, concurrence is not something that operates upon subjects, but it is a state induced through the operations of subjects.

<u>What is Ideal in Leibniz?</u>

To begin, I want to clarify the definition of the 'ideal' in Leibniz. While 'idealism' was perhaps not an official category until after Leibniz's death, he did still use the term 'ideal' from time to time and defended his system against claims that he had done away with the material world. While Leibniz's theory may appear idealist, I will argue that Leibniz simply did not see it that way and try to explain why. It may well be the case that Leibniz is mistaken about, or blind to, the idealism of his own system but I will nonetheless examine Leibniz's defense against these claims. Additionally, I will examine passages where Leibniz explicitly refers to something as 'ideal'. It is worth noting that Leibniz also discusses relations as *entia rationis* (objects of thought), *rem mere mentalem* (a merely mental thing), *concogitabilitas* (used to describe the act of thinking of multiple different things at once), and *idea imaginariae* (an idea of the imagination).[14] The passages wherein Leibniz describes relations in this way clearly understand relations as purely mental. However, I believe that Leibniz has a very complex understanding of what is ideal, and, in these passages, he is focusing on the mental act of *abstraction* which I see as truly marking something as ideal. Therefore, while I think these passages attest to the fact that

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[14] GP II 96 (AG 86) [1687] A.vi.6, 227 (RB 227) [1704], GP II 486 (DB 327) [1714], A.vi.4, 866 [1687-1696], Grua 266.

there are ideal components of relations, I also do not think relations are exclusively ideal – there must be some virtual relation which the mind is abstracting *from*.

What is often pointed to (such as by Garber, Adams, and Phemister) as one of the apparent affirmations of Leibniz's idealism is his claim in a letter to De Volder that "Indeed, considering the matter carefully, we must say that there is nothing in things but simple substances, and in them, perception and appetite."[15] This passage can easily be taken as definitive proof of Leibniz's full-fledged idealism in his later writings (after 1700). The reason being that, if any given 'thing' is only a collection of perceptions and appetites, then this leaves no room for material and we are left not only with an idealist conception of relations, but an idealist conception of the world. This claim is only reinforced by Leibniz's statements in *Principles of Nature and Grace* and *Monadology,* which affirm that monads are simple substances and that simple substances are composed of perceptions and appetites.[16] Again, while I am willing to accept the idea that Leibniz's philosophy is not consistent across all his writings, I am also interested in the fact that Leibniz often disavows a strictly idealist (by Baumgarten's definition) conception of the world. If Leibniz is so adamant that a system of nature composed of substances that are constituted out of perception and appetition *is not* ideal, then there must be something about how he understands his system, or at least how he understands 'ideal', that is not clear for his readers.

In viewing his philosophy in this way, I think it is possible to accommodate some of his statements in his letters or various writings. While perhaps this view strays dangerously close to a cherry picking of Leibniz's views that supports my own philosophical endeavors, I think it is

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[15] GP II 270 (AG 181) [1704]. Garber, *Leibniz: Body, Substance, Monad*, 385; Adams, *Leibniz*, 265; Phemister, *Leibniz and the Natural World*, 35.
[16] GP VI 598 (AG 207) and GP VI 607-9 (AG 213-15) [both 1714]

justified given certain circumstances. For instance, De Volder responds to the above quote from Leibniz by saying that Leibniz has done away with the material world, to which Leibniz replies "I don't really eliminate body, but reduce it to what it is. For I show that corporeal mass, which is thought to have something over and above simple substances, is not a substance, but a phenomenon resulting from simple substances, which alone have unity and absolute reality [*realitatem*]."[17] This statement makes more sense when considered alongside a claim he makes in one of his earliest letters to De Volder "I don't think that substance consists of extension *alone*, since the concept of extension is incomplete."[18] Since the first chapter I have shown that Leibniz recognizes the faults in making extension alone the basis of our understanding of nature. This problem lies in the fact that extension is infinitely divisible – meaning that there is no ultimate foundation for extension in extension itself. Now, these comments from Leibniz that account for extension in a limited way and claim to not be eliminating bodies hardly equal a full refutation of Leibniz's idealism. However, the fact that he rejects the opportunity to fully embrace this idealist position when prompted by De Volder is interesting. Moreover, if Leibniz is rejecting this position (which is clearly 'ideal' by Baumgarten's standards) then it is unclear what Leibniz *does* mean when he does utilize the term 'ideal'.

Furthermore, Leibniz responds similarly in a clarificatory note sent to Fardella: "I do not say that the body is composed of souls, nor that the body is constituted by an aggregate of souls, but that it is constituted by an aggregate of substances."[19] Daniel Garber, while admitting that here Leibniz is definitely denying an idealist conception of substances, argues in his own analysis of Leibniz's correspondence with Fardella that Leibniz's subsequent attempts to back up

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[17] GP II 275 (AG 181) [1704 or 1705]
[18] GP II 169 (AG 171) [1699] my emphasis
[19] A.vi.4, 1670 (AG 105) [1690]

this denial become scattered and contradictory.[20] Leibniz first utilizes his common example of points in a line but then also discusses his image of the infinite reduction of fish in a pond, where the water inside the fish is also a kind of pond made up of smaller fish who likewise contain ponds and fish in them and so on. Leibniz goes on, though, to provide an additional example and analysis that I think is worthy of close examination:

> And just as there is no portion of a line in which there not an infinite number of points, there is no portion of matter which does not contain an infinite number of substances. But just as a point is not a part of a line, but a line in which there is a point is such a part, so also a soul is not a part of matter, but a body in which there is a soul is such a part of matter. We must consider whether we can say that an animal is a part of matter, as a fish is a part of a fish pond, or cattle are a part of a herd. And indeed if the animal is conceived of as a thing having parts, that is, as a body divisible and destructible, endowed with a soul, then it must be conceded that the animal is part of matter, since every part of matter has parts. But it cannot then be conceded that it is a substance or an indestructible thing. And it is the same for man. For if a man is the I [*Ego*] itself, then he cannot be divided, nor can he perish, nor is he a homogeneous part of matter. But if by the name 'man' one understands that which perishes, then a man would be part of matter, whereas that which is truly indestructible would be called 'soul,' 'mind,' or 'I,' which would not be a part of matter. [21]

At first glance, it appears Fardella's criticism has flustered Leibniz. The two images (the point in the line and the fish in the pond) are contradictory; in the one you have points which have no extension and are not parts of lines but are still inextricable from lines, while in the other you have fish which are clearly part of the pond. However, what I think demands a closer look are the final few lines of this passage wherein Leibniz states that it is 'the same for man' and then goes on to show that 'man' can be understood in a variety of ways depending on what aspect of 'man' one is discussing. 'Man' as *ego* is *not a homogeneous part of matter,* just as the point is not a

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[20] Garber, "Leibniz and Fardella," 133.

[21] A.vi.4, 1670-1 (AG 105) [1690]

homogeneous part of a line. This is why Leibniz raises the question of whether an animal is a part of matter and uses the example of the fish in the pond; the animal as material is a part of matter, but the animal (like man) is not strictly material. If the animal (or man) *were* strictly material, then it would not be a substance. The point of using conflicting examples (the point in the line and the fish in the pond) is to show that "a body in which there is a soul" is a *substance* and that substances therefore are not strictly ideal (by Baumgarten's definition) or material.

However, with Leibniz, things are rarely clear cut or obviously consistent. Garber acknowledges that it is possible to interpret this passage in a variety of ways: 1. The passage could be outright denying idealism, and Leibniz certainly leaves the door open for this interpretation given that Fardella would have been charitable to an idealist view, yet Leibniz still denies even to Fardella that his system is purely idealistic.[22] 2. One could also interpret from these passages, as Robert Adams points out, that Leibniz may be hinting that he has adopted an Aristotelian definition of substance (hylomorphic substances).[23] Garber considers this view more plausible than Adams, largely because Garber understands Leibniz to be the kind of thinker who (in his letters) accommodates his ideas to his interlocutor, and Fardella would have recognized this depiction as blatantly Aristotelian.[24] 3. Adams also sees it as possible to understand these passages (particularly the passage from Fardella, but I think it extends to the letter to De Volder as well) as asserting a "qualified monad". The monad is qualified because it is a corporeal substance "inasmuch as it has a body. A corporeal substance, on this view, is not a monad plus a body, but a monad as having a body. We may therefore call this the 'qualified monad conception' of corporeal substance."[25] 4. It could very well be none of these options. It may

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[22] Garber, "Leibniz and Fardella," 136-7.
[23] Adams, *Leibniz,* 275.
[24] Garber, 136.
[25] Adams, 269.

even be the case that Leibniz was not terribly interested in whether his theory was or was not idealistic. Garber also proposes that Leibniz may have just been trying to develop a counter to the standard Cartesian understanding of matter that was largely unchallenged at the time.[26] There is also the fifth option: maybe Leibniz had idealist arguments and realist arguments but ultimately never settled on one view because he was still struggling with the hope of preserving the material world in some way.

In Garber's later text, *Leibniz: Body, Substance, Monad*, he sides more with this fifth view. Essentially, Garber's thorough examination of Leibniz's discussions with Arnauld, De Volder, Des Bosses, and other texts like *Conversation of Philarète and Ariste*, concludes that Leibniz often attempted to preserve the reality of material but that he seemingly never did this satisfactorily.[27] Garber writes, "But I wonder about the whole discussion. 'Realist' and 'Idealist' are just not terms that Leibniz himself used to describe his position. Nor were they terms that were really available to him...I wonder if this isn't just a bad question to be focusing on."[28] This is certainly a valid concern to raise. One has to wonder if it is possible to properly apply these terms to Leibniz's theory given how little interest he seemed to show in discussing his work via these categories. It could be said then that any investigation into Leibniz's realism or idealism is ultimately guided by the reader's need to accommodate their understanding of Leibniz's theory with their own idealist or realist views.

This criticism could easily apply to my own analysis given the fact that my investigation relies on understanding relations as a form of intimacy rather than as solipsistic. I have been convinced that an idealist conception of relations would be incompatible with this because if

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[26] Garber, pp. 138-9.
[27] Garber, *Leibniz: Body, Substance, Monad,* pp. 382-7.
[28] Ibid, 387.

relations are the result of internal (perceptual) changes in the monad itself irrespective of any engagement with other monads, then relations are not intimate at all. To that end, I have been trying to show that relations are not strictly ideal. However, if Leibniz's definition of ideal is different from the contemporary understanding of the term, perhaps my concern is unwarranted. Therefore, if Leibniz's system itself cannot be neatly categorized as realist or idealist, I now want to understand what Leibniz means when he uses the terminology of ideal. It is possible that Leibniz's definition of 'ideal', and by extension his declaration that relations are ideal, is not an issue for my understanding of relations as intimate at all.

Leibniz's Own Understanding of Ideal

I think that while it might be fair to understand Leibniz as an idealist by contemporary standards, it is unfair to impose a contemporary definition of 'ideal' and 'idealist' upon Leibniz's works, even though he uses the terms himself. My reason for this is that I think Leibniz predominately used 'ideal' to indicate the abstraction of something which is impossible for a mind to comprehensively understand. If this reading is correct, then I take it to mean that when Leibniz claims relations are ideal, then what he means is that knowledge of any relation is only abstract knowledge. The difficulty lies in the fact that Leibniz does not provide any exact definition of 'ideal', so my approach in this section will be to examine his usage of the term in relation to mathematics, the material continuum, and relations.

While it does have ramifications for my own theory of intimate relations if all relations are purely phenomenal and have no reality outside of the imagination of minds, this is only the case if Leibniz himself considered what is ideal to be entirely divorced from what is real. Leibniz does actually seem to assert such a strong distinction in a letter to De Volder:

But a continuous quantity is something *ideal* which pertains to possibles and to actualities only insofar as they are possible. A continuum, that is, involves indeterminate parts, while on the other hand, there is nothing indefinite in actual things, in which every division is made that can be made. Actual things are compounded as is a number out of unities, ideal things as is a number out of fractions; the parts are actually in the real whole [*toto reali*] but not in the ideal whole [*non in ideali*]. But we confuse ideal with real substances [*Nos vero idealia cum substantiis realibus confundentes*] when we seek for actual parts in the order of possibilities, and indeterminate parts in the aggregate of actual things, and so entangle ourselves in the labyrinth of the continuum and in contradictions that cannot be explained.[29]

At first, this passage seems to suggest that ideality represents potentiality and that therefore nothing 'actual' could also be ideal. The one bright spot is that this seems to distinguish the virtual from the ideal insofar as the virtual was shown to be influential and productive of the actual in the previous chapter. While it distinguishes conceptions of ideal and virtual, it brings the ideal to the level of pure contingency. However, I think the first impression of this passage should be further interrogated. In the first chapter, I pointed out that Leibniz considers the difference between ideal wholes and actual wholes to be the fact that, for the ideal whole, the whole precedes the parts, whereas in the actual; the parts precede the whole.[30] An example of such an ideal whole, as given above in the letter to De Volder, is an infinite continuum.

Such a continuum, given that it would have an indefinite number of parts, cannot be known comprehensively, nor could any other indefinite or infinite structure. That said, while comprehensive knowledge of such a whole is impossible, the human mind can still abstract an understanding of the whole in question. The potential for further division or expansion of the indefinite whole is recognized but not treated as a full stop for potential comprehension. This is clarified in *New Essays* when Leibniz asserts that "abstraction is not an error as long as one

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[29] GP II 283 (L 539) [1706]

[30] A.vi.3, 502 (RA 99) [1676], A.vi.4, 1393. (RA 235) [around 1680-1], and GP II 379 (LDB 141) [1709]

knows that what one is pretending not to notice, is *there*."[31] Therefore, so long as one recognizes

the limits of their knowledge of the subject in question, then any abstraction is still reasonable

and correct. This ability to abstract, which Leibniz argues is one of the capacities that sets

humans apart from beasts, "requires attention to the general apart from the particular and

consequently involves knowledge of universal truths."[32] Therefore, while an animal can

understand the whiteness of snow and the whiteness of chalk, the animal does not understand any

similarity because it does not abstract out of these particulars any general understanding of

whiteness; rather, animals consider the whiteness of snow to be a quality unique to snow and the

whiteness of chalk to likewise be a unique quality of chalk.[33] By making the ability to abstract

generalia a quality unique to human minds, Leibniz seems to be claiming that this general

abstract knowledge that knowingly overlooks particularities is in some way superior to

knowledge of particulars. However, the real reason for this is that only a supreme intellect can

know particulars perfectly:

> You see, paradoxical as it may seem, it is impossible for us to know individuals or to find any
> way of determining the individuality of any thing except by keeping hold of the thing itself… The
> most important point in this is that individuality involves infinity, and only someone who is
> capable of grasping the infinite could know the principle of individuation of a given thing.[34]

Of course, the only 'someone' capable of grasping the infinite is God.[35] Therefore, it is not that

abstraction is superior to knowledge of particulars, but rather that beasts suffer not only from the

inability to abstract *generalia* but also the inability to know particulars comprehensively. The

infinity of an individual, as understood by human minds, is *ideal* insofar as the whole precedes

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[31] A.vi.6, 57 (RB 57)
[32] Ibid, 142 (142).
[33] Ibid.
[34] Ibid, 289 (289).
[35] Ibid, 57 (57).

the parts. My argument is that this 'whole' of the individual that I *am* aware of is a generalization produced through abstraction because no individual can be perfectly known in the most specific way. Instead, the kind of generalized knowledge of particulars that human minds utilize relies on abstraction. That is, when I say I know my friend, I know more than just the general information such as human, male, short, etc. I know his personality and other more specific traits. However, I don't know everything about my friend that distinguishes him from all other individuals. This understanding that I have of my friend is not in error unless I think that I actually do know the complete individuality of my friend; therefore, so long as I recognize the limits of my knowledge of my friend, then my abstracted knowledge of him is still useful. This understanding produced by human minds through the act of abstraction which does not fully represent the individual infinity of the thing considered is, as I understand it, what Leibniz is deeming 'ideal'.

Continuing to examine what Leibniz is considering ideal, it is worth turning to a much earlier piece, *Necessary and Contingent Truths* (1686). In that text, Leibniz uses an analogy as a means of distinguishing necessity from contingency that is quite similar to the example used to distinguish actual and ideal for De Volder: "So the relation of contingent to necessary truths is somewhat like the relation of surd ratios (namely, the ratios of incommensurable numbers) to the expressible ratios of commensurable numbers."[36] Surds are any irrational numbers and while fractions are not irrational numbers, what is consistent in these two passages is that what is actual is a rational unity. While any number is ideal since it can be infinitely divided, Leibniz is arguing that the composition of a rational numerical aggregate, such as 2, can be understood as the combination of unities whereas π cannot be so simply understood.

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[36] C18 (MP 97) [1686]

Leibniz also discusses some mathematical concepts as 'ideal concepts'. These ideal mathematical concepts are like *generalia* insofar as the concept cannot be exhaustively understood (e.g. an infinite line) and so my understanding is an incomplete one produced through abstraction. I see this evidence for this in a letter to Varignon discussing mathematics, wherein Leibniz wrote:

> It follows from this that even if someone refuses to admit infinite and infinitesimal lines in a rigorous metaphysical sense and as real things, he can still use them with confidence as ideal concepts [*notions ideales*] which shorten his reasoning, similar to what we call imaginary roots in the ordinary algebra… Even though these are called imaginary, they continue to be useful and even necessary in expressing real magnitudes analytically.[37]

It should be noted that by contrasting 'ideal concepts' with 'real things' Leibniz might be discussing the more general field of notions produced through ideation. However, Leibniz later echoes this utility of the ideal in his discussions of shared relations, writing to Clarke "Therefore we must say that this relation, in this third way of considering it, is indeed out of the subjects; but being neither a substance nor an accident, it must be a mere ideal thing [*une chose purement ideale*], the consideration of which is nevertheless useful."[38] I argue that since Leibniz is discussing mathematical concepts and relations as both useful despite their status as ideal, it is reasonable to consider the passage from the letter to Varignon to be a discussion of the ideal rather than the ideational. Thus, ideal concepts are in fact useful (if not necessary) when deriving certain mathematical formulations of magnitude. Furthermore, returning to the comment to Clarke on relations, this would mean that the relational statement "Paris and Helen are lovers," residing in neither subject and having no ontological value of its own, is purely ideal.

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[37] GM IV 92 (L 543) [1702]
[38] GP VII 401 (AG 339) [1716]

Yet this conclusion, that relations are purely ideal, only reiterates Leibniz's comment to Clarke. The question now becomes: What does it mean for a relational statement to be ideal? It means that the relational statement expresses only the theoretical conclusion of their respective relational predicates. This means I can provide as thorough a demonstration of the infinitude of the material continuum as I can that Paris and Helen are lovers. The lack of ability to demonstrate this knowledge exhaustively does not make this knowledge useless, it only indicates the limits of human cognition. One may not be able to prove the existence of anything infinite or of infinitesimal lines, but the system of math operates perfectly well if they are assumed. In both the mathematical and the relational cases, though, what it means for them to be ideal is that the knowledge of them is an abstraction of the subject considered. To recognize that relational statements are ideal means that the kind of statements that can be made regarding relations will always be abstractions because my knowledge of them is produced through abstraction of the subjects to which the relations pertain. It should not be forgotten that Leibniz consistently claims that relational statements are not extrinsic to the subjects to which they refer.[39] This means that relational statements do not provide a comprehensive account of the *intrinsic* factors (i.e. the individuality of the thing considered) that account for each subject's unique expression of the relation; rather, the relational statements are generalizations (ideal abstractions) derived from a limited understanding of the intrinsic qualities and representations. Therefore, when Leibniz states that relations (and as I understand him, he specifically means relational statements) are ideal, I interpret this as saying that relational statements are abstracted limited apperceptions, akin to summaries, which are therefore not entirely removed from the subjects they pertain to and thus still useful. It is not that the act of abstraction is ideal, but that the abstracted concepts

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[39] See: Grua 547 (Mates 223), A.vi.6, 146 and 227 (RB 146 and 227), GP VII 321 (L 365), C 520 (AG 32), C19 (MP 98).

provide only ideal conceptions of the particular subjects that the concept is abstracted from. For example, I cannot think infinitely, but I can have an ideal conception of an infinite line. This ideal conception itself is not incomplete or lacking, which provides me the possibility of having distinct knowledge of my ideal concept of an infinite line. The fact that I can have distinct knowledge of the abstracted ideal concept but not of the subject that this concept is an abstraction of shows that the ideal conception is only an approximation of that particular subject. Nevertheless, this approximation is abstracted from the actual subject, meaning that my (approximate) understanding of an infinite line is not entirely extrinsic to an actual infinite line.

I see all of this as both aligning perfectly with Leibniz's claim that there are no extrinsic denominations and explaining why relations (particularly, what I have been calling 'relational statements') are ideal for Leibniz.[40] While I can have a distinct understanding of the ideal concept, this still only provides a confused understanding of the subject that the ideal concept is abstracted from. In another part of his discussion of relations with Clarke, Leibniz claims that the mind "not contented with agreement, looks for an identity, for something that should be truly the same, and conceives it as being extrinsic to the subject; and this is what we call *place* and *space*. But this can only be an ideal thing, containing a certain order, wherein the mind conceives the application of relations."[41] It is important to note here that Leibniz says that place and space are *conceived* as external, implying that they are not actually external but that they are known as though they are external. Leibniz's commitment to monads being complete substances that express the whole world means that nothing can be lacking. Therefore, whatever is 'external' is only external insofar as it is confusedly understood that way by the monad. Bringing this back

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[40] A.vi.6, 227 (RB 227), c.f. GP II 56 (L 337) [1686]
[41] GP VII 401 (AG 338) [1716]

more explicitly to relations, if my distinct ideal understanding of Helen tells me that she is a lover of Paris, and my distinct ideal understanding of Paris tells me that he is a lover of Helen, then I will see these distinct understandings as equivalent, i.e. identical. In truth, though, these distinct understandings of the ideal understanding of Helen and Paris are not distinct understandings of the individual subjects Helen and Paris. Leibniz's argument would also lead one to conclude that an understanding of Paris and Helen as 'lovers' would render this relationship as external. What I see Leibniz trying to clarify is that relations are not some third thing distinct from the related subjects Helen and Paris, rather, Helen and Paris simply are such that they are related. However, I cannot have distinct knowledge of any particular subject such that I could understand how the relation is *uniquely* intrinsic to the notion of both Helen and Paris. The actual 'relation' is not some extrinsic thing, rather it is the abstraction of the intrinsic unilateral and non-reciprocal expressions of the world by Helen and Paris. Therefore, it is actually through ideally understanding relations that the relations are understood as extrinsic to the subjects, whereas the 'truth' of relations is intrinsic to the subjects in a way that only an infinite intellect could understand.

Another aspect of Leibniz's understanding of the ideal, as expressed in the passages above, that should be addressed is his association of 'ideal' with 'imaginary'. When hearing something described as 'imaginary' it is easy to discredit it as synonymous with fake. This is not made easier by the fact that Leibniz's own usage of the term 'imaginary' can be quite varied.[42] However, a useful definition given by Leibniz to Queen Sophia is as follows: "there must be an *internal sense* where the perceptions of these different external senses are found united. This is called the *imagination* which comprises at once the *concepts of the particular senses*, which are

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[42] L 92 n.12

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clear but *confused*, and the *concepts of the common sense*, which are clear and distinct."[43] This understanding of the imagination meshes well with what I have laid out so far in terms of relations being abstractions that are not entirely removed (extrinsic) from their subjects. By means of my particular senses I develop an understanding of both Paris and Helen, and in so doing I have abstracted through these particular senses various qualities of them, one being that Paris and Helen are lovers. However, this is not the only way in which 'imagination' is used by Leibniz. In *Monadology*, for example, Leibniz uses the imagination to mean something like image-oriented representational knowledge.[44] It may also be that Leibniz is using the term in the mathematical sense, in which case 'imaginary' only indicates indefiniteness. This sense of indefinite quality is essentially saying that our understanding of this number will always be relatively confused, never perfectly clear and distinct. Even when Leibniz discusses the imagination as representative knowledge centered around images, these are images associated with emotions, showcasing that the imagination is combining various things into a single representation.[45] While these different usages may appear disparate, I think it is possible to consider Leibniz's understanding of the imagination holistically as the unified representation of the infinite or an indefinite multitude.

Related to how our mind functions, in *New Essays* Leibniz claims that "what comes into our mind is the *concretum* conceived as wise, warm, shining, rather than *abstractions* or qualities such as wisdom, warmth, light, etc…We know, too, that it is abstractions which cause the most problems when one tries to get to the bottom of them."[46] Here, Leibniz is showing that when I apperceive a particular thing, e.g. a person, I understand this particular person as wise, kind,

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[43] GP VI 501 (L 548) [1702]
[44] GP VI 611 (AG 216)
[45] GP VI 611 (AG 216)
[46] A.vi.6, 217 (RB 217)

funny, etc. and that this apperception of these qualities in this person are different from the *general* notions of wisdom, kindness, or humor that I abstract through my experiences with multiple individuals who demonstrate these traits. Just as beasts can recognize the whiteness of snow and chalk without producing any understanding of the general idea 'white', so too do humans recognize these qualities in particulars. These qualities as expressed in a particular individual are understood both clearly and confusedly, whereas the general ideas of those qualities can be known clearly and distinctly. To clarify, the *generalia* can be clear and distinct but the particular understood through *generalia* is understood relatively confusedly and therefore indistinctly. In each case, my understanding is ideal. In the case of the particular, I cannot know the infinite individuality of the subject in question but I can still recognize the expressed qualities. What this means, as Leibniz points out, is that I never fully know an *individual* through abstraction.[47] I can have a clear understanding of the subject in question, but while clear it is also *confused* because it is only a *general* idea of the individual since an understanding of any particular individual requires an understanding of the infinite. To put it simply, I know my friend is wise, but I do not know every aspect of my friend's nature that leads to these expressions of wisdom; therefore, my understanding of my friend is only general as opposed to infinitely detailed. This understanding is clear insofar as I can distinguish my friend from any other subject in the world and confused insofar as it is not an exhaustive account of my friend. Put yet another way, I have a clear understanding of the 'whole' of my friend without understanding the indeterminate parts that comprise this whole; making my understanding only general, i.e. *ideal*. Moreover, all general ideas are ideal because *generalia* do not exist outside of my mind. This

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[47] Ibid, 289 (289)

does not mean that general ideas are fictitious, it just means that they cannot provide distinct understanding of particulars.

Clear but confused knowledge does allow for some level of distinguishing, as Leibniz notes when he says: "we recognize colors, smells, tastes, and other particular objects of the senses clearly enough, and we distinguish them from one another, but only through the simple testimony of the senses, *not by way of explicit marks* [*notis enuntiabilibus*]."[48] Knowing all of the 'marks' which distinguish one thing from another provides distinct knowledge, but since my mind can never give a complete account of any subject, my understanding of any subject is always at least slightly confused.[49] However, notions that are "common to several senses, like the notions of number, magnitude, shape are usually of such a kind, as are those pertaining to many states of mind, such as hope or fear, in a word, those pertain to everything for which we have a *nominal definition* (which is nothing but an enumeration of sufficient marks)."[50] Therefore, while I cannot give a distinct account of the differences between the general ideas of blue and purple since I encounter these only through my visual senses, I can fully distinguish hope from fear because I have experienced these general ideas in many different ways. That said, my clear and distinct knowledge of 'fear' does not maintain its distinctness when I say "My friend is afraid" because now I am dealing with a particular subject and I do not know all the

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[48] GP IV 422-3 (AG 24)

[49] It is not entirely clear to me what Leibniz means by 'marks' but it seems as though these are the reasons or qualities in the individual concept of a subject that lead to various events or predicates, as discussed in Leibniz's letter to Arnauld when discussing God's knowledge of Adam (GP II 12; LA 5). See chapter three for my reading of these passages. More simply but likely meaning the same thing, it could be that these 'marks' are simply *all* the distinguishing differences in a given substance. Therefore, a nominal definition that enumerates the *sufficient marks* would be an abstracted general understanding rather than a distinct understanding.

[50] Ibid.

marks that constitute this fear for that subject. That said, if you were to put my friend next to a stranger, I would still be able to tell you which of them I knew was afraid.[51]

However, I would not know that a general idea was a quality that could apply to other subjects without experiencing them in multiple instances or reasoning about their possibility. That is, I don't know that whiteness can apply to chalk and snow until I abstract the quality 'white' from chalk and snow through experiencing them or reasoning about them. Leibniz is quite clear on this when he states, "it is not within our discretion to put our ideas together as we see fit, unless the combination is justified either by reason, showing its possibility, or by experience, showing its actuality and hence its possibility."[52] Leibniz dives deeper into this verification of ideas by elaborating on nominal and real definitions: "In my opinion, the difference is that the real definition displays the possibility of the definiendum and the nominal does not."[53] For an example of a nominal definition, Leibniz considers the definition of two parallel straight lines: "lines in the same plane which do not meet even if extended to infinity."[54] Such a definition does not actually testify to the *possibility* of parallel lines and it is only once one reasons through the process of producing two parallel lines that one can recognize the possibility of this definition. Likewise, saying "Paris is a Helen-lover" (i.e. a substance that will invariably love Helen) is only a nominal definition until it is shown to be *possible*. This is shown either through reason or experience, or some combination of the two.

Now suppose I were being introduced to Paris and the person introducing Paris felt the need to inform me that Paris loved Helen. Surely, I can now more easily accept 'Helen-lover' as

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[51] It is entirely possible that both subjects are in fact afraid but, insofar as I am more familiar with how my friend acts when he is afraid, I can recognize his fear more easily than a stranger's who I do not know. Interestingly, this limitation is true despite my having a distinct knowledge of the general concept 'fear'.

[52] A.vi.6, 294 (RB 294)

[53] Ibid, 295 (295)

[54] Ibid.

a nominal definition of Paris, but it is not until I witness Paris acting lovingly toward Helen or professing the reasons he loves Helen that I can be convinced of the possibility and actuality of that quality. Even if Helen is not present, I can be convinced that Paris loves her, but this might be an unrequited love or Paris might be delusional about Helen's affections for him. Through my reasoning I can conclude that it is perhaps possible that Helen is similarly a Paris-lover, but until I also have some experience that testifies to her love for Paris, I cannot feel certain. Experience is hardly infallible, though, because it only produces abstract knowledge about particular subjects (i.e. Paris or Helen in this case). As much as all of this is true for me as a third party who is observing Helen and Paris, it is also true for each of them with each other. Paris and Helen would both have *clearer* understandings of the other as an individual that loves him or her, but such an understanding would always be at least minimally confused. Even though their sense of the other as an individual who loves them can be attested to by reason and experience, neither can know all the 'marks' that contribute to why they have become the kind of substance who invariably loves Paris/Helen. This contributes to why I think Leibniz's system of relations includes intimacy; it reinforces the fact that there is always some mystery and unpredictability about the other – it staunchly asserts that the other person is always autonomous and distinct precisely because one cannot give an exhaustive account of this distinction. Nevertheless, the fact that the relation is not entirely extrinsic to either subject does assert some congruence in the related subjects. This intimacy of congruence then recognizes difference but also allows for a privileged interaction with that other subject.

While no one can give an exhaustive account of another subject, I think that focusing on this overlooks that the depth of my certainty about my own relations is more deeply rooted in myself *as a particular substance*. That is, while my understanding of others' relations can be

quite clear, and my understanding of my own relations can be *clearer,* ultimately neither can be

distinct since they pertain to particular substances. As Leibniz notes in *Monadology*, no

individual soul can unfold all its folds at once.[55]

I think one of the more interesting articulations of Leibniz's account of how a substance

knows itself comes from a discussion in *New Essays* where he discusses "intimate and immediate

perception."[56] It should be noted that I have only found one instance of Leibniz discussing

'intimate and immediate perceptions' and this comes from a discussion in *New Essays* centered

on the consistency of identity.[57] However, I think these passages still reveal something important

about Leibniz's overall approach to self-knowledge and provides insight into how this

knowledge of oneself is ideal and relational as well.

Knowing Oneself

Leibniz discusses these perceptions in *New Essays* in the following passage:

[A]n identity which is apparent to the person concerned – one who senses himself to be the same
– presupposes a real identity obtaining through each immediate [temporal] transition
accompanied by reflection, or by the sense of *I*; because an intimate and immediate perception
[*une perception intime et immediate*] cannot be mistaken in the natural course of things.[58]

Right at the start, it should be noted that this passage is part of a response to Locke regarding the

matter of memory and identity. It should also be noted that I have found no other text in which

Leibniz used 'intimate and immediate perception'. That said, I think that this passage does a lot

to illuminate what exactly I can know clearly and distinctly about myself. While as a monad I

represent the entire universe, most of this universe is only known by me in a very confused way.

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[55] GP VI 617 (AG 219) [1714]
[56] A.vi.6, 236 (RB 236) [1704]
[57] That is, is an identity consistent even if memory is not? An example of these inconsistencies would be
when we do not remember our childhood or suffer memory loss.
[58] A.vi.6, 236 (RB 236) [1704]

However, that which is most *intimate* to me is known the most clearly, but even this is not known distinctly since it pertains to a particular subject.[59] I take this to mean that even a simple substance is only known by itself *as a complexion*. A complexion is a unity assumed as a minimum despite being composed of other lesser unities (e.g. the number 1).[60] Knowing oneself in this way provides *correct* information about oneself, but it is not exhaustive. I think that it is important to show here that Leibniz is asserting a relation of subject-object even in the case of my knowledge of myself.[61] If this is the case, then it means that I have a certain relationship with myself as an object that cannot be distinctly known. Nevertheless, as with any clear perception, this knowledge of myself is not in error even if it is not complete, i.e. distinct. This also means that relational predicates are one of those things which I can know clearly, but not distinctly, about myself. This means that even my most intimate knowledge of myself is still ideal. Furthermore, it means that there is nothing in the world that a substance can know perfectly, meaning Leibnizian substances are in some ways defined both by their inability to comprehensively understand and their potential for intimate understanding, which may well be aspects of the same capacity of perspectival representation. What I think is important here is that Leibniz himself is actually utilizing the language of intimacy to discuss a kind of knowledge that is correct but also limited in its comprehension.

In the passage from *New Essays*, these intimate and immediate perceptions are limited in terms of identity through time (i.e. memory), if this is simply a question of clear recollection of

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[59] Leibniz does claim that one can enumerate the sufficient marks of ideas that are understood by various senses, meaning that perhaps it is possible that one has distinct knowledge of some aspects of oneself. However, distinct knowledge of *parts* of oneself is not the same as distinct knowledge *of oneself*. It is the latter which makes self-knowledge an abstraction.

[60] See Chapter One for a more detailed analysis of complexions.

[61] The subject being the reflecting self and the object being the self that is reflected upon. It may be helpful to think of this self-object as the impossible to fully unfold aspects of myself which are akin to an unconscious, although that language is clearly anachronistic.

past events then perhaps predicates might not be the kind of knowledge that can be intimately and immediately perceived. The conversation between Philalethes/Locke and Theophilus/Leibniz spans a number of considerations but the passage regarding intimate and immediate perceptions is brought about by Philalethes' supposition that a 'moral identity' could "be preserved in the absence of any real identity."[62] To clarify, a 'moral identity' seems to be a kind of empirical identity insofar as it is "apparent to us ourselves," whereas a 'real identity' is the 'self' which "makes real physical identity [*fait l'identité reelle et physique*], and the appearance of self, when accompanied by truth, adds to it personal identity."[63] While Leibniz is willing to concede that memories provide vivid consistency of one's existence through time, he also points out that he cannot remember much about his infancy, yet still considers himself the same person.[64] Memories are the appearances of self which, when accompanied by our real identity, produce a personal identity. Leibniz is a bit vague on how exactly this works, but he does go as far as to say that if someone suffered from amnesia and was provided false information about their past, then one's consciousness may actually 'speak out' to reject this fabricated personal identity because it is incompatible with one's real identity.[65]

Therefore, while memories are clearly apperceived aspects of the self's consistency through time, memories are not the real identity which is immediately and intimately perceived. As Leibniz himself put it; "So, not wishing to say that personal identity extends no further than memory, still less would I say that the 'self', or physical identity, depends upon it."[66] Lastly, Leibniz claims that "It is the continuity and interconnection of perceptions which make someone

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[62] A.vi.6, 236 (RB 236)
[63] Ibid, 236-7 (RB 236-7).
[64] Ibid, 236 (RB 236).
[65] Ibid, 237 (RB 237).
[66] Ibid.

really the same individual; but our awareness – i.e. when we are aware of past states of mind – prove a moral identity as well, and make the real identity appear."[67] Therefore, if the self which is intimately and immediately perceived does not depend upon memory and even extends beyond it, then it would seem as though the real identity which is intimately and immediately perceived pertains directly to one's continuity of self.

Now, these interconnections might not be what is explicitly known through memory, but memory (or reflection) contributes to making real one's personal identity. In other words, one's personal identity is an ideal sense of self produced through the abstraction (memory/reflection) of the particular whole (the self which expresses the entire universe). I recognize that Leibniz nowhere utilizes the terminology of 'ideal' in this discussion of identity in *New Essays*. However, his claim that memories (which provide an apparent sense of self, i.e. a moral identity) attest to a more profound real identity that expresses the continuity and interconnection of perceptions which comprise one's self is important. The continuum of interconnected perceptions is not something that becomes completely apparent for the reflecting mind in question.[68] Yet, intimate and immediate perceptions do provide a high degree of knowledge about oneself. This knowledge might well be quite limited, but I argue that it does still provide knowledge about relations as well. As a monad I represent the whole universe, and if I know clearly about myself that I am a lover, I also unfold a little bit of this grand representation of the universe and gain a clearer understanding of something beyond my identity but not exactly outside of me. Yet this clarity is quite minute in comparison to what is confused – I may know that who I love is beloved by me, but I do not know if they love me in return or if they even truly exist.

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[67] Ibid, 239 (RB 239).
[68] Ibid.

My knowledge of another person as beloved by me is the most I can say with absolute certainty about that other person no matter how 'certain' I may feel about other aspects. The other person remains largely enfolded in my perceptions of them. However, this enfolding is not the same as absence, as my representation of the entire world guarantees that I do represent the other person fully, but this full representation is only virtually contained in the background of my clear understanding.

Moreover, my knowledge of this person as beloved by me is *not* knowledge of a relationship. Rather, it is only definitional knowledge derived from my own awareness of myself as a lover. I do not have the same certitude (if any at all) regarding qualities of another person because they are differentiated from me, my perspective of them is comparatively confused (as is theirs of me). Yet my *representation* of them is clear, and my representation of them is as *beloved*, therefore this aspect of them – because it is connected to an aspect of myself – is clearly known. While it is the case that my relational knowledge is an aspect of some other subject, it is entirely possible that they are not aware of it, likewise, I am not aware of many relations that correspond to me. Even if both Paris and Helen are aware of each other and love one another, it is not the case that Paris/Helen's understanding of the other as 'beloved' matches Paris/Helen's own understanding of his/herself as beloved. What I find intriguing about this knowledge is that it does assert otherness but with only minimal knowledge of that other person. My knowledge may appear solipsistic in terms of clarity, but it cannot truly be solipsistic insofar as it represents an other of whom I have only minimal knowledge. Again, this is only an assertion and not a proof, as it is also true that my love of unicorns 'asserts' the reality of unicorns. The test of this assertion comes through experience or reason.

This is also where it becomes clear that there are different levels at which the intimacy of relations operates: there is an intimacy of the complex, as in the case of a subject reflecting on oneself which shows the inability to render perfectly any particular subject in the mind. There is also an intimacy of similarity or coincidence, and it is this which is at play when there is only definitional knowledge of relations (i.e. I am a lover of X, so X is beloved by me). Understanding this similarity as coincidence is a problematic approach to relations as it implicates a subject into a "relation" while they may not be even be aware of participating in it at all. This issue is that the coincidence of the related subjects is understood as explicit even though it is only virtual. In the virtual sense, the relation is correspondingly represented, but in the explicit subject the relation is not identically represented. Assuming Helen is real and that as a monad she represents the entire universe, then yes, she represents herself as 'beloved by Paris'; but if she has no idea that Paris exists let alone loves her, then to call this kind of relation 'intimate' would be insipid and vacuous. However, at the virtual level, this coincidence can be understood as intimate in a more reasonable way. The problem, as Leibniz notes, is that the mind seeks identity in relations. [69] If the coincidence between Helen's representation of herself as beloved by Paris and Paris' representation of Helen as beloved by him is understood as explicit (identical), then it appears as though the same relation exists identically across multiple subjects and the individuality of each subject is lost. Therefore, while the intimate and immediate perception of oneself can attest in a limited way to the virtually coincident relations one has with others, it does not clearly testify to how those subjects themselves represent that relation from their perspective. When a coincidence is understood to be explicit, then what is not rendered by the mind's abstraction of the particular subject in question is overlooked, and as Leibniz

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[69] GP VII 401 (AG 338) [1716]

acknowledges, this is when abstraction falls into error. [70] There is also the intimacy of congruent and concurrent relations but these, as well as the previous two, will be discussed in greater detail in the next chapter. For now, it is enough to know that relational knowledge is ideal, even in the case of my relation to myself and that my knowledge of my own relations provides accurate but myopic understandings of others' representations of their relations. While this knowledge of self can be intimate and immediate, carrying immense clarity, even this clarity has limits when it comes to other subjects. While this knowledge can gesture toward others, it cannot provide knowledge that is as clear as my own intimate and immediate knowledge of myself.

Leibniz utilizes the imagery of folds to describe both motion and the internal structure of the soul. In 1677, the year following Leibniz's account of motion via folds, he claimed that motion and space are relations, a claim he echoes in his *Note on Foucher's Objection*, in 1695.[71] That being the case, it is not until the 1690s that Leibniz will start using the term 'ideal', with increased usage after 1700s, and it is from the 1690s until his death that he begins to claim that relations are ideal.[72] A large part of my project has been to show that relations between substances are a kind of fold. In doing this, I've tried to show that what makes relations ideal is that they are abstractions of indefinite perceptions. Likewise, any fold always contains an infinity of other folds, and because of this I am arguing that any fold is always an abstraction of the whole motion, and moreover, that any fold in motion is ideal. More than this, it is not so much that relations are ideal, but that *folds are ideal* and relations insofar as they are abstractions with

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[70] A.vi.6, 57 (RB 57)

[71] A.vi.4, 277 (LoC 256) and A.vi.4 266 (LoC 224) [both in 1677], GP IV 491 (AG 146) [1695].

[72] GP VII 401 (AG 338-9) [1716], see also GP II 96 (AG 86) [1687] A.vi.6, 227 (RB 227) [1704], GP II 486 (DB 327) [1714]. In these other texts Leibniz does not call relations 'ideal' but does refer to them as *rem mere mentalem, entia rationis,* or *ens rationis* which serve "only to abbreviate our thoughts and to represent the phenomena" (GP II 96; AG 86). Although Leibniz does seem to recognize that it is not very useful to refer to relations as *ens* in 1712 (GP II 471). See also Leibniz's Fifth Letter to Clarke in 1716 wherein he states that space and time are ideal (GP VII 395; AG 335).

indefinite perceptions contained within them, are also a kind of fold. One way in which something is ideal for Leibniz is when the whole precedes the parts, and any fold is taken as a singular whole despite its infinite divisibility. Further, Leibniz claims that the consideration of ideal knowledge is still entirely useful, and insofar as relations are considered ideal, it is also a quality of the ideal that what is ideal is not completely extrinsic from the subject considered. The connection between the subject (who represents the world) and the ideal abstraction of the other subject is an intimate and immediate one that provides clear but not distinct knowledge. Therefore, whenever an ideal understanding is achieved it is always through some connection to the other subject considered. I am also claiming that what is intimately and immediately perceived that does not fully become represented in the ideal abstraction is the *virtual whole*. In that way, there is a virtual coincidence between the subject considered and the intimate and immediate perceptions of the representing subject. That is, there is a virtual coincidence between any fold of motion and the entirety of that motion and likewise there is a virtual coincidence between any representation of a relation and the virtual relation which the representation expresses.

However, what remains to be addressed is what role activity plays in this discussion of relations and folds. Higher levels of activity are connected with greater degrees of clarity and distinctness for Leibniz, so it stands to reason that higher levels of activity create ever more adequate representations. However, as Robert Adams pointed out with shape, an ever more adequate representation is still only *more* adequate and never perfect.[73] Just as a reformulation of a relation in terms of logical reduplication, such as 'Paris is a lover and, by that same fact, Helen is a loved one" is a *more* adequate way of stating that relation than simply stating 'Paris loves

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[73] Adams, *Leibniz*, 230.

Helen', both the reduplicative reformulation of relations and the more complex understanding of shape are nevertheless still only abstractions. The possibility that my knowledge of what I am related to can become ever clearer is interesting and needs to be examined, but what else needs to be examined is what the ruling-out of perfect knowledge of relations means for individuality outside of Leibniz.

Before jumping into a discussion of activity and appetite, there is one other aspect of Leibniz's usage of ideal that must be addressed: ideal causation. Leibniz discusses ideal causation in *Monadology* as well as his letters to Des Bosses. Before considering any discussing of activity, it is necessary to consider what ideal causation means for Leibniz and how it is related to representations of phenomena by monads.

Ideal Causation

A primary subject in Leibniz's letters to Des Bosses is the consideration of the eucharist, and how bread and wine might be changed into the body and blood of Jesus. One way of understanding how this substantial change could occur would be if the monads of Christ's body were the ideal causes of our phenomena, that is, "[the monads of Christ's body's] perceptions were such as had been in the monads of the bread and wine, as ideal causes of this sort of our perception, and to that extent they would deserve to be called subjects of apparent accidents."[74] Leibniz rejects this as a possible account of the eucharistic transformation, but his statements about ideal causality need to be considered. Leibniz provides an explanation of ideal causes, stating: "ideal causes contain the reason for the causation of other perceptions through their own

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[74] GP II 460 (DB 275) [1712]

perceptions that correspond to them."[75] While this is an explanation, it is also a bit convoluted; I

think Leibniz's usage in *Monadology* is consistent with his statement to Des Bosses, but clearer:

> But in simple substances the influence of one monad over another can only be ideal, and can only produce its effect through God's intervention…For since a created monad cannot have an internal physical influence upon another, this is the only way in which one can depend on another….It is in this way that actions and passions among creatures are mutual. For God, comparing two simple substances, finds in each reasons that require him to adjust the other to it; and consequently, what is active in some respects is passive from another point of view: *active* insofar as what is known distinctly in one serves to explain what happens in another; and *passive* insofar as the reason for what happens in one is found in what is known distinctly in another.[76]

As I understand it, ideal causality is the way in which representations of the world remain

harmonious among monads insofar as their representations of the world align. Now, this

alignment occurs in terms of activity which is itself hashed out in terms of distinct knowledge.

To put it simply, ideal causation is the distinct knowledge that leads to the corresponding ideal

abstraction in another subject.[77] This causation is termed 'ideal' because it produces change only

in abstractions, not the internal structure of any substance. Therefore, when Leibniz says that "no

one becomes a widower in India by the death of his wife in Europe unless a real change occurs in

him."[78] I take the death of the widower's wife to be the ideal cause of the man being a widower.

Being a widower is a relation, an ideal thing, it is an abstraction following the ideal cause

(perception of the death of his wife). The ideal cause and the ideal abstraction are not identical,

but the ideal cause is the explanation for the abstraction. The ideal cause is perceived in its

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[75] Ibid.

[76] GP VI 615 (AG 219)

[77] As I have mentioned, Leibniz is quite clear that substances cannot cause anything in one another but that they do accommodate themselves to one another. Because this accommodation is not, strictly speaking, causal for Leibniz, I will be utilizing language that approaches 'cause' but does not institute a fully causal relationship.

[78] GP VII 321-2 (L 365) [around the 1690s]

totality, but it is only apperceived in a perspectival way. It is important that it is a change only in what is apperceived; that is, it is a change in the modifications (predicates) of the monad, not the perceptions of the monad. It cannot be that the change is in terms of perception itself, because every monad perceives the world equally. If a change in the perceptions of monad A led to change in the perceptions of monad B, then monad A's perceptions would be prior to monad B's. Therefore, Leibniz clarifies what ideal causality truly affects in another letter to Des Bosses: "I think it should be said that ideal causes contain the reason for the causation of other perceptions by means of something other than perceptions corresponding to them—imagine that it is by means of some accidental modes prior to the perceptions themselves."[79] Consider it this way, distinctly knowing that Paris is a lover of Helen is the ideal cause of knowing that Helen is beloved by Paris, and the opposite would hold as well. There is no change in the *perceptions* of either Helen or Paris, rather, there is a change in their modifications (lover/beloved) based on this ideal cause (the representation of the world, particularly the representation of Helen for Paris and Paris for Helen). Therefore, it seems clear why ideal causation is rejected as a way of describing the substantial changes that occur in the eucharist: the change brought on by the eucharist is more than a modification of the bread and wine, it is a complete change of the substance.

It seems to me, given what Leibniz stated in the passages above, that the changes in modifications occur in terms of activity and passivity (lover/beloved), making these changes in modifications essentially changes in expression of force under the law of conservation of force. Before addressing this law of conservation of force and how it plays out in relations, I think it is best to first understand more clearly what drives all activity in a given substance and what the

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[79] GP II 470 (DB 295) [1713]

limits of this activity are. Therefore, it is first necessary to discuss appetition before moving onto the conservation of force.

The Conservation of Appetite

Leibniz realizes that the best the human mind can do with perfect clarity is to provide an abstraction of relations. Nevertheless, these abstractions are still useful. That said, there is still far more to any given relation than can be expressed explicitly yet this non-explicit (virtual) content is still *perceived* even if it is not *apperceived*. The question now is, what drives someone to apperceive X rather than Y? The answer, for Leibniz, is appetition;

> The action of the internal principle which brings about the change or passage from one perception to another can be called *appetition*; it is true that the appetite cannot always completely reach the whole perception toward which it tends, but it always obtains some part of it, and reaches new perceptions.[80]

This passage lines up quite well with what I have established thus far: related subjects may strive toward expressing a relation to one another, but they only obtain a limited explicit predicate such as 'lover of' rather than the whole relation 'lovers'. Nevertheless, subjects *understand themselves as related* to one another because of their similarity. This understanding produced by the mind is an *ideal abstraction* of the given relation. These abstractions themselves may be clear, but they are derived from confused perceptions of the relation, but I would argue that it is also these abstractions which are the "new perceptions" that Leibniz mentions in the passage above. A subject's appetition, therefore, directs it toward desires that are not even fully obtainable. The puzzling thing about this conception of appetite is that, since monads lack nothing, any endogenous desire should be fulfillable.[81]

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[80] GP VI 609 (AG 215) [1714]
[81] Jonathan Bennett raises a very similar concern in his piece "Leibniz's Two Realms." (2005)

I am going to argue that the reason these endogenous desires cannot be fulfilled is because of the law of the conservation of force. Essentially, the law asserts that no substance is ever entirely passive *or* active in any given occurrence. As I will show, this holds for phenomenal occurrences among bodies just as much as it does for perceptions. Therefore, the thrust of the argument I'm developing is that any appetitive desire to express a relation can never do so in a comprehensive way, because there is always another substance involved in any relation. This other participant in the relation implements the law of conservation pertaining to the relation. No subject involved in the relation can comprehensively express the relation because doing so would violate this law by making one subject strictly passive and the other strictly active. I think this is an important facet of Leibniz's theory that has relevant ramifications on his theory of relations and my own understanding of this theory of relations as intimate. To make this argument more compelling, though, I need to examine more closely the law of conservation and some aspects of Leibniz's conception of force.

It is in response to this issue of unresolvable endogenous desires that Pauline Phemister's application of Leibniz's conservation of force becomes necessary to consider. This examination requires a brief overview of Leibniz's categories of monadic force in his *Dynamics*: all substances have primitive active and derivative forces, but they also have derivative active and passive forces. A *primitive active* force is the *conatus*, entelechy, or soul, that serves as the "primitive motive force" for a given substance.[82] Whereas *primitive derivative* forces are those "resulting from a limitation of primitive [active] force through the collision of bodies with one another, for example, is found in different degrees."[83] Leibniz clarifies this distinction between *primitive* active and derivative forces by explaining that in, for example, a collision, the active

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[82] GP IV 511 (AG 162) [1698]
[83] GM VI 236 (AG 119) [1695]

force is the expression of resistance whereas the derivative force expresses "being acted upon" by the other body.[84] Therefore, given that monads cannot truly act upon one another, both 'resisting' and 'being acted upon' are understood by Leibniz as active expressions. However, 'being acted upon' is a derivative kind of activity because it expresses the 'passivity' of the action. Within this category of derivative force, there are passive and active forces: the passive force is typically discussed as a dormant "solicitation to motion" whereas active derivative force is the "ordinary force" associated with motion.[85]

While these derivative forces are responsible for the expression of motion and resistance in bodies, this would not be the case if not for the fact that primitive active forces (souls) were attached to bodies. As Donald Rutherford puts it "A substance's primitive active force acts in a determinate manner productive of change only insofar as it is modified by some derivative force or appetition."[86] Phemister's account agrees with Rutherford, explaining that, "did the soul not possess an organic body – that is to say, did the soul not have an aggregate of substances over which it is dominant – the soul's primitive force would not be modified as derivative force."[87] Therefore, when souls (monads) express the materiality of bodies this expression of force is done in a derivative way. An appetition, being a kind of desire or striving, is odd because it is not the recognition of lack (since monads cannot lack) but is instead an inclination to act or produce in a way that is in harmony with every other substance. Of course, this only reinvigorates the question of whether the appetition can be said to strive toward something and also not fully achieve it; now that I have laid out a rudimentary understanding of the division of force in Leibniz's *Dynamics*, I feel it is possible to answer that question.

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[84] Ibid, 237 (120)
[85] Ibid. 238 (121)
[86] Rutherford, "Leibniz on Spontaneity," 165. (2005)
[87] Phemister, "Substance and force: or why it matters what we think," 529. (2017)

Given Leibniz's understanding of force as always expressing both the passive and active aspects of an event such as a collision, this means that no substance is ever *only* active. Even when doing something that requires exceptionally little active force, such as biting into a mound of whip cream, the whipped cream is also, correspondingly, *resisting that action*. Therefore, since no substance is ever entirely passive or active, this points to Leibniz's theory of the conservation of force. Now, this does not mean that resistance (passive force) is also activity. Such a conclusion would render all substances active all the time, which would also violate the law of conservation. Rather, Leibniz's point is that 'passivity' does not equal 'suffering the occurrence of something'; passivity is instead recognized as the expression of resistance. The law asserts that no action can understood simply as active or passive, it is always some mixture of both. This is explained more fully and clearly by Pauline Phemister:

> Bodies change in accordance with what is happening in the external world, but without any actual exchange of force occurring between them. Each body simply moves by its own derivative active force and resists by its own derivative passive force, but nevertheless in harmony with the corresponding increases and decreases of the derivative active and passive forces in the other. With all increases in the active forces of bodies matched by equivalent decreases of the active forces in others, the overall balance of forces is maintained and the total amount of derivative active force in the universe is conserved.[88]

Therefore, it seems to me that this conservation of force also makes it so that a given appetition will never be *completely* fulfilled when it requires acting upon or with another. To render this in terms of perceptions rather than collisions, this means that no matter how clear my understanding may seem, there is always some degree of confusion as well. Therefore, while Paris clearly and distinctly understands that he loves Helen and that Helen is beloved by him, his understanding of precisely why he loves Helen or why she is beloved by him is less clear to him. Paris' love, as a

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[88] Ibid, 531.

perceptual action, is resisted by Helen insofar as Paris cannot know everything there is to know about Helen. This 'collision', or congruence, of Paris' love for Helen and her love for him, is something that neither individual has a *comprehensively* clear understanding of because their perception of this relation is subject to the conservation of force. That is, each subject's representation of their relationship with the other is also *resisted* by that other subject to some degree. Nevertheless, if this 'collision' is the same as the congruence I have been discussing thus far, then the congruence/collision is still understood to a degree by the involved substances (and in differing ways for each substance) but not completely understood or expressed by either. However, if this is a valid understanding of how relations are expressed by substances, according to Leibniz, then this has an interesting effect on 'endogenous' monadic activity. If monads are perfectly self-contained, then there is no need for a conservation of force when one monad is perceiving another. Yet the fact that Leibniz does discuss perceptions and actions in this way hints at the fact that the interconnection of monads is more impactful than scholars have credited it to date.

Think of it this way: if Paris and Helen possessed equal physical strength and stamina, then any game of tug-a-war between them would always be a stalemate. Neither Helen nor Paris would be able to tip the scales of resistance in their favor. I understand relations to be, at times, operating quite similar to such a game of tug-a-war, but also differently as well. The primary difference is that people express their relations in *congruent* ways rather than evenly matched ways. Now, while I would argue that it is possible for relations to be evenly matched in terms of congruence, it is quite common for relations to be produced through a congruence of *inequality* as well. Consider for example any abusive relation, relations between white society and people

of color, patriarchal society and women, etc., although there can also be more positive congruent relations of inequality such as between parent and child, caretaker and patient, and so on.

This conception of congruent relations of inequality also opens the door for an interesting analysis of relationships toward fictitious elements: if I say, "I love unicorns, and unicorns are beloved by me", then what is supplying the resistance to my expression of this relation? One possibility is that it is other people who also know the concept 'unicorn'. Perhaps my representation of unicorns is as blue-haired with rainbow horns and they're able to speak English, and so on with other qualities. However, the resistance to this representation is everyone else's representation of 'unicorn', which does not perfectly match my representation of unicorns. That is, my relation is not only to the concept of 'unicorn' – which cannot 'resist' my own conceptualizing of it – my relation is also to others' conceptions of 'unicorn' which can resist, or even contribute to, my understanding. One might wonder whether this would apply to the invention of some concept by an individual. That is, what if I conjure up the idea of a new creature? It would seem that since no one else would have knowledge of this newly imagined creature then there would be no conservation of force. Now, a completely different way of understanding these kinds of relationships (relations toward non-existents), is that it is impossible to have such a relation with something like a unicorn since it could not participate in the conservation of force in that relation due to its non-existence. Leibniz does not provide any commentary that I am aware of which would apply to this particular situation, but in general his commentary on imagination claims that imagination is related to the understanding of qualities or essence but does not provide an understanding of existence.[89] Therefore, I would always lack a perfectly clear and distinct understanding of any imagined subject.

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[89] GP VII 271 (L 478) [1696] and A.vi.1, 269 (L 89) [1667]

So, why is this related to appetition and the conservation of force? Because appetitions are what incite our interests, but they are not always fully satiated due to the conservations of force. Given this, if the conservation of force applies to the endogenous drives of monads, then this means that monads are fundamentally more engaged with one another than has been previously understood. To be clear, I am not claiming that monads directly affect one another. Rather, monads adjust themselves in order to be in harmony with one another. Yet, I am arguing, that when an adjustment is made, this is done through an awareness of the other.

Involuntary Appetites

My main reason for explicating the role of appetition in relations was to restore agency and activity to the formation of relations rather than understand them as akin to simple mathematical conclusions. However, this is only possible if Leibniz himself provides evidence that what is produced through appetition is produced voluntarily. On this point, there is a slight bump in the road found in *New Essays*:

> I shall say that volition is the effort or endeavour (*conatus*) to move towards what one finds good and away from what one finds bad, the endeavour arising immediately out of one's awareness of those things...There are other efforts, arising from insensible perceptions, which we are not aware of; I prefer to call these 'appetitions' rather than volitions, for one describes as 'voluntary' only actions one can be aware of and can reflect upon when they arise from some consideration of good and bad; though there are also appetitions of which one can be aware.[90]

This seems a near fatal blow to my conception of relations being produced through the free acts of agents. After all, Leibniz makes a good point – how can one be said to do the same thing both freely *and* unconsciously? My examination of the virtual as productive of relations rests in part

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[90] A.vi.6, 173 (RB 173)

on the understanding that these virtual aspects of relations never become explicit, and if they are not explicit then it is not possible to be conscious of it. Moreover, in the passages that follow, Leibniz makes it clear that all beings except God are subject to passions which incite them to act one way or another.[91] All this being said, the fact that Leibniz rarely associates appetition with volition does not mean that a substance is determined into participating in a relation. It is more often the case that appetition is defined simply as "the striving from one perception to another."[92] By this definition, appetition represents a form of desire that is without lack.[93] Understanding appetition as operating without lack seems to answer the question of freedom. That is, without some necessitating lack, the actions that follow from one's appetition are truly one's own. For instance, if I am hungry then my need to eat is arising out of lack; however, if I am a being who need not eat to stay alive but still chose to, then my wanting to eat would not result from a lack. In this case, my desire to eat is simply an expression of who I am. For Leibniz, what results from appetition is likewise not due to lack but by the unique expression of oneself in the world. Moreover, Leibniz states that all these passions and appetitions only *incline* but do not *necessitate* our actions.[94] Therefore, while substances might be inclined toward all their relations, these relations are not as certain and necessary as mathematical conclusions. Furthermore, even

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[91] Ibid, 175 (RB 175).

[92] GP III 574-5 (L 662-3) [1714] see also, GP VI 598 (AG 207) [1714], GP VI 609 (AG 215) [1714], GP II 270 (AG 180) [1704]. It will be noted that these are all writings from later on in Leibniz's life, yet these are only places where he is explicitly defining appetition *and* referring to it as appetition rather than an internal notion. In earlier texts, like *Discourse on Metaphysics*, Leibniz considers an identical principal of diachronic structure but either lumps it into the terms 'notion' or 'nature', or he discusses the same process of moving from one perception to another without explicitly naming it 'appetition' (GP IV 436-40; AG 44-7).

[93] Therefore, appetition is very much synonymous with *conatus*, and in his 1702-04 encyclopedia he even defines *Appetitus* as "*conatus* brought about from cognition" (C 491, my translation).

[94] A.vi.6, 175 (RB 175)

though relations (insofar as they are perceptions and apperceptions) are pursued due to appetition, the absence of lack in appetitive desire makes this pursuit entirely one's own.

For some this may not be the strongest formulation of agency in relations, but it does still assert that relations are not merely *results*. Yet, because of the conservation of force, it is clear to me that relations are *both* actively produced and passively developed. However, one of the other questions that started this analysis of appetition was: why do we pursue some relations rather than others? Why does Paris fall in love with Helen rather than someone else? If relations are produced through inclinations toward what is good, then what directs these inclinations toward a specific good? I argue that it is the interconnection of all substances that, through the infinite number of large or small (even infinitesimal) influences of resistance and passivity, aid in mobilizing these inclinations.

In this sense, no relation is developed out of the congruence of only the immediately related subjects, all relations are developed out of a universal concurrence (the interconnection of all monads). This is nothing other than Leibniz's theory of pre-established harmony seen in a way that makes the 'pre-established' aspect seem less constraining. Lastly, it is this universal congruence of relations that shows that the intimacy of relations is not limited to the subjects immediately involved in the relation, but that the intimacy is between *all* substances.[95] The intimacy in relations is the continuum of 'contiguous' actions and apperceptions which shape all relations for all substances. Leibniz's theory of relations does not preserve the intimacy between Paris and Helen only insofar as they alone have the most clear and distinct understanding of their love (that is nonetheless still confused to some degree), but it also restores a sense of intimacy to the universal interconnection of all substances. Substances that have no awareness of either Paris

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[95] I realize that such a public relation is difficult to conceptualize as 'intimate' and I plan to address this in the following chapter.

or Helen should still be understood as congruent in the production of the relational statement, "Paris and Helen are lovers." Here, though, the virtual aspect of this production is all the more evident given that the influence of the world of substances upon the individual's relations is almost entirely unrecognized by the individual. No substance's appetitions operate in isolation, they are always operating *in the world*.

The Continuum of Relations

Here, finally, it seems that I can return to the concept of the material continuum and the facts that all bodies within the continuum are contiguous and that any change always ripples out to all other bodies within the continuum. There is no simple activity or simple passivity with regard to bodies in the continuum: every body is always expressing both activity and passivity to varying degrees. It is this structure of the continuum that necessitates and demonstrates the conservation of force in Leibniz's work; if everything is always affecting everything else, then *those* affections are in turn *also* affecting everything else.

I argue that Leibniz held relations to be operating in the same way as the effects of actions on bodies in the material continuum. Moreover, I think this also explains why Leibniz considers relations to be ideal. My understanding of a relation is always dependent upon my own abstracted understanding of that relation, but this is not a comprehensive account of what that relation *is* insofar as the relation is also represented by others and affected by each of those representations.[96] This is perhaps easy to accept when it comes to relations between individuals like 'lovers', 'friends', and 'family'. Yet it is hard to understand how a comparative relation like 'taller than' or 'weaker than' are also operating in this same fashion. These relationships of comparison do not seem to be relying on the consistency of a subjectively understood concept

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[96] GP 321-2 VII (L 365) [around the 1690s], A.vi.6, 227 (RB 227)

such as 'friend' or 'unicorn'. Something like the measured height or strength of a person seem fairly (if not entirely) objective.

While it might be possible to argue that length, power, and other such evaluable characteristics are also ideal for Leibniz, there is no need given the division of relations that Leibniz provides in *New Essays*. As was discussed in the second chapter, Leibniz claims that relations are of two sorts: *comparison* and *concurrence*.[97] Clearly, relations such as 'stronger' or 'shorter' are comparative relations. In my discussion of relations, I have been focusing on relations of concurrence and congruence, and these are relations such as 'lover' or 'friend'. If comparative relations simply apply to evaluations of apperceived phenomenal bodies, then these are less worthy of deeper analysis in my opinion. As Leibniz stated in the writings on *analysis situs*, some evaluations cannot be done solely through an analysis of quality or quantity. Such an analysis of situation requires an understanding of *congruence*.

However, I have found no text in which Leibniz explains what this analysis of congruence would actually look like or how it would be carried out. I think this is because a full understanding of the congruence of a relationship is the same as an understanding of the *truth* of a relation, something which only God knows explicitly. As for human minds, all that is possible is an abstraction which captures some of the truth and it is these abstractions that are ideal.

Conclusion

I am ready to admit that relations are ideal for Leibniz, but I would qualify this statement by saying that they are ideal in the Leibnizian sense rather than the standard definition. This Leibnizian sense is one in which what counts as 'ideal' knowledge is only abstracted knowledge.

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[97] A.vi.6, 358 (RB 358)

This abstracted knowledge, because it is not comprehensive, is therefore only a potential, or contingent, representation of the thing in question. This ideal representation may not therefore be distinct knowledge, but it is still useful and worthwhile.

Relations, therefore, are ideal insofar as it is not possible for substances (other than God) to have comprehensive knowledge of them. When a substance possesses knowledge of its relations, it does so in a confused way which only abstracts the most clearly perceived aspects of the relation. I argue that this fact forces any reader of Leibniz to reflect more critically on the endogenous production of qualities and perceptions in monads. One might assume that endogenous production, if occurring truly in isolation within substances that lack nothing, would not be bounded by notions of the conservation of force. However, Leibniz is clear that in physics and perceptions, actions are constrained by the conservation of force wherein no single substance can be said to be purely active or passive. To my mind, this points to the third level of intimacy in Leibniz's system of relations: the intimacy of the interconnection of all substances. Clearly this interconnection between monads cannot include actions of cause and effect, but the incredible level of accommodation among all substances should be understood as intimate. If the world was only composed of substance 'A' and God, then there would be no need for a conservation of force or any bounding of the substance's perceptions. The fact that substances do adjust to one another hints at a level of connection that is not causal but *is* influential.

This project began as an attempt to show that relations are a type of fold; however, given the depth of Leibniz's theory of relations and the complexity of terms associated with his theory of relations, I have had to put off showing how everything that I am saying about relations also applies to folds (and this is why I consider relations to be a type of fold). Now that I have examined relational congruence, the virtuality and ideality of relations, shown that continuum of

relations is the intimacy of the interconnection of all substances, and how this interconnection mobilizes the inclinations of each individual substance in the production of its relations, I feel that it is time to provide a more detailed analysis of how intimacy is included into a subject's relations. Therefore, the next chapter will focus on explaining my own understanding of intimacy in Leibniz by utilizing the virtual and ideal aspects of folds.

Chapter V: The Orders of Intimacy

This project started with an analysis of folds, but my work has centered upon clarifying concepts that pertain to Leibniz's theory of relations. All of this work has been done in order to provide evidence for my claim that relations are a type of fold, and that these relational folds are enfolding intimacy. I have argued that intimacy is at play in relations through analyzing the congruence and concurrence of relations that is produced due to a formal virtual coincidence among related substances and the conscious recognition of this relation which can only be ideal (insofar as it is not understood in an explicitly comprehensive way by any subject other than God). Although I have provided arguments for why I believe intimacy is at play in Leibniz's system of relations, I have not yet adequately defined the breadth and depth of the term 'intimacy', nor have I clearly explained how exactly intimacy is 'at play' in relations. To address these aspects of intimacy in this chapter I will create my own iteration of Deleuze's table of inclusion.[1] My iteration of Deleuze's table will illustrate the levels of inclusion in relations and show that what is included in relations at each level is a different order of intimacy.

I consider intimacy to be tied to the limits of ideal (abstract) knowledge. I can only have an abstracted (i.e. ideal) understanding of the other, and by virtue of being an abstraction it is also an incomplete account. While the limitation is important insofar as it preserves individuality, the privilege of being able to abstract a connection between substances should not be overlooked. I believe that intimacy is a *privileged* access to a relation that affords greater clarity and understanding regarding that relation. Relations do not always announce themselves and even when they are known, they are known to different degrees by all who know them. However, I think that Leibniz's philosophy provides a way of acknowledging two things: the

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[1] Addressed in Chapter Three.

potential for all substances to represent a given relation, as well as the fact that the relation will always be most clearly known by those who represent it the most explicitly (i.e. those explicitly implicated in the relation). It is because I think of intimacy in this way that I see Leibniz's system of relations and folds as the metaphysical view which necessitates this intimacy (although Leibniz does not actually call this intimacy). The privilege of intimacy is that it affords an awareness of the similarity and equality of the relations expressed by and between the related subjects, while retaining the ability to distinguish the related subjects. In recognizing this distinction, I can also understand the differences in our expressions of our relation to one another. Specifically, I can understand how these relational expressions are unilateral and nonreciprocal but still virtually coincident. That is, I can recognize them as unique expressions of the world that align with my own that are nevertheless not reactions to my own expressions. These different relational expressions are understood together insofar as they become concurrent with one another in the production of ideal relational statements. The ideal relational statement thereby attests to this concurrence but is also limited insofar as it makes the relation appear 'shared' when it is truly only mutually produced – being a part of this production with others is not the same as being unified with them. The intimacy of relations is this privileged understanding and the privileged role in the mutually produced relational statement. Therefore, an awareness of this limit of intimacy (i.e. that it is not unifying) must remain intact in order for the relation to be a relation and not a unity. Otherwise, the privilege is done away with altogether because there is no privileged understanding of the other if there is no other to be connected with. The irreducible individuality of the other is an unimpeachable fact (all substances have irreducible individuality), but the relational statement can obscure this fact by making the relation appear shared and thereby weakening the privilege of intimacy. In examining Leibniz's

theory of relation, I have found that concurrence is the mode of relations that most fully expresses this intimacy with others, but enfolded within concurrence are the intimacies of complexion, similarity, and congruence.

For example, in the relation 'Paris and Helen are lovers', I take it to be the case that Paris and Helen express this relation more clearly than any other subject. This is not to say that Paris or Helen have a perfectly clear understanding of their relationship, and there may even be aspects of that relationship that others understand more clearly than Paris or Helen. While all substances might represent or be concurrent (to some degree) in the production of this relationship, it is Paris and Helen who are congruent and concurrent in the relational statement "Paris and Helen are lovers". I think that Leibniz realizes that relational statements, while only abstractions of the relation, are still important in terms of the subjects they implicate. I think this is one of the reasons why Leibniz labors over the logical reduplication of relations. The logical reduplication clarifies the subject's role in the relation as well as the limits of that relation.

Logical reduplication makes explicit how each subject's expression of the relation is unilateral and non-reciprocal. However, it is in concurrent relations that the virtual coincidence of these distinct relational expressions is at play. The virtual cannot be made explicit, but it is represented in an abstract (ideal) way in the relational statement. In other words, the virtual coincidence is enfolded in the relational statement and concurrent relations are those which interconnect to produce this enfolding. Furthermore, I think concurrent relations are at play in both the macro level of the world that is the sum of all monads, as well as the micro level of the monad's understanding of its clearly known relations.

This form of interconnection plays on the *liaison* of relations. *Liaison* is a word often used by Leibniz when discussing relations, but it is not just a synonym for relations; it also

expresses the linguistic move of connecting words by altering the pronunciation of those words when they are paired together. Take for example 'mes amis', typically one would not pronounce the 's' at the end of 'mes' but because it is followed by a word starting with a vowel, the 's' is pronounced such that, phonetically, it sounds more like '*mezz-emmies*'. The altering of the pronunciation is the institution of a *liaison*, this liaison does not fully unify these words into one, but instead makes them concurrent in the production of a new pronunciation – they feed into one another in a way that slightly alters how each is verbally expressed. Linguistic *liaisons* take something that is not explicitly expressed in the individual term and make it explicit through the connection to another term. This kind of interconnection, or inclusion, is also what is at work in logical enthymemes, because the virtual inclusion of the non-explicit term is required for the enthymeme to make sense. Just as the 's' is not explicitly expressed in the pronunciation of 'mes' on its own, the virtual premises are suppressed in the enthymeme. [2] The suppression is not an absence or removal, but what is suppressed is only explicitly expressed in the *liaison*. Likewise, for relations, the unilateral and nonreciprocal expressions of one subject's relations become concurrent with another subject's similar and equal expression to produce a relational statement. The relational statement is distinct from each subject's expression but is nevertheless founded on those unique expressions. I take this to be a firm explanation of Leibniz's claim that no denominations are truly extrinsic to the subject, and always have some basis in the foundation of that subject. [3]

However, while the above considerations and claims provide a condensed understanding of the basic concepts that I believe to be at work in intimacy (i.e. privileged knowledge with irreducible limits) they still do not cover or explain the myriad ways in which this intimacy

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[2] A.vi.6, 76 (RB 76) [1714]
[3] Ibid, 227 (RB 227)

occurs, or fails to occur, in subjects. Nor does it fully explain why I consider Leibniz to be providing the means for understanding this kind of intimacy in relations. I think the best way to resolve these issues is to proceed through the different orders of intimacy that I understand to be at play in Leibniz. To do this, I will utilize a table detailing the different orders of intimacy as they are included at different levels in Leibniz's thought. As Deleuze detailed the different orders of inclusion at work in folds, I want to examine the different ways that relations include intimacy. By doing this, I aim to provide further evidence for why relations are a type of fold, continue to clarify my definition and usage of intimacy, and show that Leibniz's theory of relations should be understood as a theory of intimacy.

Review of Folds in Motion

Before proceeding into my analysis of intimacy, it is worthwhile to summarize the understanding of folds that I have developed so far. I have largely focused on Leibniz's *Pacidius Philalethi* as well as worked to unpack Leibniz's conception of the physical world as a plenum (continuum). In the *Pacidius* dialogue, Leibniz develops a theory of motion that is consistent with understanding the continuum of the material world. The problem Leibniz is trying to resolve with this theory is that, if all motions and spaces can be infinitely divided, it is impossible to give an account of the beginning or end of any motion. Leibniz, realizing that there exists in the physical world of matter and motions nothing that cannot be further divided, argues that the principle for these motions and bodies must be something distinct from them that is nevertheless enfolded within. In *A New System of Nature*, written many years after *Pacidius*, Leibniz obliquely discusses this theory and also shows that the tenets of *Pacidius* are still mainstays in his philosophy: "But *atoms of matter* are contrary to reason...There are only atoms of substance, that is, real unities absolutely destitute of parts, which are the source of actions, the

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first absolute principles of the composition of things and, as it were, the final elements in the analysis of substantial things."[4] I think it is clear that these 'atoms of substance' are just another way of discussing monads which are the principles of motion and bodies. Monads are distinct from motions and bodies while still being enfolded within them; and it is the haecceity (i.e. the appetition) of the given monad that gives rise to unique perceptions which can then become actions.[5] In the actual *Pacidius* dialogue, this problem is framed through the Sorites paradox. Leibniz has the character Pacidius use this paradox to show the other main character, Charinus, that it is ridiculous to think that the change in state from impoverished to wealthy occurs through the addition of a single penny (no matter how many times over), but it is also ridiculous to think that this change in state does *not* occur through the addition of a single penny.[6] Essentially, the problem comes down to the fact that at some point the threshold must be crossed (from impoverished to wealthy), and it would seem sensible that such a threshold could be determined by the smallest measurement (a penny). However, such a threshold seems impossible to place, or at least, the placement of any threshold would be arbitrary.

This problem of thresholds presented by the Sorites paradox is complicated further by the fact that there is no smallest measurement of matter or motion. While there may exist no currency smaller than a penny, atoms of matter (if there were any) and instances of motion can always be further divided. Charinus raises his concerns that such an infinite division seems to result in matter being "resolved into a powder, so to speak," and it is this division to powder, or dust, that only arises when trying to defend the constitution of the continuum by points.[7]

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[4] GP IV 482 (AG 142) [1695]

[5] Ibid, 483 (143)
[6] A. VI.3 539 (RA 153-5) [1676]

[7] Ibid, 554 (185)

Therefore, rather than assuming a continuum of points, Leibniz (via the character, Pacidius) proposes that the continuum should be understood as an infinitely flexible body which is structured *into* points through the motions of neighboring parts: "It is just as if we suppose a tunic to be scored with folds multiplied to infinity in such a way that there is no fold so small that it is not subdivided by a new fold: and yet in this way *no point in the tunic will be assignable without its being moved in different directions by its neighbors*, although it will not be torn apart by them."[8] Therefore, the *composition* of any fold is produced by neighboring folds, whereas the *constitution* of these folds is due to atoms of substance, or monads. Thus, we return to Leibniz's consistent position that space is constituted, but not composed of, points.[9]

As with the question of monads and the world they represent, the question becomes, 'which has priority: the composition or the constitution?' However, as Deleuze clarified, for Leibniz *neither* has priority and there is instead a fundamental torsion between monad and 'world' which produces both the representation of the world in the monad and the world through the totality of monads.[10] No fold could be composed without other neighboring folds, but there would be nothing enfolded in the fold at all without atoms of substance. For Leibniz, then, it would seem that any composite substance is a unity of composed material body with a constitutive metaphysical point, or monad. While Leibniz sometimes writes about monads and matter separately – and this may sway some readers to think that Leibniz considers monads to be non-phenomenal or make claims about corporeal substances – I tend toward the more hylomorphic reading and think that Leibniz did not consider monads to exist in the phenomenal world outside of composite substances; "monads are the true atoms of nature and, in brief, the

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[8] Ibid, 555 (185), my emphasis.
[9] GM VI 370 [1695], c.f. C 522-3 (AG 34) [1686] and A. VI. 6 152 (RB 152) [1704],
[10] Deleuze, 26.

elements of things [*les Elemens des choses*]."[11] Monads, insofar as they are what is enfolded in the expression of force (such as motion), are only *virtually* expressed. This virtual expression of activity can only be abstractly, or ideally, understood as a given fold. The principle of activity enfolded within that fold cannot be found through division because division only produces further (albeit more adequate) abstractions.[12]

However, what now draws my attention regarding folds is the claim "no point in the tunic will be assignable without its being moved in different directions by its neighbors."[13] This is of particular interest to me regarding my arguments at the end of the previous chapter that one aspect of the intimacy of relations lies in the fact that monads – perfectly complete substances that lack nothing and can be thought of as worlds in themselves – are always accommodated to one another through their relations and representations. I argued that this showed that monads are intimately interconnected rather than solipsistically harmonized. Given the passages discussing the continuum of space understood as folded, I think that the metaphysical intimacy of relations aligns with the physical concurrence of folds in space and bodies. I will elaborate on how I understand the enfolding of concurrence in relations to be an enfolding of an intimacy of concurrence later on in this chapter. However, for now, I wanted to quickly summarize some key aspects of Leibniz's usage of folds as well as how I understand the virtual, the ideal, and concurrence, to be operating in folds.

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[11] GP VI 607 (AG 213) [1714]. Leibniz does discuss 'bare' or 'stupefied' monads which are without any clear or distinct perceptions, and that these monads are in a state akin to death (although monads never pass away), and therefore they do not participate in composite substances in the way 'regular' monads do (GP VI 610-11; AG 216, c.f. GP VI 600; AG 208). That said, since monads never pass away, I think they must still be *in* the world to some extent and therefore not entirely removed from composite substances.

[12] Adams, *Leibniz*, 230.

[13] A.vi.3, 555 (LoC 185)

My task for this chapter, therefore, is not simply to show how Leibniz's theory of folds aligns with his theory of relations. Rather, in showing that relations are a particular *type* of fold, I want to address what is enfolded *in* relations, namely, intimacy. However, just as Deleuze was able to delineate four orders of infinity and inclusion, I will be showing that there are four orders of intimacy enfolded in the different operations of various relations.

The First Order of Intimacy: The Complexion of Identity

Class of beings	Predicate	Subject	Inclusion	Infinity	Principle
Identicals (absolutely simple)	Forms or attributes	God	Auto-inclusion	Infinity by itself	Principle of contradiction
Definables (relatively simple)	Relations among definers	Extensions or Sizes (wholes and parts)	Reciprocal Inclusion	Infinity by the cause	Principle of similitude
Conditionables (limitatively simple)	Requisites (their relations or laws)	Intentions or Things (what has degrees & tends toward limits)	Inclusion unilateral localizable	Infinite Series with internal limit	Principle of sufficient reason
Individuals (wholly simple)	Events or Modes (relations with existence)	Existents or Substances	Inclusion unilateral cannot be localized	Infinite series with outer limit	Principle of indiscernibles

Table 1, Deleuze's Table of Inclusion.[14]

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[14] Deleuze, 57.

Order of Relation	Predicate	Subject	Inclusion	Infinity	Principle
Complexity	That which is called 'I'	Self	Immediate	Infinity of Identity (i.e. of the particular subject)	Principle of Identity of Indiscernibles
Similarity	Relational Definitions (i.e. logical implications of relational predicates)	Others	Reflexive	Infinity of Representation	Principle of Similitude
Congruence	Equality	Relations	Virtual Coincidence	Infinity of the Relational Series	Principle of Interconnection and Congruence
Concurrence	Interconnection of all substances	The World	Unilateral and non-localizable	Infinity of cause	Principle of Conservation of Force

Table 2, my Table of the Inclusion of Intimacy.

In Deleuze's table of inclusion, the most rudimentary form of inclusion is auto-inclusion, and the principle that Deleuze understands to be guiding this auto-inclusion is the principle of contradiction.[15] Essentially, Deleuze understands this manner of inclusion to be like a necessary truth: its premises demand (or include) that some conclusion be true. At the level of the subject, what is included at this level is the "simple primitive notion" or the "undefinable" term.[16] I think that for subjects, this 'undefinable' term is what Leibniz is referring to as "that which is called 'I'": "It is also through the knowledge of necessary truths and through their abstractions that we rise to *reflective acts*, which enable us to think of *that which is called "I"* and enable us to consider that this or that is in us."[17] To help clarify, I do not think it is the 'I' which one thinks of as one's 'self' that is the simple primitive notion. Rather, it is the *that* which is called 'I' – that which the 'I' is abstracted *from* – that is the simple primitive notion. Leibniz states in

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[15] Ibid.
[16] Ibid, 43
[17] GP VI 612 (AG 217) [1714]

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Monadology that "a soul can read in itself only what is distinctly represented there; it cannot unfold all its folds at once, because they go to infinity."[18] Given this, I take Leibniz to be claiming that what I think of when I think of 'I' is not my fully unfolded self; rather, what I know *as* myself is only my abstraction of myself. The particular subject that is the source of what I call my self is far more complex. This particular subject that I apperceive through abstraction is the *that* which I call 'I' through my abstraction. By referring to the thinking subject as "that which is called 'I'", I see Leibniz making three points that are particularly interesting: 1. If anyone thinks that the Cartesian pronouncement of identity (i.e. I am a thinking thing) is a comprehensive account of 'self', they are severely misguided. 2. The self is a complexion and the *cogito* is only one lesser whole among many which makes up the self. What are these other heterogeneous lesser wholes that constitute the self? For Leibniz, any monad must represent all other monads (although the vast majority of these other monads are only perceived and never apperceived) so surely these perceptions and representations of others play some part in the constitution of the monad's 'self' as well. For Leibniz, the self is not only oneself. It is the world from the perspective of the self in question. Lastly, 3. The world (i.e. all other monads) as it is perspectivally represented and included in a given monad is the simple primitive notion of the monad's 'self' but is also distinct from that monad's conception of self.

What I am arguing is that the world is the *that* which is called 'I' from my perspective. By saying that the subject is what is called 'I', Leibniz is also affirming that the world is what is called 'I' because every subject represents the world from a distinct perspective. The world cannot be without the infinity of monads that constitutes it and no monad can be without the world of monads that it expresses perspectivally. Thus, there is an auto-inclusion of the world of

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[18] Ibid, 617 (AG 221)

all other monads in any 'self'. The world of all other monads from my perspective is also

undefinable insofar as I am a particular subject, meaning I cannot be known distinctly because I

cannot unfold all my folds at once. The world is the primitive simple notion that is included in

me, and while it is difficult to understand how it can be simple or primitive given the complexity

of the world of monads, I think there is evidence that shows this is nevertheless the case. Leibniz

is clear that monads are simple substances and while he might explicitly mean that only in terms

of extension, I believe it is also the case that monads are simple in terms of their notions as well.

My reason for this lies in Leibniz's discussion of bare monads; bare monads are monads

that lack any clarity or distinctness in their perceptions. Such a state would be like being in a

coma; one is still a living being bombarded by lights, sounds, and other perceptions but one's

ability to apperceive is absent. While what is perceived by a bare monad is entirely confused,

these perceptions are still ever present. Leibniz clearly explains that it is from this exceptionally

simple state of confusion (sometimes referred to as a 'dizziness' or 'stupor') that all

apperceptions emerge.[19] Therefore, what is called 'I' must also emerge out of this stupor of

perceptions. What is always being perceived by monads in this stupor is the world of all other

monads. I also think Leibniz would agree that this stupor is a primitive state of that monad's

notion (i.e. soul) insofar as apperception has not unfolded the monad's perspective on the world

that it represents.[20] The *that* which is called I is the perspective which experiences these

perceptions of the world. In the primitive simple state, this perspective does not recognize itself

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[19] GP VI 610 (AG 216)

[20] I find "notion" to be a difficult term to pin down for Leibniz. "Notion" is often interchangeable with "concept" and yet at other times seems synonymous with "appetition". I would add that there is also slippage between Leibniz's use of "notion" and "soul" or "entelechy". I think the most likely reason for this ambiguity is that Leibniz adjusted his lexicon to his intended audiences (and usually did so in a way that would make his theory more familiar and accessible to that audience). Therefore, my own clarification in this chapter more explicitly clarifies what *I* mean by notion in this context.

as an 'I', but even though it gains clarity with regard to itself (or at least what it recognizes as *it itself*) it still only confusedly represents the rest of the world it perceives. All this said, one could still easily argue that the bare monad is not simple or primitive since it is so complex in terms of the multitude and diversity of perceptions. However, in *Principles of Nature and Grace*, Leibniz clearly states:

> For the simplicity of substances does not prevent a multiplicity of modifications, which must be found together in this same simple substance, and which must consist in the variety of its relations to external things. Similarly, in a *center* or point, though entirely simple, we find an infinity of angles formed by the lines that meet there.[21]

It is already clear from everything covered thus far that monads are simple substances that are also complex in terms of their modifications and relations. However, the reason I think the above quote is important is because Leibniz is clarifying that even in an *entirely simple* thing like a point or center, there are nevertheless an infinity of angles (relations) formed within that simplicity. Likewise, I think it is fair to say that a bare monad, in its stupefied state, is likewise entirely simple but still complex. It is complex because it still perceives the entirety of the world. Furthermore, even as the monad unfolds its notion and gains clarity about itself (what it calls 'I') there are still countless perceptions that are not apperceived. These apperceived perceptions are *no less* a part of the monad's haecceity than what is recognized as its 'self', or what it calls 'I'. The bare monad is the primitive simple state of the monad's notion. In other words, the world of monads that is always perceived is that which is reflected upon and called 'I' from the perspective of the apperceiving monad.

Furthermore, this knowledge of 'I' is intimate and immediate. Keep in mind that "intimate and immediate perceptions" pertain to a subject's notion of self and that they "cannot

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[21] GP VI 598 (AG 207)

be mistaken in the natural course of things."[22] My knowledge of myself is not incorrect, and is actually quite clear, though not distinct.[23] While a subject's identity is not a necessary truth given that it applies to contingent existent, it seems to me that there is an intimate and immediate relation to my self included in any knowledge about myself. However, keep in mind that in *Monadology*, Leibniz claims it is through knowledge of necessary truths that I "rise to reflective acts" and it is through these reflective acts produced from knowledge of necessary truths that I come to know that which is called 'I.'[24] My intimate and immediate relation to myself is an intimate and immediate abstraction resulting from knowledge of necessary truths. The fact that my knowledge of myself is an abstraction shows that there is a relation between myself (the 'I'), the reflecting subject, and myself as the simple primitive notion (that being the entire world that is unknowable by me given that it is an infinitely complex particular). This essentially means that my abstraction of myself (that which is called 'I') is not identical to myself (the entire universe represented from a specific perspective). The knowledge is still intimate because it is through knowing myself that I also know that there is something more to this 'I' than what I clearly apperceive. To put it in more contemporary terms, I can know that my unconscious is a part of who I am but knowing this does not mean I know my unconscious. My abstraction of the *that* (the world) which is called 'I' carries with it the potential for the keen awareness of the fact that I am more than this 'I', but also the realization that I will never clearly and distinctly know what this 'more' is.

This is not a new philosophical concept given that philosophy has long recognized that the process of reflecting upon something is the first division between subject and object. For

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[22] A.vi.6, 237 (RB 237) [1704]

[23] Well, I can have a distinct knowledge of what I understand as myself since this is an idea, but I cannot have distinct knowledge of the particular subject that I am.

[24] GP VI 612 (AG 217) [1714]

Leibniz, I see a similar inclusion (and division) of the self in the abstraction of self. So how is this intimacy? Because this moment of reflection does not give rise to a continuity between subject and object but is instead the operation of their bifurcation. The institution of the relation (subject-object) cannot be a relation without loss of continuity. An intimate and immediate break in continuity institutes contiguity. While there are no contiguous physical bodies in the intimacy of self-knowledge, there is the inability to produce distinct knowledge of oneself despite having the potential for clear knowledge. Whereas Deleuze focused on the *inclusion*, or *enfolding*, of folds, my focus at this level is the *exclusion*, or *unfolding*, as a prerequisite of intimacy. Intimacy without some form of exclusion is simply continuity.

Why is this intimacy? As I am formulating it here, intimacy is a privileged understanding of the other that gets as near as possible to that other without damaging the integrity of their individuality. There are limits to the accuracy of this spatial language of 'approaching' and 'near', but the point is that intimacy is both similarity and equality with the other and the acknowledgement of that other's inalienable individuality. What I am trying to draw out in this section – by framing the 'I' as a complexion that includes the *that* which is called 'I' – is that Leibniz's system of relations and epistemology makes this intimacy inherent to one's interaction with everything in the world (even oneself), just to varying degrees.

This initial unfolding of the primitive notion of self that occurs by recognizing this notion as 'I' is simultaneously the loss of absolute access to that primitive notion. Apperceptions are the reflections upon certain perceptions, but there are also infinite other perceptions that are not explicitly expressed in the apperception. The apperception of identity is the apperception of an apperceptive self, but this too is produced by infinite other perceptions that are not explicitly expressed. While I may have an absolute certainty that *I* am, everything that comprises that 'I' is

not distinctly known by me. The intimate and immediate moment of reflection includes the initial declaration of self, but in recognizing myself as an object to be reflected upon rather than as something continuous with the act of reflection, I am immediately excluded from a complete knowledge of myself. I still have a privileged level of access to my 'self', but it is not comprehensive or unlimited. This privileged level of access that is still exclusionary or prohibitive of continuity is what I understand to be the first order of intimacy. The very operation of unfolding one's identity through reflection is the institution of an intimate relation between oneself as the subject who reflects as well as the subject reflected upon.

I am using the language of 'exclusion', but this does not mean that I have no access at all: I am claiming that I can know myself and my thoughts more clearly than anyone else. Nevertheless, this knowledge of myself produced by myself is not both clear *and* distinct. The privilege of intimacy does not provide distinct knowledge of the other, but it does provide an immediacy of the other to me. This immediate clarity of the other provides a certainty of a virtual coincidence between myself and the other as well as a recognition of (explicit) exclusion from that other. This level of clarity provides more than my clear knowledge which allows me to distinguish a plate from a bowl. This immediate clarity is a clarity of *limit*, a clarity of the extrema of what is knowable as myself. My immediate clear understanding of myself which includes my most intimate relationships does not allow for distinct knowledge of those related subjects, but I think it does allow for a clear understanding of what is not captured through abstraction. This is not to say that I have a clear understanding of the information that is not included in my abstraction; rather, I have a clear understanding of what is inaccessible to me through abstraction because it is beyond the extrema of my perception. Essentially, I think this is what Leibniz is referring to when he says abstraction is not in error so long as the individual

remains aware of the fact there is more to know than what is abstracted.[25] I become aware of what is not abstracted only through an immediate perception of it, but this immediate perception is only of the extrema of this remainder (the infinity of relational folds that remain unfolded and therefore remain *enfolded*).

This immediate perception is of the extrema of everything that is not explicitly knowable but is productive of all explicitly knowable content, e.g. the universe that is represented with varying clarity and confusion from the perspective of the monad. For the self, this is the *that* which is called 'I.' What should be clarified is that, while it is impossible to have distinct knowledge of any particular, monads nevertheless represent everything without lack. Again, this is why I think it is important to focus on the *exclusion* and *unfolding* of intimacy. The individual's perspective is what initiates the exclusion because it differentiates itself from all perspectives, but it is also impossible to have any relations with others unless one is excluded from them to some degree. Nevertheless, the exclusion follows from the inclusion of all others in a particular way (i.e. from a particular perspective). In this way, intimacy does allow for an interconnection of some sort (which will be clarified when discussing concurrence). I think it is reasonable to say that this same operation of exclusion is at play in the genesis of a perspective on the universe that is an 'I'.

This consideration of intimacy conveying distinct knowledge of extrema should be examined in greater depth before moving on to the next level of intimacy: similarity. Returning to Leibniz's thoughts in his *Meditations*, there are a few passages I think deserve attention:

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[25] A.vi.6, 57 (RB 57)

Also, one has distinct knowledge of an indefinable notion, since it is *primitive*, or its own mark, that is, since it is irresolvable and is understood only through itself and therefore lacks requisites.[26]

This may well be the passage that Deleuze had in mind when he enumerated the qualities of auto-inclusion: "These undefinables are obviously not reciprocal inclusions, like definitions, but they are *auto-inclusions*: they are Identicals in the pure state, each of which includes itself and only itself, each only capable of being identical to itself."[27] Deleuze's account holds perfectly well so long as one is discussing the distinctness of *simples*. These simples are self-identical and therefore *limited* to auto-inclusion. For Leibniz, the only substance that auto-includes the world (i.e. all substances) with infinite clarity and distinction, is God. When Leibniz states that God alone is the guarantor of the truth of relations, I understand Leibniz to be asserting the auto-inclusion of relations in God. However, this auto-inclusion which lacks obscurity is *not* intimacy, it is continuity or unity. However, this same *scope* of inclusion is at play in monads (given that they represent the whole universe), but it is the limitation of their ability to express this which I see as the inception of intimacy. When Deleuze asks "How could the relation jump [*surgir*] out of the nonrelation?"[28] my response is that the relation occurs when there is the move from the infinite auto-inclusion of the world in God, to the perspectival inclusion of the world in substances as an extremum.

Therefore, what I have been calling the first order of intimacy is not identical to auto-inclusion. There must be a distinction between subject and object for intimacy to be at play. Auto-inclusion is not itself a form of intimacy but given that auto-inclusions are things like necessary truths and that reflection upon necessary truths leads the recognition of self, I think

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[26] GP IV 423 (AG 24)

[27] Deleuze, 43.
[28] Ibid, 45.

that what follows, or unfolds, from this immediate inclusion is intimacy. This production of self through representation of the universe is the first *complex* act that a subject performs because it is how a subject arises, the subsequent genesis of the abstract conception of subjectivity comes from reflection on that 'I'. The immediate inclusion unfolds as intimacy for a thinking subject because of the subject-object divide which institutes the complexity of the subject's knowledge of herself. This intimacy certainly provides a clear kind of knowledge, but it does not provide distinct understanding of the complexity of identity. A subject's knowledge of her representation of herself is the clearest knowledge of her representation of herself that is possible and no one (outside of God) could know her as she knows herself. Yet it is nevertheless true that this subject does not clearly know every detail of herself – nor, often, very much of herself.

Leibniz states in *Monadology* that in "three-fourths of our actions," humans are not actually using their reasoning or reflective capacities, and are therefore functioning more like empirics or beasts.[29] If the vast majority of your life is spent non-reflectively, it can hardly be argued that you know the depths of yourself entirely clearly, and it may well be the case that someone else understands some aspects of who you are even more clearly than you do. Even if you are shallow and uninterested in the world around you, that does not change the infinity of perceptions or your unique perspective on them. Even if by virtue of being shallow and simple you are also predictable, this does not mean that others know you more clearly than you know yourself. Your specific perspective on the world, your specific exclusion from the world, is not simply something unique to you and therefore only clearly experienceable and knowable by you; your perspective is what metaphysically distinguishes you from all other substances. If this particular perspective did not afford any privileged understanding, then your perspective would

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[29] GP VI 611 (AG 216)

not truly be unique and therefore you would not be a unique substance. Being an individuated substance for Leibniz is not only about being distinguishable from other monads, it is about having a unique perspective on the world of other monads. Any clear (or confused, for that matter) understandings of anything in the world that are developed by you are *most* clear for you because your perspective is the only way to arrive at them in that particular way. Some other subject's perspective on you that allows them to predict you or know your motivations more clearly is likewise metaphysically specific to them. To clarify, this is not saying that you know yourself better than anyone else ever can, it is that you alone know your perspective on yourself, and insofar as you have a perspective on yourself then it is the clearest that can be produced through your perspective. It is the clearest version of that perspective insofar as there are no others with that perspective to compete with; e.g., if you have the only apple in the world then it does not matter if it is rotten, it is still technically the best apple in the world. Likewise, if you are the only one with your perspective on yourself then you necessarily have the clearest understanding of yourself through this perspective. The only exception to this is God, because God has no limitation in terms of perspective.

The fact that the 'I' and the primitive simple notion (the *that* which is called 'I') are not interchangeable makes their difference evident. This differentiation does not divorce them into distinct substances but is rather a conceptual bifurcation that shows that the abstracted understanding of self is always discernible from the primitive simple notion of self (the world of other monads). My point being that the abstraction of self and the primitive simple notion of self differ by far more than just number, and therefore – by the principle of identity – are easily distinguishable. This does not mean that 'I' and the primitive simple notion are two entirely

distinct substances. I am only trying to show that one's abstracted understanding of self is only a general knowledge of self as opposed to specific knowledge which requires infinite analysis.[30]

My focus is clearly on the role of intimacy among subjects, but I see what is enfolded as intimacy for subjects as also enfolded within folds of motion (and thereby perhaps physics more generally). However, perhaps what is enfolded is not 'intimacy' even though it still produces a complex whole. Disregarding Leibniz's plenist physics for a moment, it is fairly common to think that motion begins from the point of stasis; at the point of stasis the identity of the object in question is quite simple, but the introduction of motion is seemingly the introduction of complexity into this identity. Is the object the same object at point B as it was at point A? Clearly, it is not *precisely* the same because it now occupies a different space and the passage of time has occurred along with the motion. I think this realization is why Leibniz entertains the possibility of occasionalism in *Pacidius* through his *locus proxima* account of motion.[31] It is, surprisingly, much easier to imagine that the object is destroyed at one location and miraculously reproduced at another for each contiguous increment of the motion. Yet as Leibniz notes, this approach to motion has "eliminated the moment of transition."[32] In short, the *locus proxima* argument introduces *leaps* into nature, something which Leibniz does not want to allow into his physics.[33] What proves puzzling is that Leibniz does eventually propose his own theory of "transcreation" as an account of motion, and this theory also eliminates the moment of transition.[34] Leibniz seems to come to this conclusion despite his own considerations. One such

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[30] See Chapter Four for more discussion on the infinite analysis required to fully know specific subjects.
[31] A. VI. 3, 558 (LoC 191) [1676]
[32] Ibid, 559 (195)
[33] Ibid, 564-5 (207)
[34] Ibid, 567 (213). Transcreation, as discussed in the first chapter, is the language used by Leibniz to describe an occasionalist account of motion.

consideration is that 'stasis' is not a quality of bodies at all. This conclusion occurs after Pacidius and Charinus build off of each other's revelations in the following exchange:

> Ch.: Then what if we say that the motion of the moving thing is actually divided into an infinity of other motions, each different from the other, and that it does not persist the same and uniform for any stretch of time?
>
> Pa.: Absolutely right, and you yourself see that this is the only thing left for us to say. But it is also consistent with reason, for there is no body which is not acted upon by those around it at every single moment.
>
> Ch.: So now we have the cause of the division and the nonuniformity, and can explain how it is that the division is arranged and the points assigned in this way rather than that. The whole thing therefore reduces to this: at any moment which is actually assigned we will say that the moving thing is at a new point. And although the moments and points that are assigned are indeed infinite, there are never more than two immediately next to each other in the same line, since indivisibles are nothing but bounds.

The division of the moving body into points or moments is the division caused by examination or assignation (reflection). In Leibniz's plenist physics, since all bodies are always acted upon by all others, there is no true moment of stasis. There is only motion which can be examined or reflected upon by the mind in a way which splits that instant off from all the other motions.[35] The 'instant' that is then examined appears isolated and static, but this instant is only the product of an infinite series of actions both by the body in question and the other bodies in the continuum. Therefore, any 'instant' occurs only through the reflection upon motion and while the instant might seem simple, it is actually complex. Motion itself is continuous, but our means of examining and understanding these motions is through contiguous instants. The instant in question is unfolded through our analysis of it, but this analysis is inherently limited because it is

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[35] Richard Arthur provides a similar understanding in his Introduction to the *Labyrinth of the Continuum* collection (xxix-xxx). Additionally, while I think my summary of the account of motion in *Pacidius* given in this section is uniquely my own, I would be remiss if I did not admit that not only Arthur's but also Samuel Levey's views were crucial for developing my views and understanding. More in-depth interrogations with both of their readings can be found in my first chapter.

only one *extrema* of motion, i.e. that which is called an instant. Therefore, while in this dialogue Leibniz ends up 'resolving' the discussion of motion by claiming that motions are achieved through transcreation, he also begins to develop a much more interesting theory of motion that utilizes folds and the continuity of motion. Motion is auto-inclusive, it occurs in the continuum through the actions of all contiguous bodies with no rest in between. Yet it is when motion is examined that it can only be examined as instants and the motions of all contiguous bodies become enfolded into an instant that the first order of intimacy occurs in physics. To put another way, it is only through examining motion that a lack of continuity of motion appears. This order of intimacy occurs through the utilization of abstraction which limits comprehensive knowledge.

Relations become intimate in the sense of complexity when there is no continuity because the operation in question distinguishes one aspect of the continuous whole from all the other aspects. This operation of recognizing complexity is one process of unfolding. In subjects, this is the perspectival reflection on, and representation of, the world within. For motion, this occurs when instants (which are just points in the continuum of motion) are considered in isolation. It is this point which is the site of *variation* between continuous and contiguous, and as Leibniz originally wrote in his *Dissertation on the Art of Combinations* (1666), "there are two kinds of *variation*: *complexion* and *situs*...*Variation* here means change of relation. For change may be one of substance, or of quantity, or of quality; still another kind changes nothing in the thing but only its relation, its situs, its conjunction with some other thing."[36] I consider the first order of intimacy to be limited to the variation of complexion, which Leibniz claims occurs when a greater whole is divided into parts and it is through the variation of these parts that "the

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[36] GP IV 36 (L 77) [1666]

complexion or lesser whole may be varied."[37] This intimacy occurs at the point of variation between continuous and contiguous, subject and object.

I think that the variation of situs is another order of intimacy, namely congruence. However, I think there is another form of intimacy that is more rudimentary than congruence but more complicated than the first order of intimacy. This second order of intimacy pertains to degrees of similarity that can lead to a misrecognition of coincidence.

Before moving on to the second order of intimacy, it is worthwhile to summarize the first. The first order of intimacy pertains to the *most* automatic level of inclusion in relations, but the intimacy lies in the fact that it is not properly automatic and is instead immediate. There is always a distinction between the subject reflecting and the subject reflected upon, even when both subjects are myself. In the case of the individual reflecting upon themselves, the infinity of the individual can be abstracted into something which is called 'I', but this abstraction does not capture the infinity of that particular substance. What is called 'I', the self, is therefore a kind of complexion, and this mode of relation is the inception of complexity that emerges from simples. The simples themselves may not be knowable insofar as a distinct understanding which would reveal them is impossible, but one can have certainty about oneself because of the immediacy and intimacy of the complex to the simples. Therefore, in complex relations, what is immediately included in the subject is that which is called 'I'. This immediate inclusion is produced through a recognition of the extrema of self; it is this recognition of the extrema of self which breaks continuity and makes this knowledge intimate rather than unifying.

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[37] Ibid, 37 (78)

<u>The Second Order of Intimacy: Similarity, and the First Barrier to Intimacy: Coincidence</u>

In this second order of intimacy, I will be arguing that at the point when the relation emerges out of the nonrelation it does not just form a single relation (the complexion of self-to-self), the relations between the subject and everything in the world emerge all at once in the subject's representation of the world and its relation to the world. The second order of intimacy can go one of two ways for subjects: they can recognize the *similarity* between their relational expressions and the expressions of others in the world, or they can perceive this relational similarity as a *coincidence* among the related subjects. There is no issue with the recognition of similarity, but as Leibniz has noted, the mind seeks the *same* in relations.[38] This assertion of sameness imposes a coincidence among subjects that mistakes similarity for continuity and threatens the integrity of each substance's individuality. In this section, I will be explaining in greater depth how this occurs and why this is or is not intimacy.

This second order of inclusion is produced by knowledge of relational predicates that are developed out of understanding that which is called 'I'. That is, in knowing oneself, one may recognize certain relational predicates that hold for oneself and start to think through the implications of those relational predicates. For instance, 'lover of Helen' is within that which is called 'I' for Paris, and, by understanding logical implication, Paris can also conclude that 'beloved by Paris' is within the definition of Helen. The difficulty also arises from the fact that all subjects are contingent and only exist insofar as they are in harmony with the other contingent existent which make up this best of all possible worlds.[39] The issue with this being that Paris

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[38] GP VII 401 (L 704) [1715-16]

[39] e.g. an Alexander the Great who became a great chef is certainly a possibility, but that possible Alexander the Great is not in harmony with the rest of the world that represents an Alexander who was the king of Macedonia. Likewise, a Jeff Lambert who never studied Leibniz is possible, but that Jeff is not in harmony with the world that God made.

might assume that since he is a lover of Helen, and therefore Helen is beloved by him, that Helen herself is reciprocally a lover of Paris. While this *may* be the case, it overlooks the fact that Paris is extrapolating information about contingents from his own understanding of himself. His 'relational' knowledge is only logical implication derived from his understanding of himself. Moreover, such a distortion makes it seem as though Paris being a 'lover of Helen' and Helen being a 'lover of Paris' are causative of one another. If such a causal link were at play, then neither subject could be considered distinct from the other since monads cannot cause anything in one another.

Therefore, the issue is when my abstracted complexion of my self (the 'I') provides me certainty about my relational predicates and I assert something about others because of my knowledge of my own predicates. To be fair, since every subject represents the entire universe, I do represent others, but I do not represent them as clearly as I can know myself and this representation does not cause anything in others. Rather, the logical reduplication 'Paris is a lover of Helen, and *eo ipso*, Helen is beloved by him' asserts only that insofar as Paris loves Helen, Helen is similarly beloved by him. Helen being beloved by Paris does not, however, require that Helen also loves Paris nor that she even acknowledges his existence.

If I assume that knowing myself means I can know something about others, this asserts causal continuity between myself and others (e.g. Paris knows himself to be a lover of Helen and sees this to be the cause of Helen being beloved by him and perhaps that she is correspondingly in love with him) rather than the harmony or conformity that Leibniz asserts to be the case. While each subject does represent the same universe without lack, this can only be a virtual coincidence and it does not demand an explicit coincidence. If Paris thinks that his own understanding of himself *necessitates* something about Helen, then he is collapsing the

distinction between himself and Helen, as Paris cannot be the cause of the predicates of others. The problem with this approach to relations is that it mistakes virtual coincidence for explicit coincidence and conceives relations as an extension of self-knowledge. It is entirely reasonable to appreciate the unique ways in which each substance's representation of the world *virtually* coincides and makes it so that each substance's representation is immediately connected to another's. Such an appreciation would rightly be an appreciation of *similarity* rather than coincidence. The appreciation of similarity maintains the realization of *distinct identity*, whereas the mistaken understanding of explicit coincidence, which I understand Leibniz to be referring to as the mind seeking identity in relations, overlooks this distinction.[40]

Thus, this distinction between the first and second orders of enfolded intimacy has to do with whether the subjects of the relations are distinct substances who each represent the world. In my opinion, Deleuze moves a bit too quickly through the processes of folding. He writes:

> As long as the primaries were without relation, as simple auto-inclusions, they were attributes of God, predicates of an absolutely infinite being. But as soon as we consider an infinity of a second order that derives from this being, predicates abandon being attributes in order to become relations.[41]

I agree completely with Deleuze that it is the introduction of a second order of infinity that is the first inclusion that is not automatic. However, I think that this second order of infinity is the infinity of identity (which is the first order of intimacy), whether that be the identity of a substance, an action, or a motion. From this unfolding of the identity, further unfolding occurs which do "become relations" to some degree. However, I think Deleuze is explaining the process too quickly and overlooking some important steps. I think that when it comes to relations, it is

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[40] GP VII 401 (AG 338) [1716]
[41] Deleuze, 46

best to parse out the second order of infinity into two distinct orders of enfolding intimacy. The first order deals with the initial complexion of a single subject, whereas the second order deals with the similarity of the representations of other subjects within any given complex subject and how those representations can be similar (but not identical) to the other subjects represented.

The second order of intimacy occurs as a subject's predicates are recognized and reflected upon. If Paris recognizes himself as a lover of Helen, then it follows by logical implication that Helen is beloved by Paris. As Deleuze rightly notes, "the primary terms, without relations in themselves, *acquire relations* by becoming the requisites or the definers of the derived, in other words, the shapers of this material."[42] Because of this, I can understand why Deleuze considers this a reciprocal inclusion.[43] However, to use Leibniz's own language, I would consider this form of inclusion "reflexive" rather than reciprocal.[44] The key difference, as far as I understand it, is that reciprocation invokes the idea of mutual agency; however, as can be seen through the example of Helen and Paris, there is no required agency on the part of Helen in order for her to be beloved by Paris. Instead, the knowledge that 'Helen is beloved by Paris' is recognized only through Paris' own love for Helen. While it is the case that Helen does represent herself as beloved by Paris as well, Helen expressing a corresponding or similar predicate is not due to Paris, but rather due to her own *similar* representation of the world; therefore, at this level, she is the cause of herself being beloved by Paris. However, Helen's representation of herself as 'beloved by Paris' and Paris' representation of Helen as 'beloved by Paris' are *not* identical. Yet it is this reflexive inclusion of Helen into the predicates of Paris that can lead to a problematic intimacy that is not truly intimacy at all. This approach to relations would more correctly be

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[42] Ibid.
[43] Ibid, 47
[44] C 403 (MP 94-5)

understood as dictatorial obsession wherein the subject tries to make the examined other conform to the subject's own understanding of the other. One could claim that this *is* a kind of intimacy because it is the first degree of inclusion of another subject into the identity of a distinct subject. The problem with such a conception of intimacy is that it tries to assert explicit *coincidence*, which is essentially a kind of continuity.

The intimacy that occurs when reflecting upon myself as an identity is the confrontation with the fact that I cannot even know myself with absolute clarity. However, I *can* know what is most clearly predicated of myself as this identity. What I mean is that when I think of my 'self', I more clearly know myself as a husband or a brother rather than as a polluter of the earth or a benefactor of products created due to unethical labor laws. All that said, I would not know that I was a husband or a brother if not for the network of relations that I perceive and with which I am interconnected. There is no apperceivable relation of 'husband' without the perceptions of all other relations that interconnect me with the world of others. Due to the limitations of clear knowledge that perspective grants me, though, I intimately and immediately know only that I am a son, a brother, a husband, etc. Furthermore, while these are all general predicates, it is also clear that my understanding of being my father's son is quite different than either of my brothers' understanding of being his son (although surely there are similarities) never mind how different my understanding of this relationship is from Leibniz's own understanding of himself as a son. This knowledge of universal interconnection, while perceived all at once, is not apperceived all at once.[45] Yet this interconnection, and all the relations that go along with it, does not have to be apperceived in order to influence which relations *are* most intimately and immediately known by

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[45] Monads cannot unfold all their folds all at once but just as I can understand the number pi while realizing I have not solved pi; I can apperceive this universal interconnection through abstraction while recognizing it is similarly incomplete.

me. These are *intimately* known by me not just because of the ease with which I apperceive them, but also because I am the only substance that is moved by the interconnection of all other substances so that I apperceive my relations in the way that I do. This is the privilege of my perspective on the world of monads. Moreover, the relations I am aware of are apperceived by me because of the relations enfolded in them. While I may not be apperceiving my relation to unethical labor practices around the world, they are still enfolded in my apperceived relations. Some relations may always remain enfolded for me from my perspective, but I am always interconnected with them. Therefore, I think it would be unwise to follow Deleuze by similarly condensing these distinct processes into one order of *relational* folding. Deleuze's approach works as a general approach to folds, but I think that relational folds require more precise division.

Reflexive inclusion makes it seem as though the relational characteristics among subjects are interchangeable, as if Helen's status as beloved by Paris necessitated that she too loved Paris and he was beloved by her. That is, the way reflexive inclusion presents itself can be understood as reciprocal inclusion, but mutual agency is not at play in this reflexive inclusion. The further mistake of understanding these as reciprocal relations is that they incline minds toward asserting coincidence. As discussed in the second chapter, Leibniz distinguishes between coincidence and congruence by claiming that two things are coincident if they can be substituted, one for the other.[46] That is, A can be substituted for B without any noticeable difference, such as two triangles with the same measurements or two bricks of equal size and weight. In other words, the two substances would be superposable (i.e. one could be substituted for the other without issue). It is this assumption in relations that is problematic, particularly in relations among thinking

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[46] GM V 153-4 [1679], c.f. GP VII 236 (L 371) [early 1690s]

subjects. Paris' love for Helen which makes her beloved by him is therefore enough for Paris to conclude that they *share* a relation. As Leibniz noted in his fifth letter to Clarke, when it comes to relations, minds do not strive to recognize only "agreement" but instead seek out "identity."[47] The mind, in examining itself, sees its predicates and understands a relation between itself and some other subject, but rather than recognizing the limits of this knowledge, the mind tries to assert an intimacy of coincidence. This coincidence, if it were the case, would make both subjects identical. As I understand Leibniz, it is not problematic for multiple substances to be brunette or lovers because these are *generalia* and not specific statements about individuals. To say that Helen and Paris have superposable notions of 'lovers' such that they are distinguishable in all ways *except* for this one relation would not work for Leibniz. The reason I do not think this would work for Leibniz is because it is only because Paris represents the world in his unique way and his appetites drive his perceptions in a unique way that Paris ever becomes a lover of Helen (and likewise for Helen's love of Paris). Therefore, one could not share the predicate 'lovers' in a superposable way unless one also shared a superposable appetition and representation of the world. This is what would result in identity. Relational predicates do not exist in isolation from the perceptions and apperceptions that make up the identity of the subject in question. This is what follows Leibniz's claim that all perceptions are interconnected.[48] I cannot share my specific relational predicate without sharing all the interconnected perceptions and apperceptions as they are experienced and expressed from my specific perspective.

The error that results in this perceived coincidence occurs because of the similarity of the abstractions (i.e. the abstracted understanding of Paris as "a lover of Helen" seems interchangeable with the abstracted understanding of Helen as "a lover of Paris"). The

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[47] GP VII 401 (L 704) [1715-16]
[48] A.vi.6, 239 (RB 239)

abstraction is what generates complexity because it is the distinction between ideal and actual, contiguous and continuous, subject and object. The problem occurs when *similar* abstractions are taken to be coincident. The mind understands these ideal abstractions as similar to such a degree that no discernible difference is recognized. Rather than acknowledge the limitations of apperception, the mind overlooks these differences in order to seek out identity, or coincidence. Therefore, while Deleuze is correct in his diagnosis of the second order of infinity and inclusion pertaining to similarity, I think that the connection between the first and second order of infinity is much more involved and requires greater work to untangle when it comes to relational folds.[49] However, the problem with this similarity is that the mind desires more than just similarity or agreement, but identity. Deleuze is right that the principle of similarity is at work at this level of folding, but he is perhaps too optimistic regarding how this similarity will be processed by thinking subjects. Relations of similarity should be understood *comparatively*, but they are instead understood in terms of *coincidence* and identicality.

The intimacy that is included in the enfolding of similarity is therefore a dangerous one because if the subject in the relationship is not privy to the factors that maintain the distinction between herself and the other subject, then she is more prone to understand her relation with this other subject as one of coincidence. I think that Leibniz is trying to establish a means of resisting coincidence in relations when he discusses things like the distinction between paternity and filiation in David and Solomon.[50] It is the process of relational reduplication which moves away from this coincidence. Leibniz even explicitly stated in *Nature of Truth*, that reduplicative propositions operate by stating a term in such a way that "it is so strictly expressed that we refuse

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[49] Deleuze, 57
[50] GP II 486 (DB 327) [1716]

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to substitute another for it."[51] Therefore, when I claimed in chapter three that reduplication does not supply intimacy, this was for many reasons. My reasoning against understanding reduplication as intimacy was that it did not account for the *virtual* coincidence among subjects, yet the utility of reduplication is that it dismantles conceptions of explicit coincidence.

What is intimately included in relations at this level is similarity, but in order to reinforce that this inclusion is of *only* similarity and not identity, Leibniz utilizes reduplication. This reduplication makes explicit the distinction between subjects, but it cannot make explicit the virtual interconnection among subjects that *does* structure relations and is at the core of the intimacy that can only be recognized in a relation by those that most clearly and distinctly represent that relation. There is an intimacy in similarity, but the overextension of this similarity into coincidence is something Leibniz recognizes minds are prone to do.

What I am calling intimacy, as it is expressed in this second order of intimacy, is the process of recognizing similarity between oneself and another. However, the problem with the ideality of abstraction is that it tends to smooth over the distinctions among subjects and exaggerates this similarity into coincidence. When Paris recognizes that being a lover of Helen also makes Helen beloved by him, this recognition can be problematic. It can be problematic because the logical implications of a relational predicate (e.g. Paris is a lover of Helen) can *appear* causal. Yet, for Leibniz, no substance can be the direct cause of any effect in any other substance. Therefore, the danger of this apparent causality is that it can collapse the distinction of two substances into one. That is, if Paris realizes that his own predication has a logical effect on Helen, then this *apparent* causality can lead Paris to cognitively smooth over the distinction between himself and Helen such that two individuals become a unity. I think that one of the

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[51] C 403 (MP 94-5) [1686]

purposes of reduplication is to make this distinction among subjects explicit, such that it becomes apparent that neither subject understands their relation identically.

I think that the usage of reduplicatives to instantiate the limits of similarity is important because it also points to the fact that relational statements are founded by the relational predicates of multiple substances. The second order of intimacy comes from the mind's encounter with another subject as 'other'. In the best case, this is the intimacy of similarity, but this potential for intimacy can be lost if the similarity is understood as coincidence.

Before moving onto the analysis of the intimacy of congruence, it is worthwhile to summarize and distinguish the first and second orders of intimacy. The first order of intimacy arises out the complex relation to oneself and attests to the fact that no individual is simple and is only ever abstractly known as that which is called 'I'. Nevertheless, this general knowledge of what is called 'I' is certain and immediate, speaking to the fact that the complexion called 'I' is an extremum which is immediate to its primitive simple notion. That is, the 'I' which is the perspective on the represented world is only immediate (but not continuous) with the totality of the monads represented in the substance that generates this abstracted notion of self. I call this intimacy because it establishes the limits of what can be known distinctly and even asserts these limits in oneself. This establishment of limits between subjects is what distinguishes this order of intimacy from complexion. By knowing oneself, though, one also comes to know the world represented by oneself through various relational definitions about oneself. From this knowledge one can extrapolate information about other subjects in the world. Insofar as all substances represent the world, these representations of relations may appear identical across all substances but are actually only similar. However, because the mind seeks identity in relations, this similarity is replaced by coincidence. This coincidence violates the integrity of the individuality

of related substances and asserts a continuity or causal connection among substances. This imposition of coincidence, while frequent, is not inevitable. This recognition of the similarity of others can be understood as the intimacy of similarity which still distinguishes. It is perhaps easiest to recognize this similarity if one understands the congruence of these relations and representations.

The Third Order of Intimacy: Congruence

The third order of intimacy enfolded in relations is congruence, and it is through the intimacy of congruence that the virtual coincidence of substances begins to appear insofar as the otherness of the subject I am related to becomes undeniable. This otherness becomes undeniable despite the others' similarity to me *and* their equality with me. As has been shown, intimacy pertains to the recognition of a difference that still allows for clear knowledge. In complexity, this was the intimacy of reflection upon oneself, through reduplication the intimacy of similarity is made clear, but the clearly understood interconnection is not represented. The fallacy of coincidence occurs when distinct knowledge about the other person is incorrectly recognized as a causal relationship that unites the two subjects as one. Whereas Leibniz uses reduplication to help instantiate similarity rather than coincidence by implementing rigid distinctions among related subjects, Leibniz utilizes folds as a means of expressing *degrees* of difference. The degrees of difference expressed through folds are interconnected with each other in a way that a congruence in the folds of motion can be understood. Likewise, the virtual inclusion of different degrees of force in every fold is required for the motion to be consistent. Deleuze writes when discussing the third order of infinity that:

> What appears is that we are linked – almost fixed – to requisites: even the definers that we attain, in arithmetic or in geometry for example, have value only through analogy, and are in fact the inner characters of a presupposed domain (thus the first numbers whose converging series are

sought). The theorem, the demonstration as a concatenation of definitions, can appeal to syllogistic form; *but we go by "enthymemes."* which hold only for syllogisms, and which work by means of "inner suppressions," ellipses, and problematic shortcuts.[52]

I think Deleuze would agree with my reading that the virtual is required for relations to be established, but that they are not explicitly expressed in the individual alone, it is only in the congruence of the related subjects that what is suppressed is understood. In congruence, the virtual coincidence is understood in terms of similarity and equality, but also recognized as *only* similar and equal while still explicitly differentiable.

Congruence is a far more elaborate form of this relation because it moves beyond similarity and equality to see the two subjects as mutually distinct. Their relation to one another is produced out of a virtual coincidence insofar as they appear interchangeable but are undeniably distinct. For example, 'Alexander the Great' and 'the king of Macedonia who conquered Darius' are similar and equal expressions of the identity of Alexander the Great, but they are also clearly distinguishable. These expressions are *homomorphic* but not identical.[53] I think that such a relational inclusion establishes that what is included in each subject is the virtual coincidence of congruence. This virtual coincidence of congruence requires the unilateral and nonreciprocal expressions of the related subjects to be similar and equal while still distinct.

As I have said throughout this work, my goal is not to show that all folds are intimate, but that relations are a type of fold and that what is enfolded in these relational folds is intimacy. In this chapter I have been showing the correlation with my understanding of the different orders of intimacy and each level of Deleuze's order of inclusion. Essentially, I have been arguing that there is also an order of intimacy included in relations. I have claimed that when this inclusion

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[52] Deleuze, 48, my emphasis.
[53] For a more thorough discussion of how these two statements about Alexander the Great are homomorphic and virtually coincident, see Chapter Three.

happens to, or among subjects, I understand it as intimacy because of the way the relation

functions and discloses the interconnection. An intimate relation functions by providing clear

knowledge but also awareness of the lack of distinct knowledge regarding the relation.

Deleuze's table of inclusion claims that the third order of infinity is governed by the

principle of sufficient reason. This is an interesting move (composed of, as usual, many other

more nuanced moves) by Deleuze, but I do not think it can be applied to relations. I have been

arguing that there is never a unity of related subjects and so relations always have some degree

of externality (though they are never truly extrinsic); I have also argued that there is a virtual

coincidence among related subjects. However, for Leibniz the sufficient reason for contingent

existents is not only non-explicit but is truly external to the contingent existent.[54] Therefore, the

principle that I see governing the inclusion of the intimacy of congruence is a principle that I

think Leibniz asserts as a principle but is not, to my knowledge, included in lists of his principles

– namely, the principle of interconnection and congruence. I see Leibniz asserting this as

principle in the following passages as well as his multiple other attestations to the

interconnection of all substances:

> For all the points in the world are congruent to each other: that is, one can always be put in the
> place of another. But all points in the world are in the same space.[55]

And,

> That all existing things have this intercourse with each other can be proved, moreover, both from
> the fact that otherwise no one could say whether anything is taking in existence now or not, so
> that there would be no truth or falsehood for such a proposition, which is absurd; but also because
> there are no extrinsic denominations, and no one becomes a widower in India by the death of his
> wife in Europe unless a real change occurs in him…Furthermore, since all existents must be

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[54] GP VI 612-3 (AG 217)
[55] GM II 19 (L 252)

interrelated, there must be a cause of their interrelations; indeed, everything must necessarily express the same nature but in a different way.[56]

For Leibniz, it seems to be the case that the interconnection (sometimes stated as the 'interrelation' or 'intercourse' of all substances as in the passages above) of all substances and perceptions is undeniable, and this interconnection is owed in part to the congruence of all substances; they all express the same nature (presumably equally so) but *differently*. I know of no text wherein Leibniz announces this as a principle, but I think that the consistency and force of his claims certainly carries the weight of a principle. The impact of this principle is that it goes beyond the principle of identity to assert a similarity and equality with all other substances that attests to their congruence. The difference is in the perspective or situation that expresses this same nature. The language of 'same' here, I think, should be interpreted as expressing a virtual rather than explicit coincidence. The same world of monads is expressed, but it is only expressed equally at the level of the virtual, but in the actual, there is some degree of variance in terms of what aspects of the world are more clearly known through the perspective of the monad in question. Therefore, while there is a clear congruence between Helen and Paris in their relationship as lovers, there is also a less clearly apperceived (if at all) congruence between all substances in the relationship of constituting the world. However, this consideration of the interconnection of all substances is not what is recognized in congruence; in congruence the relational expression of another subject that is being examined is the one which I clearly recognize as equal and similar to my own. It is perhaps noteworthy, though, that this principle

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[56] GP VII 321-2 (L 365) [around the 1690s] c.f. A.vi.6, 227 and 239 (RB 227 and 239), GP VI 613 and 616 (AG 218 and 220), GP II 59 (L 338) [1686], C 521 (AG 33) [1689], GP IV 484-5 (AG 143-4) [1695], GP II 226 (L 524-5) [1701]. As discussed throughout this project (but especially in chapter three), the language of interconnection is most often associated with Leibniz's theory of pre-established harmony. As I establish in that chapter, this interconnection should be understood as a harmonious acting together rather than a synchronicity that does not require engagement.

counters any claims of solipsism since it affirms that all substances exist together in the same space, or world.

Each substance in a congruent relation expresses its relation similarly, equally, but distinctively; essentially, they express their relation unilaterally and nonreciprocally. The virtual coincidence is the foundation for both the unilateral and nonreciprocal expressions by each substance and the abstracted relational statement. The unilateral and nonreciprocal expressions are the expressions from their perspectives, but the relational statement plays on the *liaison* that these two perspectives enact when thought together. When subjects recognize these expressions as similar, equal, and different, this is when the inclusion of the intimacy of congruence occurs in the relation. That is, the subjects' realize that there is a congruence in the complexion of each; their representations of the world of monads are such that each is similar enough to produce the abstracted explicit relation. However, these subjects also realize that this explicit abstraction overlooks the irreducible individuality and difference which each recognizes in their own understanding of one another. What I mean is that because congruence affirms the differentiability of these substances, each substance in that relation also recognizes this difference and realizes that the relational statement, which appears "shared", does not indicate a unity among the related substances. The recognition of the fact that similarity is distinct from equality then implores the mind to consider how the relation *is* both equal and only similar. The explicit equality of the abstracted relation is rejected as the subjects realize that this explicit coincidence implied by the relational statement is only the product of similarity, of a virtual coincidence among the related substances. This is where the intimacy of congruence is found, because here there is an awareness of the foundation of similarity and a hint of the productive aspect of relations. That is, subjects recognize the fact that relational statements are the result of

the virtual coincidence of the represented world. The intimacy of congruence is the recognition of the inclusion of the virtually coincident relation that produces similar explicit representations (i.e. relational predicates).

In the folds of motion, this realization of some "I know not what" amounts to conceding that there are an infinite number of folds enfolded in motion. I think that conceding this infinite division of motion amounts to conceding that the human intellect can never distinctly know what establishes the congruence of the different folds of motions even though we can clearly know the infinity of folds. In relations, this gets enfolded as an intimacy, because the congruence of the explicitly expressed predicates and representations are only congruent because of a virtual coincidence. This virtual coincidence can never be explicitly known. When I say, 'explicitly known', I take this to be synonymous with clear and distinct knowing, and I think that the best our knowledge of relations can achieve is clear but relatively confused knowledge. Deleuze claims that the third order of inclusion pertains to the "infinite series with intrinsic limits."[57] The infinite series in question would be the relation itself (and the series of factors it includes), neither substance is able to express the totality of the relation insofar as it is in harmony with all other substances. The substance in question, say Paris, can only know as much as his perspective grants. This is the intrinsic limit upon the series, but it is not the series itself which is limited, only the degree to which the representation can be unfolded.

The intimacy that is included in congruent relations is both the recognition of equality (in addition to similarity) and the production of relations out of recognized individuality. The intimacy of similarity, if achieved, only asserted the distinct identity of others and the fact they do not represent our 'shared' relations in the same way I do. In similarity, there is no

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[57] Deleuze, *The Fold*, 51.

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examination of the production of these similar expressions nor is there an understanding of the equality of the expressions. The intimacy of congruence is the realization that these similar and equal relational expressions would not be possible were it not for the difference in representation of this virtual coincidence. The relational statement 'Helen and Paris are lovers' is understood as congruent for Paris and Helen insofar that they realize their distinct (i.e. unilateral and nonreciprocal) roles in the production of this relational statement. The abstracted relational statement that results is similar to the intimacy of the complexion, which recognizes that what is called 'I' is only an abstracted representation of one's primitive simple notion that is ultimately discernible from this 'I'. That is, the 'I' would not be possible if not for some primitive simple notion which cannot be clearly and distinctly known. Likewise, the intimacy of congruence occurs when the subject realizes that the clearly known relation would not be possible if not for the clearly known other who similarly and equally expresses this relation. Just as that which is called 'I' arises from an abstraction of my primitive simple notion, that which is understood as the relation arises out of the enthymeme of virtual coincidence. The recognition of this virtual coincidence can never be explicit, but it is clearly known so long as the subject(s) I am related to are understood as differentiated from myself. Without an awareness of differentiation, then the relation is truly only a coincidence. By realizing the irreducible otherness of the subject I am related to, I recognize that the relation is the abstraction of our distinct relational expressions' extrema. The intimacy of congruence is the point at which the extrema of unilateral relational expressions become contiguous and the other's agency becomes undeniable.

While I am claiming that congruence occurs only between the most explicitly related subjects, there are other less explicit contributions to this relation by other substances. This contribution, though, constitutes a concurrence rather than a congruence. What relations enfold

at the level of all substances is the concurrence of relations. Therefore, the final order of intimacy is the intimacy of concurrence in relations.

The Fourth Order of Intimacy: Concurrence

While congruence occurs for the substances representing the relation most clearly, Leibniz has been clear that all substances are interconnected in such a way that a change in one will be accompanied by a change in all others. For Deleuze, the fourth order of inclusion is the inclusion of the world in the monad which is "surely unilateral, but *cannot be localizable*."[58] This inclusion cannot be localizable because it does not have intrinsic limits, instead it has "extrinsic limits that restore an infinite whole (= World)."[59] To my mind, this is the inclusion of the conservation of force as it is distributed through all substances.

Leibniz's law of the conservation of force states that no substance is purely active or passive.[60] At times Leibniz seems to limit his examination of the conservation of force to just the two most explicitly active subjects, such as when he describes a collision: "*both* [subjects] *act equally in the collision*, so that half of the effect comes from the action of one, the other half from the action of the other."[61] At other times, though, he seems to accept that any account of the conservation of force for something like a collision would be endlessly more complicated: "We observe also that the force of a body is diminished only in proportion to the force it imparts to some bodies contiguous to it or to its own parts, insofar as they have separate motion."[62] In *Monadology* and *New System*, he even extends this conservation of force to perceptions given that minds must represent perceptually the way bodies in the world accommodate themselves to

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[58] Deleuze, 51.
[59] Ibid.
[60] For a more detailed account of the conservation of force, see Chapter Four.
[61] GM VI 251 (L 448) [1695]
[62] GP IV 442 (AG 49-50) [1686]

one another.[63] The forces of bodies acting on and being acted upon by one another must be represented by minds; therefore, to this extent, perceptions likewise are subject to the conservation of force insofar as their representations of these bodily forces are more or less clear or confused. It should be noted that when Leibniz discusses actions (such as a collision) in a more simplistic way such that only two subjects are accounted for, this is done only for brevity's sake. In truth, for Leibniz, since the world is a plenum of contiguous bodies, the actions of any one body are never solely that body's alone. To this end, I see the conservation of force aligning with what Leibniz described as the concurrence of relations in *New Essays*:

> I take relation [*la Relation*] to be more general than comparison. Relations [*les Relations*] divide into those of *comparison* and those of *concurrence* [*de concours*]. The former concern agreement and disagreement (using these terms in a narrower sense), and include resemblance, equality, inequality, and so forth. The latter involve some connection [*liaison*], such as [*comme*] that of cause and effect, whole and parts, position and order, and so forth.[64]

As discussed in the second chapter, this notion of concurrence accounts for the pseudo-causal interconnection of all monads that is understood by Leibniz as the perpetual accommodation of all monads to one another. This accommodation, or harmony, of all monads is concurrently productive of the 'world'. The world is not some third thing that exists apart from God and monads, all monads were created as the initial act of creation and it is this network of monads that compose the world.[65] Where this interconnective concurrence becomes complicated is when the law of conservation of force is added to it. It is no longer simply two bodies in a collision with both equally acting and acted upon, now every body in the continuum is also acting and acted upon to some degree in the collision. In this way, the collision is included in every body to

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[63] GP VI 615-6 (AG 219-20) (see § 52 and § 60) [1714] and GP IV 485 (AG 144) [1695]
[64] A.vi 6, 142 (RB 142) [1704], c.f. Ibid, 358 (358), C 545, and C 471.
[65] GP VI 607 (AG 213) [1714]

such an extent that the collision itself can no longer be limited to its localization in the two most immediately affected bodies. I am arguing that this also occurs in relations but must be understood as the enfolding of a unique kind of intimacy.

In discussing relations with De Volder, Leibniz wrote quite clearly that in his opinion "there is nothing in the whole created universe which does not need, for its perfect concept, the concept of everything else in the universality of things, since everything flows into every other thing in such a way that if anything is removed or changed, everything in the world will be different from what it is now."[66] While Leibniz is asserting the necessity of other substances in the formation of relations, he does not clearly express to De Volder to what degree any substance is aware of this relational network or whether awareness is necessary for the relation to be changed by the actions of others. In *New Essays*, Leibniz (as Theophilus) responds to his posthumous Locke stand-in (Philalethes) and provides some clarity on this issue:

> Philalethes: However, a change of relation can occur without there having been any change in the subject: Titius, 'whom I consider today as a father, ceases to be so tomorrow, only by the death of his son, without any alteration made in himself.'
> Theophilus: That can very well be said if we are guided by the things of which we are aware; but in metaphysical strictness there is no wholly extrinsic denomination, because of the real connections amongst all things.[67]

As I understand it, Philalethes' position is that Titius ceases to be a father without any change that he is aware of in himself and if there is a change which Titius is unaware of, then there is no change in the subject Titius. Theophilus, however, counters that it only holds true that there is no change in Titius if we admit only changes that Titius is aware of; however, there are many changes which occur in subjects of which they are unaware. Therefore, while it may be the case

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[66] GP II 226 (L 524-5) [1701]
[67] A.vi.6, 227 (RB 227)

that Titius does not *realize* that he has lost his son, it is nevertheless the case that a real change (which he can be unaware of) occurs in Titius the moment his son passes because of the interconnection amongst all things. What Leibniz is establishing here is that bodies are acting and acted upon by all other bodies without even being aware of it and that these non-apperceived interrelations are productive of real changes in relations. I see this as evidence that the interconnection of relations operates the same as the activities of contiguous bodies that ripple throughout the continuum. In both cases, the interconnection is not strictly causal, but is instead tied to the fact that all monads must represent the whole world and this representation persists eternally and even without awareness.

I am therefore claiming that relations are a part of this universal conservation of force in such a way that all substances are concurrent to *some degree* in the production and changes in all relations. I think the concurrence of relations is why Leibniz will sometimes claim that relations are *results*.[68] However, the problem is that when relations are phrased as 'results' it carries the connotation that relations are strictly passive without affirming the passive force (i.e. resistance) that is at play for Leibniz. The loss of Titius' son affects Titius' fatherhood without his knowledge. Nevertheless, this loss of his son, which acts upon Titius without his awareness, is still resisted by Titius insofar as he understands himself as a father. Titius, through his resistance, is participating in the change in himself. Leibniz seems to reaffirm this position when he claims that, "no one becomes a widower in India by the death of his wife in Europe unless a real change occurs in him."[69]

In a letter to Arnauld, written earlier than any of the above sources, Leibniz seems to connect this activity of representation (even when lacking awareness) to the substance's notion:

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[68] GP II 226 (L 525) [1701]
[69] GP VII 321-2 (L 365) [around the 1690s]

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> Now I do not demand any further connection here than what is really found between the terms of a true proposition, and it is only in this sense that I say that the concept [*notion*] of an individual substance includes all its events and all its denominations, even those which are commonly called extrinsic, that is, those which pertain to it only by virtue of the general connection of things and from the fact that it expresses the whole universe in its own way. For *there must always be some foundation for the connection between the terms of a proposition, and this must be found in their concepts* [*leur notions*].[70]

This notion of the substance is synonymous with the appetition, perceptions, and apperceptions that individuates the substance. Therefore, when Leibniz says that "relations result from a plurality of absolute terms," I take him to mean that the foundation of the relation in the monad is based on the representation of all other monads.[71] Moreover, this representation which founds all the monad's relations is shaped by the monad's inner notion or appetition. Now, if this is the case for any given monad, then it must be the case for *all* monads, meaning that all monads are concurrent in the representation of the *entirety of relations* in all substances to some degree. For all substances with respect to most things most of the time, this degree of representation is confused and indistinct, but they are nevertheless concurrent in the representations of that relation by the substances who represent it more clearly.

What is enfolded in relations at this level is a very peculiar form of intimacy as it is the most public and shared aspect of relations, thereby making it difficult to understand as *intimate*. The previous orders of intimacy (complexity, similarity, and congruence) all required privileged clarity on behalf of the substances expressing the relation most actively. This privileged epistemological access had its corresponding blind spot which kept the relation intimate rather than unified. These levels of intimacy established a close personal connection but did not allow

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[70] GP II 56 (L 337) [1686]. I am not sure why Loemker translated 'notion' as 'concept' but it is clear to me that leaving it as 'notion' would have been the better choice.
[71] GP II 226 (L 525) [1701]

that connection to have any directly causal aspect, nor did it convey complete transparency to any subject in the relation. While this causal barrier and lack of transparency are still at play in concurrence, the number of substances included in the relation exceed what could reasonably be called private in such a way that the relation no longer seems to provide a *privileged* understanding.

So why understand this level of relational enfolding as intimate? Or, perhaps more importantly, if relations are this public then how can any relational enfolding be intimate? I think Deleuze moves toward addressing this point when he summarizes his understanding of Leibniz by saying that "No philosophy has ever pushed to such an extreme the affirmation of a one and same world, and of an infinite difference or variety in this world."[72] This difference or variety is the difference in degree of clear and distinct representation, which for Leibniz, I think, results in not only a qualitative difference but a substantial difference. The enfolding of the world of monads in every relation, and the concurrence of every monad in this relation, still results in a completely unique perspective that no other substance is privileged to (except God). The concurrence itself may institute a global intimacy, but this can be understood as intimate despite the incorporation of all other substances because this concurrence is always understood uniquely from a distinct perspective; "The world must be placed in the subject in order that the subject can be for the world."[73] This intimacy shows that the privacy of my understanding is not limited to myself or others, but extends to my understanding of the world as well.

What I think Deleuze recognizes in the above passage is that, yes, all other monads (i.e. the world) are concurrent in the production of any given monad's representation of that world, yet this concurrence is not causal, nor does it create some shared experience. Rather, it is a

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[72] Deleuze, 58.
[73] Ibid, 26.

concurrence which results in a given monad being accommodated to the world it must represent.[74] This representation is therefore concurrent with all other monads but *exclusively represented by the monad in question*. This is the intimacy of concurrence: it is produced by the recognition of all other monads, but that recognition itself and the way the monad in question is accommodated to all other monads is still privately represented. The one world of infinite difference in representation, the single tunic "scored with folds multiplied to infinity."[75]

I think that when Leibniz uses the language of "accommodation" to describe the "interconnection of all created things," he makes it possible to understand this relation of the one to all others as still intimate because it is not a relation that is shared with all others despite its concurrence with them.[76] As Deleuze stated, Leibniz's approach affirms both that there is a one and same world for all substances and that this world is represented in an infinity of different ways by each substance.[77] What I think Deleuze could have emphasized more, though, is the intimacy of each monad's representation of that world. That is, each monad's unique accommodation to the world. No other subject will ever clearly and distinctly know the world as it is represented by another, but that same subject would not represent the world as they did without these confusedly understood representations of the world by others.

My point is that intimacy does not deteriorate due to the number of subjects incorporated in the relation so long as the relation itself remains privately understood. Throughout every level of relations, Leibniz is consistent that, due to perspectival limitations, subjects cannot have

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[74] In the *Monadology*, Leibniz seems to assert that this 'accommodation' is the result of God's "adjusting" all substances to one another: "[God] finds in each [substance] reasons that require him to adjust the other to it" (GP VI 615; AG 219). Cf. "This interconnection or accommodation of all created things to each other, and each to all the others…" (GP VI 616; AG 220).

[75] A.vi.3, 555 (LoC 185) [1676]

[76] GP VI 616 (AG 220) [1714]

[77] Deleuze, 58.

absolute knowledge about what they inquire about, whether the subject of this inquiry is oneself, another subject, or the world. Nevertheless, Leibniz affirms that even though the abstractions that are developed out of these perspectival inquiries are fundamentally limited, they are nevertheless useful, and they still pertain to their inquired subject to some degree.[78] Therefore, what I am calling 'intimacy' is the privileged access that allows for an abstracted recognition of the virtual coincidence among related subjects that a subject cannot express explicitly with clarity and distinction. I understand intimacy as a privileged position because it is a state of awareness regarding a relation that no other subject clearly and distinctly understands or shares. Nevertheless, these unique perspectives do all represent something similar, as Leibniz wrote:

> ...souls, in general, are like living mirrors or images of the universe of creatures, but that minds are also images of the divinity itself, or of the author of nature, capable of knowing the system of the universe, and imitating something of it through their schematic representations [*échantillons architechniques*] of it, each mind being like a little divinity in its own realm.[79]

What is imitated, the system of nature and the author of nature, is the *virtual* totality of infinity. In each imitation, some aspects are clearer than others. For instance, it's clear to me to some degree, especially after writing about it at such great length, that Paris and Helen are lovers. However, I do not know the intricacies of their love for one another, what made them certain of their relation with one another, how this love was expressed or represented, nor can I even be assured of the historical accuracy of describing them as 'lovers'. Clearly, Paris and Helen would know these things better than I. Yet, according to the demands that Leibniz's overall metaphysics puts upon his theory of relations, all other substances, even those with no awareness of Helen or Paris, imitate Helen and Paris' profound understanding of one another as well; except this

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[78] Cf. GP VII 401 (L 704) [1715], GP VII 321 (L 365) [around the 1690s], and C 520 (AG 32) [around 1686].
[79] GP VI 621 (AG 223) [1714]

imitation is entirely undeveloped, or to use another term that means the same thing: such an imitation remains always enfolded. It is the unfolded relation that is intimate because not all substances unfold the same relations, even if all relations are enfolded in all substances. It is this unfolding that is a privileged status, a status of intimate knowing where the imitations are the most congruent, the point where the extrema of these expressions are contiguous. However, none of this imitating would be possible were it not for the concurrence of all monads and the way this concurrence is uniquely unfolded for each substance. Concurrence is not an intimacy *with* all other substances, it is the intimacy of how all other substances are unfolded *for* the substance in question; "Thus man is there like a little god in his own world or *Microcosm*, which he governs after his own fashion: he sometimes performs wonders therein, and his art often imitates nature.[80]" There is only one and same world that all substances both inhabit and compose, but any substance living in this world experiences it in a microcosmic fashion. In this way, one's understanding of the world truly creates one's own world.

The world is therefore experienced in a privileged way, which is to say, the world is experienced in an intimate way. This is the way that the concurrence of all substances is enfolded as an order of intimacy in substances. As I understand it, Leibniz does not consider concurrence to be a shared act but instead a coordinated *acting*. Any given substance's intimate relation to the world would be impossible without its own actions and the *actions* of all other substances. The intimacy of relations is an activity because it unfolds for the individual acting (note that representing is a kind of action) substance as that substance acts and those actions are concurrent with the actions of all substances. This enfolded relation with the world of substances, despite its

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[80] Theodicy sec. 147.

concurrence, is intimate because all those actions are only understood uniquely and perspectivally.

Conclusion: What is Intimacy?

What I have tried to do is provide an account of why I have been using intimacy so broadly throughout these other chapters. I felt that to do so at the onset would be difficult considering the distinctions of intimacy that I am using build on Leibniz's own distinctions in relations, metaphysics, mathematics, logic, and physics. I have tried to be consistent throughout this work by stating that I am understanding intimacy to be a kind of privileged position. The privilege of this position differs based on the relation it applies to: for complex relations of self-to-self (particularly, the abstracted notion of self and the universe which the monad represents perspectivally), the privilege is the intimate and immediate certainty of self which results in that which is called 'I'; for relations of similarity, this is the privileged realization of one's similarity to others; for congruent relations, this privileged access is the additional awareness of equality and difference. Lastly, for concurrent relations, the privileged access is the private experience of the shared world.

For each type of relation a substance has, a privileged access is included into that relation. This privileged access applies to *each* substance in the relation, making each experience of that relation (no matter how similar) always irreducibly unique. Based on this, I am claiming that insofar as relations are a type of fold, what they enfold is a privileged understanding of the subjects themselves, others, and the world. Therefore, what relations enfold in subjects is intimacy.

<u>Conclusion</u>

> You have never experienced that horror, I know; because you have always and only clasped in your arms your whole world with your woman, without the least suspicion that she meanwhile with you is clasping her world, which is another, impenetrable. And yet, to feel this horror, you would only have to think for a moment of something, any trifle, something you like and she doesn't: a color, a flavor, an opinion on this or that; and it would make you perceive more than a superficial difference in tastes, sensations or opinions…the world, life, reality as they are to you, when you touch them, are not hers, for she sees and touches another reality in those same things and in you yourself and in herself; and she is unable to tell you how it is, because for her it is that and she cannot imagine it could be anything different for you.
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> – Luigi Pirandello, *One, No One, and One Hundred Thousand*.[1]

Pirandello finds horrifying the idea that every person represents and understands the world in a completely unique way that is incommunicable in any explicit way. For his character, Vitangelo, the impossibility of identical shared experiences also signals the impossibility of intimacy. The inspiration for this horror is a conception of the world that is easy to read into the world of monads that Leibniz provides. After all, Leibniz describes a world of windowless substances that harmoniously compose the world of experience but whose personal experiences are "as it were, a world apart."[2] However, this is not the whole story, and these explicit differentiations belie a virtual coincidence of expression. What horrifies Pirandello is awe-inspiring for Leibniz; it is only because of the differences in others' representations of the world that I can represent the world in my own way. My partner's taste in food has always been represented by me and is part of what influences my own taste; my sibling's political opinions have always been partly represented in my own; my neighbor's taste in music is represented in part in my own; all the atoms that make up Jupiter are each uniquely represented (albeit imperceptibly) in my disposition toward a certain color. Likewise, I influence all the rest of what makes up the universe just as equally.

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[1] Pirandello, 140-1.
[2] GP II 520 (AG 206)

I have argued that Leibniz arrived at this system of interconnection that preserves individuality in his solution to the problem of motion through folds. A fold of motion is an instance of motion that represents the entirety of the lesser folds that precede it (since motion is always divisible, there must always be smaller instances of motion) as well as the greater folds that will follow from the fold considered. This interconnection is understood as implementing a contiguum of instants of motion. Motion itself is a continuum, but the understanding of it (i.e. reflecting upon motion) institutes breaks. Yet those breaks are never truly disconnected from the continuum of motion; in a plenum where all bodies are contiguous with one another, the motion of any body in the plenum ripples out to affect all other bodies to varying degrees. I argue that this same operation of interconnection is at play in Leibniz's understanding of relations. My first chapter expands this understanding of folds such that it can be shown to be applied to more than just motion for Leibniz. I then propose a history of the development of the concept of folds in Leibniz by examining his use of complexions. Complexions are concepts taken as simple, even though it is possible to break them down into even simpler parts. Through establishing the consistency of Leibniz's use of this operation to solve issues of infinite division, I argue that there must be a perceptual continuum as well, and that relations are a kind of fold within this continuum. However, the spatial language that Leibniz uses to discuss the way folds operate in the material continuum is inadequate for discussing relational folds in perceptions. To determine a better language, Leibniz's theory of relations itself must be considered.

Leibniz's approach to relations divides them into three categories: comparative, congruent, and concurrent. Comparative relations evaluate subjects in terms of similarity or dissimilarity with regard to various qualities such as color, kindness, or height. Congruent relations deal with relations where the subjects considered are not only similar, but are also

equal, even though they can still be distinguished, such as equal length pieces of lumber where they seem interchangeable despite their distinct substantiality. Concurrent relations are those that describe the production of a relation by means of activity on behalf of the related subjects and it is these relations that are *like* relations of cause and effect or parts and wholes. Thus, concurrent relations most clearly reveal that relations are a kind of fold. The issue with both concurrent and congruent relations is that they express relations in a way that make the relation itself seem equally shared by each subject, which is incompatible with the basic tenets of Leibniz's substance metaphysics. I argue that it is the problem of congruency and concurrence in relations that Leibniz tries to solve by using logical reduplicatives. These logical reduplicatives break down relational statements into clearly distinct expressions by each subject. The reduplication makes it clear that the relation is only perceived insofar as X expresses Y, and Z expresses Q, e.g. Paris is a lover of Helen insofar as Helen is beloved by him. The problem with formulating relations in this way is that it makes the subjects seem *too* removed from one another. Logical reduplication does away with the interconnection of all substances by reducing each substance's relations to a set of corresponding predicates. This approach makes explicit the individuality of each substance and shows that there is no causal link, but it also omits the virtual coincidence of related subjects.

If virtual coincidence is important to relations, then it is likewise important to know what Leibniz means by 'virtual' and how he understands coincidence at the level of the virtual to function. Therefore, I examined the logical work where Leibniz addresses these concepts directly. For Leibniz, there is an explicit coincidence when A=A and a virtual coincidence when one realizes that 'Alexander the Great' and 'the king of Macedonia who conquered Darius' are coincident as well, but not explicitly. From this, I argue that all monads are virtually coincident

insofar as they all represent the world of monads equally, but from different perspectives. This allows for Paris' love of Helen and Helen's love of Paris to have a virtually coincident relational expression insofar as it is based in a shared world that is nevertheless explicitly different in its representation by each subject. The relation as it is represented by each subject can be rendered (or reduced to) a simple predicate but this overlooks the virtual coincidence.

On the opposite end of this spectrum, there are relational statements (e.g. "Paris and Helen are lovers"), which make explicit a shared connection that is not *explicitly* expressed by either subject in the same way. These relational statements are what I argue are *ideal* for Leibniz and are likewise why Leibniz often refers to relations as ideal. Leibniz's utilization of 'ideal' seems to carry a different connotation than the standard definition developed after his death. I argue that Leibniz's usage of 'ideal' describes knowledge produced through abstraction. This applies to relational statements insofar as my knowledge of the relation expressed by two subjects is always only a general understanding. That is, it is general insofar as it does not account for the infinity of perceptions that shaped the expression of that relation in each subject.

For Leibniz, clear and distinct knowledge is exhaustive and specific. The bulk of our knowledge, though, is not both clear and distinct. Knowledge is not distinct insofar as it is general (i.e. does not provide a complete understanding of the subject in question). Individual subjects themselves cannot be known distinctly because to do so requires an infinite analysis. Knowledge is clear rather than confused so long as one can distinguish subjects from one another; e.g., I know Paris and Helen well enough to distinguish them from one another. However, if I pick up a book that I left unfinished and try to start back up again, I may have difficulty distinguishing all the characters and might mistakenly associate the characteristics of one with another (this knowledge is confused rather than clear). Clear general knowledge allows

me to distinguish Paris from Helen even though I do not have distinct knowledge of either subject. Relational statements are useful because they provide a clear general understanding of the relation but also misleading and problematic if they are mistakenly understood as clear and distinct knowledge. Mistaking "Paris and Helen are lovers" for clear and distinct knowledge about Paris and Helen's relation makes the relation seem truly shared in such a way that either subject could be the cause of a change in another. For Leibniz, the changes in any subject are always of that subject's own making, although they may arise from the need for the subject in question to represent the changes in others. Relational statements obfuscate this and externalize causation.

My final chapter weaves all these threads of Leibniz's theory of relations together and shows that relations always include the interconnection of all monads in different ways. These different ways of including this interconnection are then categorized into different orders of intimacy. The order of relations is in some sense ascendant – each order of intimacy includes more than the last – but it is also to some extent circular insofar as each order of intimacy always enfolds the preceding orders as well as what follows from it. The intimacy of complexion considers the intimacy of self-to-self; insofar as each monad is a mirror of the universe, each self is also a mirror. Yet, the vast majority of this universe is perceived in an entirely confused way. However, it is not the 'self' that is most foundational for this relation. I argue that it is the bare monad that is incapable of apperception but always confusedly perceiving the world that is the simple primitive notion of self. Even at the level of a bare monad, there is an inextricable perspective. The perspective is entirely confused at this level, but it is out of this state that one arises to clarity in perceptions and becomes capable of apperceptions. From this, I argue that the self, taken as a simple, is truly the universe of all monads understood as a complexion. The

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second order of intimacy focuses on similarity, relations of comparison, wherein one realizes the differentiation between one's own expression of the world and others' expression of that same world. The intimacy of congruence recognizes not only the similarity of the expression, but also that the other's expression of the world is equal to one's own. It is not the case that monad A mirrors the universe such that it could be said to be in any way deficient in comparison to monad B (and vice versa). The intimacy of congruence is the relation understood as similar and equal, but still different. This congruence is clearly known by us only in those relations that are most explicitly expressed by us. I clearly recognize the love between my partner and me as congruent, but it is less clear to me how there can be congruence between my love for my partner and my neighbor's comparatively more confused representation of that love. The privilege of this intimacy is that the congruence is clear while the individuality of each subject is preserved (something that relational statements fail to do).

The final order of intimacy is concurrence. Concurrence is the realization of the fact that all subjects in the world influence my representation of the world, such that my relations and representation of the world are developed through my interconnection with them. This broadest form of intimacy is the trickiest to consider as intimate. The value of virtual coincidence is that it affirms a *single* world that all monads share but represent distinctly. It is through understanding virtual coincidence that Deleuze's reading is verified: "No philosophy has ever pushed to such an extreme the affirmation of a one and same world, and of an infinite difference or variety in this world."[3] Yet it requires more than the virtual to testify to an interconnection. It is through understanding Leibniz's account of concurrent relations that the interconnection of monads in this one world is made evident. Leibniz makes it clear that changes in one's representation of the

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[3] Deleuze, 58

world are always ongoing (whether or not one is aware of those changes) due to the interconnection of all things.[4] This interconnection of all things requires that any given substance is always representing the changes in all others. Likewise, all other substances are also changing insofar as they are representing all others. Furthermore, all the changes in representations must be represented (and so must those, and those, *ad infinitum*). What this means is that Paris is only a lover of Helen insofar as he represents the world in such a way that his own representation of himself makes him a lover of Helen. This change in 'himself' occurs because Paris is truly the world from his own perspective; therefore, if his representation of the world is changing, so is what he understands as his identity. In this case, Paris is a lover of Helen because he represents the world in such a way that he cannot be otherwise. This is not to say that the world is causing Paris to be one way or another. Rather, it is only saying that the greater fold "lover of Helen" contains within it an infinity of lesser folds that produced that relation, and is also represented by an infinity of greater folds

These folds, these abstracted singular instances of motion or particular expressions of a relation, are *ideal* insofar as they only provide a general understanding. Once one understands the role of the virtual in Leibniz, it becomes clear how these different ideal abstractions are nevertheless virtually coincident. Paris' understanding of himself as a lover of Helen and of Helen as beloved by him is virtually coincident with Helen's understanding of herself as a lover of Paris and of Paris as beloved by her; yet these are still different representations.

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[4] GP VII 321-2 (L 365) [around the 1690s] c.f. A.vi.6, 227 and 239 (RB 227 and 239), GP VI 613 and 616 (AG 218 and 220), GP II 59 (L 338) [1686], C 521 (AG 33) [1689], GP IV 484-5 (AG 143-4) [1695], GP II 226 (L 524-5) [1701]. As discussed throughout this project (but especially in chapter three), the language of interconnection is most often associated with Leibniz's theory of pre-established harmony. As I establish in chapter three, this interconnection should be understood as a harmonious acting together rather than a synchronicity that does not require engagement.

I have offered arguments that explain how Leibniz can have both a single and shared world with interconnected substances while also maintaining the idea of windowless substances. I think these arguments show how central the operation of folds is to understanding Leibniz's consistent claims for interconnection. Any work on Leibniz's theory of relations must take seriously the claims of interconnection and examine how the operation of folding addresses and explains this interconnection.

In addition to these claims about Leibniz's system of philosophy, I have also been committed to reading this account of relations as *intimate*. My argument for this intimacy relies on recognizing how that other to whom I am related shapes my understanding of myself and my relation to them (and vice versa for them). I have argued that it is only those who are most directly involved in the relation (e.g. Paris and Helen in the relation "Paris and Helen are lovers") who are able to realize the limitations of the relational statement in depicting the totality of the relation. Those who are most directly involved in the relation realize that their relation cannot be fully captured in the relational statement that expresses that relation. Paris and Helen may realize the validity of my calling them lovers, but they also know that what is included in this relationship "lovers" is more than the relational statement itself can declare. Therefore, this privilege of intimacy is the knowledge of what is not explicit in the relational statement.

However, I have also argued for a kind of global intimacy due to the concurrence of all substances in the production of any given relation, at which point the language of privilege (and intimacy) seems inadequate. This aspect of intimacy requires the most defending but is also the aspect that follows from Leibniz's philosophy which I think is one of the most intriguing. The interconnection of all substances asserts that all representations of the world of monads for a given monad are shaped by the representations of the world of monads *by* those other monads.

This means that the world as I experience it is only experienced by me in this way due to the infinity of monads, the overwhelming majority of which I am not aware of even existing. How can this be intimacy? It is intimacy not in the process but in the result. The single world that is constituted and shared by all monads is uniquely understood by me. For me, it is as if it were a world apart because it is a world that is intimately my own. No other substances can know the world as I do even though they are in that same world with me.

I have argued that the exclusion of unfolding is just as critical as the inclusion of enfolding. All other substances are included in my representation of the world but are excluded from experiencing how they are included in that world for me. The world is intimately experienced by me *as if it were* my own. This is only horrifying and solipsistic for Pirandello because he ignores the process that constitutes this world. Reality is surely one thing for me and another for you, but it is only what it is for me because of you and all others. Paris' relationship with Helen is surely one thing for Paris and another for Helen, but the constitution of that relationship does not follow from Paris or Helen alone. While I have perhaps opened the door for considering intimacy on a universal level (whether through Leibniz or otherwise), I think there is still more work to be done to consider the value and limits of universal intimacy (or indeed, whether it is proper to continue calling it intimacy or to describe this relation in some other way).

I think I have provided compelling reasons and arguments for reading Leibniz's theory of relations in the way that I do, and that I have persuasively argued for considering Leibniz's theory of relations as intimate. However, this does not amount to showing that my account of intimacy is compelling as an account of intimacy. I have argued that it is important that intimacy never collapse into a unity, that the individuality of subjects be unassailable. Insofar as I have shown that Leibniz's account of relations is intimate, I have also argued that intimacy demands a

limit in terms of distinguishing myself from those I am related to; intimacy is not obtained so long as the relation is considered truly "shared". Such a view on intimacy acknowledges the unique individual experience of a relation, but it also seems to diminish the connection that is experienced in those relationships considered most intimate in the common sense of the word. Indeed, this view of intimacy seems to be exactly what horrifies Pirandello in his novel. One might also wonder if it is actually the case that any account of intimacy implies a dissolution into a unity.

The account of intimacy from Luce Irigaray, particularly as it is expressed in *To Be Two*, is quite similar to my own. In *To Be Two*, Irigaray criticizes Merleau-Ponty, Sartre, and Levinas for their views on love.[5] Irigaray's critique essentially claims that these philosophers all maintain a kind of anxiety around the dominative aspects of love. For Irigaray, it is important to realize the impossibility of this domination and recognize that the other person to whom I am related is just as transcendent to me as I am to them.[6] Ignoring this transcendence institutes an illusion of domination, or of being dominated, when one feels love toward another.[7] In opposition to views that ignore the transcendence of the other, Irigaray writes:

> Far from wanting to possess you in linking myself to you, I preserve a 'to', a safeguard of the in-direction between us – *I Love to You*, and not: I love you. This 'to' safeguards a place of transcendence between us, a place of respect which is both obligated and desired, a place of possible alliance.[8]

This possible alliance, as I understand it, is the congruence of relational expressions that still maintains individuality. While all of this may seem to align my theory of intimacy squarely with

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[5] Luce Irigaray, *To Be Two*, pp. 17-29. (New York, 2001)
[6] Irigaray, 19.
[7] This illusion is similar to the fallacy of coincidence that I discuss in the second order of intimacy in the fifth chapter.
[8] Ibid.

Irigaray's account of love, her more recent works, *The Way of Love* and *Sharing the World*, distance our positions.[9] For instance, in *The Way of Love*, Irigaray discusses the possibility of a kind of dialogue of silence with the other where there appears to be, if not a shared relation, at least a common understanding of being.[10] Similarly, in *Sharing the World*, Irigaray discusses the possibility of opening oneself up to the other at "borders" or "thresholds", where an opening between the world of the other and myself is possible.[11] While Irigaray seems cautious to preserve the "irreducible difference of the other", I worry that this goal of producing a meeting place will nevertheless lead to diminishing the integrity of both subjects' autonomy and individuality.[12] As Irigaray herself makes clear, there are many habits in our everyday language that imply, even if unconsciously, a dominative aspect of intimate relationships. In this case, when I say 'dominative', I mean language that speaks of unity.

Unity, as I understand it, is always a dissolution of both subjects into one that destroys the possibility for a relation. Such a conception of relations, particularly marital relations, can be seen in Genesis 2:24, wherein it states that "man shall leave his father and his mother and hold fast to his wife, and they shall become one flesh."[13] It would seem that a Judeo-Christian view implores partners to disavow their individuality and to function as a single unit. Even though the 'becoming one in flesh' is largely metaphorical, at best one can propose that the suggested meaning is something like: 'one should seek to abandon self-concern and pursue disposition of care and understanding toward the other as if they were one's own self.' Such a message is certainly worthwhile as long as the 'as if' is preserved and the idea of unity itself is recognized as

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[9] Luce Irigaray, *The Way of Love.* (New York ,2001), Luce Irigaray, *Sharing the World*. (New York, 2008)
[10] Irigaray, *The Way of Love*, pp. 99-100, cf. 82-85.
[11] Irigaray, *Sharing the World*, pp.7-9
[12] Irigaray, *Sharing the World*, pp. ix-x. cf. pp. 34-35.
[13] Cf. 1 Corinthians 7:4

impossible. At worst though, 'becoming one in flesh' presumes the possibility of actually

dissolving two distinct individuals into one. My issue with this is that at this point, the point of

unity, there is no longer any relation. Relations require an other, so unifying with that other

removes the possible ground for a relation. Leibniz's system of relations avoids this issue

through making it metaphysically impossible for such a unity to occur.

A conception of relations, and unity, which is similar to the Judeo-Christian account is

given by Aristophanes in Plato's *Symposium*. Aristophanes, in his speech on love, provides a

detailed mythical account of how humans used to be: four-legged, four-armed, and with two

faces on a single neck.[14] Our state has since changed because we angered the gods and were

thereby punished by being split in two. Yet for Aristophanes, the power of love lies in its ability

to restore us to our previous state: "This, then, is the source of our desire to love each other. Love

is born into every human being; it calls back the halves of our original nature together; it tries to

make one out of two and heal the wound of human nature."[15] Aristophanes even proposes that if

the god Hephaestus were willing to offer it, no true lovers would ever turn down the offer to be

fully unified with their partner.[16] However, Aristophanes does not clarify what happens to either

subject's individuality after such a mending process occurs. Aristophanes' speech carries the

tone of a fairy-tale romance that could anachronistically be understood as an account of

soulmates, but this is not the goal of Aristophanes' speech. Aristophanes' speech is truly a

discussion of the incomplete state of humans and a plan to resolve this incompleteness through

the means of loving another. In this case, the other person is not truly another for me, but

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[14] Plato, *Symposium*, as found in *Plato on Love* (ed. C.D.C Reeve), 189d-190b. (Indianapolis, 2006)
[15] Ibid, 191d.
[16] Ibid, 192d-192e.

something of mine that was lost and must be returned. This view does not treat intimate relationships as *mutual* productions, but rather as a means to restoring oneself.

For Georges Bataille, yet another kind of 'becoming one in flesh' occurs, even though each related individual should be properly understood as "*discontinuous* beings."[17] For Bataille, there is only a brief moment of unity and it occurs in the reproduction of sexual animals: "Sperm and ovum are to begin with discontinuous entities, but they *unite*, and consequently a continuity comes into existence between them to form a new entity from the death and disappearance of the separate beings."[18] For Bataille, a relation of unity comes only through death.[19] This view ultimately agrees with my own concerns: there is no unity in intimacy except at the cost of individuality. Moreover, as stated above, this would mean that any kind of unity cannot be referred to as intimate insofar as it is no longer a relation. Intimacy must recognize the limits of relations, but intimacy also affords privileges. However, Bataille focuses on this limitation in a specific set of relations, whereas I think that all relations run this risk of personal annihilation if unity is possible.

The medieval Neoplatonist figure referred to as Pseudo-Dionysius offers a uniquely erotic account of our relationship with God that signals another issue with unity. Dionysius refers to the love of God as a 'yearning' for unity with God.[20] This yearning for God is a desire to return to the goodness of God, since all things exist as emanations from God's goodness.[21] However, the potential for this return is made difficult by the fact that, "[God] is not a facet of being. Rather, being is a facet of him. He is not contained in being, but being is contained in him.

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[17] Georges Bataille, *Erotism: Death & Sexuality*, p.12. (New York, 1962)
[18] Ibid, 14.
[19] Ibid, 13-14.
[20] Dionysius, *The Divine Names*, 709d.
[21] Ibid, 712c-d.

He does not possess being, but being possesses him… He does not possess *this* kind of existence and not *that*. No. He is all things since he is the cause of all things."[22] What this ends up meaning is that since God is all things, any unity with God is likewise a unity with all things. The yearning for unity with God is unfulfillable in the sense that to be one with God is to be one with everything, since God is all things. Dionysius' account is perhaps the most similar to my understanding of the intimacy of concurrence in Leibniz. Paris' relationship with Helen is, to varying degrees, a relation with the whole world of monads. However, unlike Dionysius, Leibniz does not require the dissolution of self to experience this universal relation, nor is it only achieved through a love of God. For my understanding of intimacy, Leibniz once again seems to be the superior theorist insofar as he provides the most exhaustive safeguarding of individuality while still accounting for the interconnection of all things.

It could be argued that none of the views I discussed above are truly engaging intimacy, but only different forms of loving relations. This is perhaps fair, but I think it is likewise fair to say that, insofar as they are discussing relations, they are discussing them in a way that can be evaluated as intimate or not. My approach to understanding Leibniz's system of relations is by understanding relations as a kind of fold. Understanding relations in this way results in a theory that solves the issues with intimacy that I see in Irigaray, Bataille, Dionysius, and others while sacrificing none of the positive aspects either.

Therefore, the work I've done here provides arguments and conclusions that can offer better starting points for future scholars of Leibniz who want to engage the issue of how monads can be windowless and still interconnected, or to consider the fact that the operation of 'folding' may be one of Leibniz's richest philosophical concepts. However, what I have done here also

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[22] Ibid, 824a-b.

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proffers Leibniz's theory of relations as a legitimate starting point for a theory of intimate relations. My hope is that this project allows for more in-depth analyses of concurrence in Leibniz and the operations of folding that establish this universal interconnection. Moreover, I hope that by showing that relations are a kind of fold for Leibniz, others will consider different aspects of Leibniz's philosophy as also instituting the operation of folds. I think I have shown that this operation of folding is not limited to motion and material and also not just a beloved metaphor. Leibniz's theory of folds is a vital philosophical contribution that merits further consideration. I hope this project has offered some insight into the value that can be found by examining this system.

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