Singular and Universal in Suárez's Account of Cognition

James B. South
Marquette University, james.south@marquette.edu
SINGULAR AND UNIVERSAL
IN SUÁREZ’S ACCOUNT OF COGNITION

JAMES B. SOUTH

Francisco Suárez, the great Jesuit philosopher and theologian, has long been recognized as a pivotal figure in the development of Western philosophical tradition but also bears striking intimations of key themes in modern thought. In this paper I address one of the most controversial questions related to the thought of Suárez, namely, his relationship to the nominalist tradition. However, I shall do so rather indirectly by focusing not on explicit metaphysical questions but rather on his account of our acquisition of universal concepts and its foundation in reality. By placing questions about the knowledge of singular and universal at the center of the discussion, I hope to shed new light on his account of the objectivity that we can have in our knowledge.

Suárez is explicit that the intellect first forms a “proper” and “distinct” concept of the singular and only subsequently forms a concept of the universal. While this position clearly represents a departure from one strand of later medieval thought, for example, that of Thomas Aquinas and Duns Scotus, it is neither original with nor unique to Suárez. Indeed, many of his fellow Jesuit philosophers held the same view as did several earlier thinkers beginning in the thirteenth century. However, I think it is safe to say that the most famous proponent of the view that our intellect first knows singulars and knows them

Correspondence to: Department of Philosophy, Marquette University, P.O. Box 1881, Milwaukee, WI 53201.

directly and distinctly is William of Ockham. Indeed, this similarity between Ockham and Suárez has led some scholars to link the two authors together. Now, it is not only concerning this issue of the priority of the knowledge of the singular that scholars have detected similarities between Suárez and Ockham. Both thinkers share a conviction that all the items in the world are singulars and that commonality is not a property of such items but is dependent on some activity of the mind. As a result of this commitment to the priority of concrete individuals both authors commonly are classified as nominalists.

This linking together of Suárez and Ockham is a tricky issue revolving around one’s attitude toward nominalism as an ontological program and, more fundamentally, a presupposition that there is some noncontroversial definition of nominalism. In fact, the taxonomy of medieval positions on universals is such that Ockham might be called most accurately a “nominalistic realist.” While this may be

---

2 For a history of the problem of intellectual knowledge of material singulars, see Camille Bérubé, La connaissance de l’individuel au moyen âge, (Montreal: Presses de l’Université de Montréal; Paris: Presses Universitaires de France, 1964). Ockham explicitly argues in many places that the first object of the intellect is the singular as it appears to the senses and that the production of a universal is subsequent. See, for example, Ordinatio I, Prologue, q. 1, a. 6; Ordinatio, bk. 1, dist. 3, q. 6; Quodlibeta septem, qq. 1, 13. For additional important discussions of the production of universal concepts, see Expositio in librum Perihermenias Aristotelis bk. 1, chap. 6; Ordinatio, I, dist. 2, q. 7. My understanding of Ockham’s “nominalism” has been shaped by two books: Teodoro de Andrés, El Nominalismo de Guillermo de Ockham como Filosofía del Lenguaje (Madrid: Editorial Gredos, 1969), 57–76, 111–36; Claude Panaccio, Les Mots, Les Concepts et Les Choses: Le sémantique de Guillaume d’Occam et nominalisme d’aujourd’hui (Quebec: Éditions Bellarmin; Paris: Librairie Philosophique J. Vrin, 1992), 215–78. See also, Marilyn Adams, William Ockham (Notre Dame: University of Notre Dame Press, 1987), 1:109–42.


4 For a useful account of the commitments shared by Ockham and Suárez, see Noreña, “Ockham and Suárez.”
a precise term for Ockham’s position, it also suggests that the realist/nominalist contrast is less than helpful as shorthand for a thinker’s position on the question of the objectivity of our universal concepts. Instead, what is necessary is a clear exposition of the texts within the context of an author’s problematic. In this paper I shall discuss the problematic present in Suárez’s discussion of intellectual knowledge. It is a familiar enough problematic in some ways insofar as it is dependent on prior medieval discussions for both its central issues and its technical terminology, but in other ways it is, as I show, rather distinctive. It consists of three components: a metaphysical theory about the nature of items existing in the world, a theory of the soul and its relation to the body, and a theory of cognition by which humans come to know the world. These three components interrelate in Suárez’s thought in such a way that rejection of any of the components is sufficient for the entire theory to collapse. However, if one accepts the three components, the theory fits together quite well and provides an account of our knowledge that ensures both its objectivity and certainty.

5 “Nominalistic realist” is the term used by Stephen Brown in his “Realism versus Nominalism,” The Columbia History of Western Philosophy, ed. Richard H. Popkin (New York: Columbia University Press, 1999), 272. I think that at this point we must recognize that the taxonomy of realism/nominalism simply needs to be scrapped since it obscures our gaining an accurate view of a philosopher’s position on the status of our knowledge of singulars and universals. Indeed, Suárez suggests that the “nominalists” are in fact guilty of exaggerated language on behalf of their position rather than guilty of actually denying realism: “And they [the nominalists] are deservedly rebuked with regard to some ways of speaking; for perhaps in fact they do not disagree with the true view, for their reasons tend only to this that they prove universality is not in things but accrues to things through denomination from some operation of understanding—which is true as I shall say below. And indeed there is no need for us to be referring to and analyzing their arguments; for they in no way whatever prohibit its being true that the natures which are denominated universals should be in singulars and that the singulars themselves should have among themselves something in which they agree or are alike and something in which they differ or are distinguished”; Metaphysical Disputations, disp. 6, sec. 2, par. 1, from the James Ross translation in On Formal and Universal Unity. Medieval Philosophical Texts in Translation 15 (Milwaukee: Marquette University Press, 1964), 39. Henceforth, I shall cite the Metaphysical Disputations as DM, followed by disputation, section, and paragraph. In his introduction to this translation, Ross correctly states that “there is no evidence whatever for calling Suárez a nominalist” (26).
In what follows I shall begin with a discussion of basic principles of cognition. In particular I shall show why it is that Suárez believes that we first and properly know singulars prior to knowing universals. It turns out that his commitment to this account of knowledge is grounded by a theory about the powers of the soul, and I shall explore several features of his view on the soul and its powers. In fact, this issue concerning the soul and its powers is central to Suárez’s account of the priority of the knowledge of the singular. Once he has committed himself to the priority of the knowledge of the singular, it becomes crucial to explain how knowledge of universals is possible. That can only happen by considering the nature of the objects of knowledge and the way in which they are both singular and similar. Once we have made clear the cognitional and metaphysical theories, we can see that the account he gives of the universal is one in which objectivity is ensured. I then conclude with some reflections on the plausibility of his general approach to the questions under review.

I

Knowledge of the Singular. We can begin with Suárez’s recognition of the obvious fact that we are able to form propositions with a combination of singular and universal terms, for example, “Argo is a

---

6 This topic has generated some interest among Suárez interpreters. The more important studies include: Gabriel Picard, “L’intelligible infraspéci-fique d’après saint Thomas et Suárez,” Archives de philosophie 1 (1923): 63–80; José María Alejandro, “Gnoseología de lo singular según Suárez,” Pensamiento 3 (1947): 403–25 and 4 (1948): 131–52; Josef de Vries, “Die Erkenntnislehre des Franz Suárez und der Nominalismus,” Scholastik 32 (1949): 321–44; Peccorini, “Knowledge of the Singular.” One drawback shared by all these interpreters is the need to view Suárez as a kind of Thomist. So, for example, Peccorini calls Suárez’s position a “diminished Thomism” and accuses him of nominalism. I have already suggested that the term “nominalism” is not likely to help us much in understanding Suárez. I also think that comparisons with Thomas are less than helpful. As I show below, Suárez takes issue with key themes in Thomas’s account, and to argue that this is because he misunderstood Thomas, as Peccorini does, is to fail to give Suárez sufficient credit for his own attempt to make sense of knowledge of the singular within the context of his own thought. He is not just modifying one theme from Thomas but is elaborating a position that has deep roots in his metaphysics, psychology, and natural philosophy.
horse.” Of course, no medieval philosopher would deny such an obvious fact of our mental life. Accordingly, Suárez recognizes that the central issue is not about the existence of such propositions but rather about how the intellect forms them. He takes it as his baseline that one power cannot form such a proposition unless it knows (cognoscere) both terms. This premise blocks a move that would restrict the intellect to possessing only a cognition of universals with the result that the singular term would be known by some internal sense power, not the intellect. While that move would safeguard Aristotle’s famous dictum that the intellect knows universals while the senses know singulars, the question would arise still about how these two powers work together. Suárez is justifiably curious to know in which power the copula would reside—the sense power or the intellect—and, indeed, finds this nonsensical question to be a reductio proof for his baseline premise. More positively, since we can consider Argo and horse separately we must know both of them in the same way; that is, they must be objects of the same power. To understand his point, consider the operation of the external sense. Our sense of sight, for example, can distinguish among various colors but not between a color and a sound. It can distinguish among colors because each color is a proper object of the power of sight, and it cannot distinguish a color from a sound because a sound is not its proper object. Thus, in saying that the intellect forms a proposition consisting of a universal and a singular, Suárez is committing himself also to the position that the singular can be known distinctly (distincte) by the human intellect apart from any other concept, whether another singular concept or a universal. In addition to the baseline claim, Suárez adds a second argument on behalf of the intellect’s ability to know singulars: the intellect can direct and correct the senses. Now, this ability signals that the intellect is a superior power over the senses and as a superior power should be able to know all those things the senses know. The conclusion is obvious enough: because senses know singulars and

---

7 Aristotle had taken propositions that joined singular and universal as unproblematic. See, for example, De anima 2.5.430b4–6.
8 Aristotle, De anima 2.5.417b21–6; Posterior analytics 1.31.87b37–9; Physics 1.5.189a2–8.
know them distinctly, so the intellect must know singulars distinctly as well.\footnote{Francisco Suárez, \textit{Commentaria una cum quaestionibus in libros Aristotolis De anima}, ed. Salvador Castellote, 3 vols. (Madrid: Sociedad de Estudios y Publicationes [vols. 1 and 2] and Fundación Xavier Zubiri [vol. 3], 1978–91), disp. 9, q. 3, par. 3; vol. 3:108–10. Henceforth, I will cite this work as \textit{DA}, followed by disputation, question, and paragraph, as well as volume and page number. In addition to these considerations, Suárez also notes other experiences in support of our knowledge of singulars: (1) the faculty of prudence reasons about singulars; (2) faith is an intellectual virtue, and the objects of faith are frequently about singulars (for example, Mary’s virginity); and (3) the objects of charity are singulars, and the will, in which acts of charity arise, follows the intellect. A note about the work that provides the basis for my discussion is in order. The \textit{Commentaria} is the result of Suárez’s early teaching assignment at Segovia in 1572 and was never published in Suárez’s lifetime, although he worked on revising it for publication late in his life. It was his editor, Baltasar Alvarez, who put together the final printed edition of the work in 1621, including in the editing process several interpolations. Accordingly, the early \textit{Commentaria} is where we can find Suárez working out the foundations for his subsequent writings and at the same time avoid the rather heavy editorial hand that mars the edition of the commentary in his \textit{Opera omnia}. For the full manuscript history of the \textit{Commentaria}, see Castellote’s introduction to vol. 1 (pp. 37–68). For a full chronological list of Suárez’s writings, see Marcial Solana, \textit{Historia de la filosofía española, época del Renacimiento} (Madrid: Real Academia de Ciencias Exactas, 1941), 3:333–40.}

The fact of the intellect’s knowing singulars is not surprising, and I do not want to dwell on it here, nor, indeed, does Suárez dwell on it. He wants to stress a more controversial point concerning the way that we know singulars. Here, then, we confront several key issues in Suárez’s psychology of cognition. A brief overview of the broad outlines of that psychology might be helpful before descending to the details. He shares a vocabulary with his medieval predecessors in which the soul and its powers are central to any account of cognition. There are two main categories of such cognitive powers, the sensory and the intellective. Moreover, within each of the categories there is a further breakdown that is of significance. The sense power is comprised of both the external and internal powers. The external senses are activated by receiving the forms of external objects. The technical term for these forms or likenesses is “species.” The external senses, though, merely receive and sense the objects that are present. In addition, there must be some power that retains and synthesizes the different species received by the external senses. The internal sense is such a repository. However, the internal sense also plays another role...
thanks to its ability to combine received species. For example, the imagination can compose an image of a gold mountain based on its prior formation of the images of a mountain and of the color of gold. These images within the internal senses are known as “phantasms.” The intellective side of the cognitive apparatus, too, is divided into two main subpowers: the agent intellect and the potential intellect. The agent intellect is responsible for acting on the phantasm in the internal sense and rendering it knowable. The main issue here is that the intellect, as a purely immaterial power, has no bodily organ through which it operates. Hence the phantasm must be “elevated” in some way to make it suitable for intellectual cognition. This is the work of the agent intellect, and it accomplishes its work by “illuminating” and “abstracting” the intelligible content present in the phantasm. However, once the agent intellect has illuminated and abstracted the content of the phantasm, thereby producing the intelligible species, the intellect must still use that species in order to know. That task is accomplished by the potential intellect, which receives its name from the fact that it can at least potentially know all things. With this vocabulary and general picture in place we can understand the point at issue for Suárez.

It might also help to clarify Suárez’s account by contrasting it with the view of Thomas Aquinas on how we know singulars:

Our intellect cannot know the singular in material things directly and primarily. The reason for this is that the principle of singularity in material things is individual matter; whereas our intellect . . . understands by abstracting the intelligible species from such matter. Now what is abstracted from individual matter is universal. Hence our intellect knows directly only universals. But indirectly, however, and as it were by a kind of reflexion, it can know the singular because . . . even after abstracting the intelligible species, the intellect, in order to understand actually, needs to turn to the phantasms in which it understand the species. . . . Therefore it understands the universal directly through the intelligible species, and indirectly the singular represented by the phantasm. And thus it forms the proposition, *Socrates is a man.*

On St. Thomas’s view, the phantasm, a representation of the singular in the internal sense power, provides the basis for the agent intellect to abstract a universal intelligible species (a kind of representation of

---

10 *Summa theologiae* I, q. 86, a. 1. This is the Anton C. Pegis translation from *Basic Writings of Thomas Aquinas*, vol. 1 (New York: Random House, 1945).
the intelligible content of an individual) by which the intellect can know the common nature present in the entities in the world. Knowing the singular, then, is a secondary process by which the intellect, having come to an understanding of the common nature, reflects back on the phantasm that was the source of the intelligible species and in this indirect way has some understanding of the singular. As we shall see, Suárez rejects every assertion made by St. Thomas in this passage.

There are two important aspects to Suárez’s position about the way in which we possess singular knowledge. First, he argues that we have a proper knowledge of the singular, and second, he argues that our knowledge of the singular is direct and, consequently, prior to our knowledge of the universal. These claims involve a radical rethinking of the traditional Thomistic view of the priority of quidditative or common knowledge and require accordingly a revision of the functions of the agent and potential intellect. After all, if one rejects the view that the agent intellect primarily functions as a device for extracting universal intelligible content from singular phantasmic representations, what kind of function is left for it? Moreover, if it is not the agent intellect that is responsible for universal content, what power is? These two questions lie at the center of Suárez’s account of the process of cognition.

What does he mean when he states that our knowledge of the singular is “proper” (proprius)? He tells us that, “A concept is called proper when the reality (res) is conceived (concipitur) as it is conceivable in itself through its proper likeness (similitudo) and not through analogy or negation.”¹¹ Here the crucial claim is that the proper likeness is the essential precondition for the proper concept. In Thomas’s account of intellectual cognition, the proper likeness is the intelligible species or that through which the nature or quiddity of the material object is known. That intelligible species, though, is a universal representation and can hardly be considered a proper likeness of the singular object. Consequently, Suárez rejects the Thomistic view of the intelligible species. For him the intelligible species cannot represent the nature considered universally but rather repre-

¹¹ DA 9.4.3; 3:156: “Alio modo dicitur conceptus proprius quando res concipitur prout in se conceptibilis est per propriam sui similitudinem et non per analogiam vel per negationem.” All translations from the Commentaria are mine.
sents the singular itself. As a result, the intelligible species through which we know Argo is not a representation of Argo’s horsey nature conjoined with a phantasmic representation of Argo, but instead it is a likeness of Argo himself.

There are two strands of argument at work here: a metaphysical one based on the structure of the soul reflected in the account of agent intellect and phantasm and another based on the epistemological requirement that the singular be first known. I shall address the epistemological concern before worrying about the nature of the soul. Why does Suárez believe that the singular must be known prior to the universal? The answer to this question can be found in his explicit rejection of an account of our knowledge of the singular that would stress a reflective component as necessary for such knowledge. In brief, our knowledge of the singular must be direct or otherwise we can have no proper knowledge of the singular at all.

Suárez provides us with two arguments against reflection accounts of knowledge of the singular such as that presented by St. Thomas. First, before someone knows to make some reflection from universal to singular, he must already know the singular. After all, even the unlearned who know nothing about the natures of things know and reason about singulars. This experience, which Suárez believes to be obvious, makes it exceedingly unlikely that the universal is known first. Second, if there were only universal species representing the common nature, there would need to be only one species representing all humans since once it was produced, all other species would be superfluous. The idea here is pretty clear: we have sensory experience of some singular and from that experience abstract a species of that singular. If the species is properly one by which we directly and primarily know the nature, then we have a species of that nature present, and future sensory experiences will not alter that species. Suárez’s problem with that view is that it destroys the distinct knowledge we have of other singulars from subsequent experience. So, if I know Argo, and from that experience form an intelligible species of horse, when I subsequently come across other horses, say Mr. Ed or Trigger, I already know they are horses because I have the relevant intelligible species. But that means I form no intelligible species based on Mr. Ed or Trigger, so I have no intellective way to distinguish one from the other as well as from Argo. The only way I could know Mr. Ed or Trigger would be by applying to them the intelligible species based on my
experience of Argo through some process of reflecting on the phantasm representing them. Therefore, we would have a merely phantasmal cognition of Mr. Ed or Trigger and we would not have a properly intellectual knowledge of them. These two arguments both point to the need for an intelligible species that is singular in representation rather than universal. That issue, in turn, points to the rethinking of the relationship between the phantasm and the agent intellect. After all, since the intelligible species is not a universal representation of the nature inherent in the material singular, it is unclear what role if any it needs to play. If the intelligible species is a representation of the singular in a proper and distinct manner, we might wonder if it is not in fact redundant. The phantasm is already a representation of the singular. Why, then, is it not sufficient for the intellect? On the Thomistic account, the nature is present potentially in the phantasm and the agent intellect is required in order to abstract that nature rendering it actually intelligible. Clearly, that is not the role Suárez assigns to the agent intellect. Instead, he argues that the agent intellect is necessary only because the phantasm of itself cannot alter the intellect. The issue, it turns out, is not the intelligibility of the phantasm but its materiality: “For our intellect cannot be moved except by the object represented in the phantasm. Now the phantasm is material (materialis), so it cannot produce a spiritual (spiritualis) species in a spiritual (spiritualis) intellect.”

Suárez admits that the agent intellect would not be needed if the species were innate to us. However, since he holds that (a) the intellect is a tabula rasa at birth, (b) the soul, as the form of the body, makes use of the body, and (c) the latter’s primary function in the cognitive realm is to provide species, it follows that the agent intellect must play a crucial role in our acquisition of knowledge. Thus, species provided in some way by the senses play a fundamental role in our gradual acquisition of knowledge. The task of specifying the precise role played by the senses, though, is a difficult one. Suárez discusses two positions on the role of the agent intellect before venturing his own. It is helpful to see what he finds wrong about the two

---

13 DA 9.2.2; 3:78: “Nam intellectus non movetur, nisi ab objecto in phantasmate representato; phantasma autem materiale est; ergo non potest agere in intellectum spirituallem spirituales species.”
14 DA 9.2.2; 3:80.
opinions since he develops his own view on the basis of his criticisms. The first view holds that the action of the agent intellect is to illuminate objectively *(objeective)* the phantasm. The basic point here is that the agent intellect, being spiritual, cannot have its light inhere in the material phantasm. The contrast is the way in which light formally *(formaliter)* illuminates air by existing in *(inhaero)* the air. The light of the agent intellect, then, provides some extrinsic aid so that something appears in the phantasm, but this aid is extrinsic and the light does not exist in the phantasm. This action of the agent intellect allows the quiddity potentially present in the phantasm to produce an intelligible species.\textsuperscript{15} Note that the most important implication of this account is that agent intellect does not produce the species but rather the illuminated phantasm itself is productive of the species.

Suárez’s objection to this view is twofold: the process of illumination as presented makes no sense, and additionally the agent intellect would be a needless power in the production of the species. The first objection brings out Suárez’s primary thesis about the action of the agent intellect. He asks whether the extrinsic illuminative action impresses something on the phantasm, or, in other words, whether the phantasm itself is really changed by the action of the agent intellect. This question is pressing because the potentially intelligible phantasm really does somehow become actually intelligible. How does that change occur? Something, on the account he is considering, must happen to the phantasm. Rejecting this view, Suárez denies that anything can happen to the phantasm: “The entire action of the agent intellect is spiritual, so it can impress nothing on the material phantasm. Therefore, it cannot really alter it, so it cannot illuminate it in any way.”\textsuperscript{16} This statement is unequivocal: the spirituality of the agent intellect and the materiality of the phantasm rule out any sort of real

\textsuperscript{15} *DA* 9.2.5; 3:84. Suárez notes that this view bears a striking resemblance to the view of Henry of Ghent who argued that the agent intellect did not produce an intelligible species but merely illuminated the phantasm in such a way that the potential intellect could “look at” the quiddity. For Henry, see *Quaestiones Quodlibetales* V, questions 7, 8, 14, and 21. There is a problem in Suárez’s text at this point: While the Cubells edition actually has “intrinsica assistentia,” this is clearly a mistake. Indeed, the translation attached to the edition has “asistencia extrinseca.”

\textsuperscript{16} *DA* 9.2.6; 3:84: “Nam tota actio intellectus agentis est spiritualis; ergo nihil potest imprimere phantasmati materiali; ergo non immutat illud realiter, ergo nullo modo illuminat. Et per hanc unionem aiunt etiam illuminari phantasma ab intellectu agente.”
action of one on the other in either direction. He presses a second objection starting from the fact that a spiritual light cannot inhere in the phantasm and concludes that if the agent intellect is not productive of an intelligible species, there is no other real action that we can attribute to it. Clearly, though, the agent intellect must do something or else we will have no explanation of how the phantasm becomes present to the intellect. Consequently, the agent intellect must produce a spiritual species that provides the foundation for intellectual knowledge. So, he concludes, the phantasm must be understood as remaining material, and in this way it always represents a singular.\textsuperscript{17}

The rejection of the first opinion he considered, coupled with his prior assertion that the phantasm cannot act on the intellect suggests the principle which I shall call the Cognitive Process Dualism Principle (CPD, for short). CPD states that no material cognitive process (that is, sensation) can really effect a spiritual cognitive result, and no spiritual cognitive process can effect a change in a material cognitive power. His adherence to CPD will have important consequences for how Suárez explicates the work of the agent intellect. Now, as far as I can tell, Suárez nowhere explicitly argues for CPD but rather takes it as a basic fact from which he builds his theory. At this point, it is sufficient to put CPD on the table and show how it gets used in his arguments against more traditional views of the relation between phantasm and agent intellect. I shall return below to why Suárez might think CPD is a rational principle to hold.

The next position concerning the relation between phantasm and agent intellect that he considers holds that the agent intellect and phantasm are joined together effectively (effective) in the production of the intelligible species, the former as principle agent and the latter as instrumental agent. The principle behind this view is that the phantasm must exercise some causality in the production of the species: "The agent intellect is united first to the phantasm by a sort of virtual contact and thus united the phantasm is moved and directed by the agent intellect and receives the power to produce and intelligible species. And they say also that through this union the phantasm is illuminated."\textsuperscript{18}

Again, the commitment to CPD is apparent. However, here Suárez adds a crucial addition to the CPD formula: he suggests that it

\textsuperscript{17} DA 9.2.6; 3:86.
is hard enough to explain how God can use material objects to act on
spiritual ones, much less how such could happen naturally (naturaliter). Any account, then, in which the spiritual acts on the material
or vice versa runs afoul of the CPD formula because such activity
would be nonnatural. Of course, that does not rule out the possibility
of such action on the part of either the phantasm or the intellect, but
by relegating any such action to the realm of the nonnatural, Suárez
places a severe burden of proof on any account for which such action
is necessary. Moreover, even assuming such action is possible the
fact remains that it is unclear what the process could add to the pro-
cess of cognition. What would a union of agent intellect and phantasm
add to the phantasm? If it does not add anything, then it is a superflu-
ous process; but if it does add something, it must be something spiri-
tual or material, but additions of either sort run afoul of the CPD. If
the agent intellect adds something material to the phantasm, then
there must still be an explanation available about how something ma-
terial can act on something spiritual, and if the agent intellect adds
something spiritual to the phantasm, we still need some story about
how something spiritual inheres in something material.19 In making
these assertions about instrumental causality and the phantasm,
Suárez explicitly appeals to a principle put forth by Thomas Aquinas:
"the secondary instrumental cause does not share in the action of the
superior cause except inasmuch as by something proper to itself it
acts dispositively in relation to the effect of the principal agent."20 Af-
ter appealing to this passage, Suárez adds: "But a material reality by it-
self cannot act on a spiritual reality nor can it have any proper activity
about it."21

Suárez considers one final way to speak of the concurrent caus-
ality of phantasm and agent intellect, namely, that the phantasm ma-
terially (materialiter) concurs in the production of the intelligible

---

18 DA 9.2.7; 3:88: "ita intellectus agens primo unitur phantasmati per
quemdam virtualem contactum, et ita unitum, phantasma ab ipso intellectu
agenti movetur et regitur, et virtutem recipit ad speciem intelligibilem effi-
ciendam." Suárez states that this is the view held by St. Thomas and refers us
to Summa theologiae I, q. 54, a. 4, ad 2 and q. 85, a. 1, ad 3 as support for the
attribution.

19 DA 9.2.8; 3: 88–90.

20 Summa theologiae I, q. 45, a. 5 (Pegis translation).

21 DA 9.2.9; 3:92: "Sed res materialis ex se nihil potest agere circa rem
spiritualem, neque habere actionem propriam circa illam."
species. On this interpretation the phantasm would not act as any kind of efficient cause, not even an instrumental one, but would act as the matter from which the species is brought forth. The agent intellect, thus, would be only the efficient cause of the production of the species. This view, properly understood, provides him with the foundation for his own account of the relation of agent intellect and phantasm, but he must first clear away an improper understanding of this claim. We cannot understand this material concurrence to require that the species be produced from a material power. In a typical instance of the eduction of a form from matter, the form comes to exist in the matter as subject and as it is a material cause. The production of the species cannot be understood in this manner since that would be an assimilation of the immaterial species to the matter of the phantasm and thus would violate the CPD principle. Here Suárez plausibly presupposes that acts of the intellect are immanent ones, that is, they are acts that remain within one power and have no effect outside that power. Unlike a fire warming a nearby piece of wood, the agent and the patient in an immanent action are within the same power. Accordingly, if the phantasm is going to concur materially in the production of the intelligible species, it must do so in a peculiar way: “Therefore, it is said that the phantasm concurs materially because it provides as it were (quasi) the matter (materia) to the agent intellect for the production of intelligible species.”

So, we must construe “material concurrence” in a metaphorical manner: the phantasm provides the content necessary for the construction of the intelligible species but does not play a causal role in that production. The production of the species is a process that takes place wholly within the intellect.

---

22 DA 9.2.10; 3:94: “Dicitur ergo phantasma materialiter concurrere, quasi praebat materiam intellectui agenti ad efficiendas species intelligibles.” For Suárez’s discussion of immanent actions, see DA 3.2.16; 2:100. Here Suárez notes that like any action the act of producing the intelligible species consists of three moments: the action, the passion (passio), and the terminus of the act. The production of the species should not be identified with the act of cognition itself but rather is its own act with its own action (the generation of the species), passion (the reception of the species), and terminus (the species as a quality). For the claim that the intelligible species is a quality, more precisely a quality in the category of disposition, see DA 5.2.23; 2:324–6.
At this point Suárez has provided us with the parameters for his account of our knowledge of the singular. On one side, he is committed to the intramental production of the species, and this eliminates any actual causal concurrence between the intellect and the phantasm, a view that is supported by his adherence to the CPD principle. On the other side, he must provide some role for the phantasm, and his resort to the metaphorical “providing the matter” suggests that the intelligible species produced within the intellect derives its content, in some noncausal way, from the phantasm. These parameters justify his rethinking of the notion of “abstraction” as it refers to the work of the agent intellect. In fact, when Suárez considers three functions commonly assigned to the agent intellect, namely, (a) the illumination of the phantasm, (b) the making of what is potentially intelligible actually intelligible, and (c) the abstraction of the intelligible species from the phantasm, it turns out that all three are misleading descriptions of what he thinks the true function of the agent intellect is.

Again, having recourse to the CPD principle, he argues that there is nothing that the agent intellect does to the phantasm; rather, the work of the agent intellect is restricted to the potential intellect. Now, since the potential intellect needs only one thing from the agent intellect, namely, the intelligible species, the entire work of the agent intellect is best described as simply the production of the intelligible species. To talk about illumination, abstraction, or making what is potentially intelligible actually intelligible is to redscribe misleadingly the simple fact that the agent intellect produces the intelligible species: “The agent intellect as such has no other action than the production of the intelligible species although this act is explained by different names.”23 Consequently, “illumination” is to be understood as nothing more than the fact that what is represented in the phantasm is clear to the intellect through the work of the agent intellect. So too, “abstraction” refers only to the fact that the agent intellect by its own power (virtute sua) makes (efficere) a species representing the same nature that the phantasm represents. Suárez thinks that taking the species to be abstracted from the phantasm as somehow the result of the agent intellect’s doing something to the phantasm would mean

that the species is somehow mixed with the phantasm prior to the work of the agent intellect. Such a result, though, would be a clear violation of the CPD principle. In this way, it is clear that the only difference between the phantasm and the intelligible species is that the former is material and represents materially while the latter is spiritual and represents in a spiritual way. Finally, in describing the change from what is potentially intelligible to what is actually intelligible Suárez again denies that the agent intellect does anything to the phantasm while reaffirming that the phantasm does not actively concur in the process of producing an intelligible species.24

The commitment to CPD requires Suárez to reorient the description of the agent intellect’s work as a process of rendering the content in the phantasm spiritual rather than building into the agent intellect some ability to draw out generalizations from singular experiences. It also ultimately underwrites the denial that the universal is the first object of the intellect. However, we only possess half the story. Suárez still must explain the way in which the phantasm operates as the “matter” for the production of the intelligible species while not concurring actively in its production. This explanation will have to conform to the CPD principle at the same time it provides sufficient justification for rejecting views that invoke some sort of interactionist explanation of that concurrence. What this means basically is that we must see what resources exist for Suárez that can justify his adherence to the CPD principle.

In brief, Suárez holds a view in which the separate powers of the soul, while distinct both from each other as well as the soul, are not shut off completely from each other. We can find the key for explaining the relationship between powers in his description of them as one of “affinity” (sympathia), unified in some way by the fact that the powers are all rooted (radicari) in the same soul. This notion of the soul’s powers being rooted in the same soul has a long history prior to Suárez.25 The idea is that the soul and its powers are really distinct from each other. This can be demonstrated by the fact that God can create the soul while blocking the emergence of specific powers. That being the case, the powers are subsequent to and dependent upon the creation of the soul. Moreover, the powers themselves are each separate from one another. This is most clear in the broad dis-

tinction between sensory powers and intellective powers. If the power of sensation is intrinsically material, then it must be really distinct from an intrinsically immaterial power such as the intellect or will.26 Given this real distinction between the soul and its powers, it is fair to ask how the powers communicate with one another. It turns out that, in fact, they do not communicate among themselves at all. Instead, Suárez argues that the distinct powers are related to one another in some noncausal manner. In other words, there is nothing in the activity of external sensation that causes a phantasm in the internal sense. While Suárez is less explicit than we might like about the relation between the powers, he does claim that the soul is affected somehow by the activities of its various powers and in such a way that individual powers have some sort of access to the activities of at least lower powers. Here is one description of the relation between two really distinct sensory powers, the external sense and the internal sense:

The interior and exterior senses are rooted in the same soul. Hence it is the same soul that sees through vision and imagines through imagination. Therefore, there is this natural harmony (consensio) among these powers since by the very fact that the soul perceives (percepiit) something through vision, it immediately forms a likeness (similitudo) of

25 The most extensive study of the relation between the soul and its powers according to Suárez remains Joseph Ludwig, Das acausal Zusammenwirken (sympathia) der Seelevenvermogen in der Erkenntnislehre des Suárez (Munich: Karl Ludwig Verlag, 1929). Ludwig analyzes passages throughout Suárez’s writings and shows that the “noncausal” view put forth by Suárez has earlier precedents, especially in authors typically classified as “Augustinian.” Leen Spruitt [Species intelligibles: from perception to knowledge (Leiden: E. J. Brill, 1994), 2302] recognizes that in addition to speaking of a kind of sympathy or harmony between the soul’s powers, Suárez also talks of a common “root” that can explain this harmony. Spruitt finds this a melding together of ideas taken from John Peter Olivi (sympathy) and Giles of Rome (rooting of powers in the same soul). The general “Augustinian” tone of Suárez’s thought has been underscored by Nigel Abercrombie, Saint Augustine and French Classical Thought (1938; reprint, New York: Russell and Russell, 1972), 57–90. I have some reservations about using the adjective “Augustinian” to account for Suárez’s commitment to the CPD principle and its consequences. Instead, I would prefer to see his position as the result of working through problems inherent in the medieval appropriation of Aristotle’s De anima, although I cannot here do justice to this claim, nor is it particularly relevant for understanding what Suárez is saying. I do argue that a position much like Suárez’s does arise in a wholly Aristotelian context in my “Zabarella and the Intentionality of Sensation,” forthcoming in Rivista di storia della filosofia.

26 DA 3.1.7; 262–78.
that thing in its imagination—not by means of a power distinct from imagination, but through the power of the imagination itself. In this way, for example, assuming an external sensation, a species results naturally in the internal sense from the activity of the soul itself through the imagination, not from the activity of sensation, although it results because of the thing sensed.  

This passage presents a complex picture although there is a very clear central point: the powers of the soul are strictly independent. It is a small step from that conclusion to the further conclusion that the CPD principle must be the case.

The process described in the above passage suggests that the soul is the major player in the coordination of cognitive processes. The soul, aware of the activity of the sense power, that is, an act of sensation, perceives the sensation. From the soul's perception, in turn, the imagination can form for itself a phantasm of the very same object seen by vision. It can do this because it has its own power to produce a phantasm, although that power is dependent on two prior events: an external sense power's act of sensing and the soul's perception of that sensing. Suárez believes that the same sort of relation holds between the agent intellect and the phantasm in the imagination:

For it must be noted that human imagination (phantasia) and intellect are rooted in the same soul and thus it is that they have an order (ordo) and harmony (consensio) in their operations. Hence, . . . by the very fact that the intellect operates, the imagination also operates. Therefore, in this way I judge that of itself the potential intellect lacks species, but the soul has a spiritual power to produce in the potential intellect species of those things that sense knows. [This happens] not by the sensible imagination concurring efficiently with that action, but by being related as matter or by exciting the soul or indeed (sane) by being an exemplar. And thus it happens that as soon as the soul knows (cognoscit) something through imagination, through its spiritual power it depicts (depingere), as it were, that thing in the potential intellect.  

---

DA 6.2.13; 2:486: “Sensus interior et exterior in eadem anima radicantur, unde eadem est anima quae videt per visum, et per imaginationem imaginationem animatur; est ergo haec naturalis consensio inter has potentias, quod eo ipso quod anima aliquid visu percipit, statim format similitudinem illius rei in imaginatione sua, non mediante potentia ab imaginatione distincta, sed per virtutem eiusdem imaginationis, ita ut posita sensatione extrinsecus, naturaliter resultet species in interiori sensu, non ex activitate sensationis, sed ex activitate ipsius animae per imaginationem, ad praesentiam tamen rei sensatae.”
The parallels between the account of the intellect/phantasm duo and the external/internal sense duo are striking. The agent intellect depicts in the potential intellect, or, in the language used when speaking of the imagination, it “forms a likeness” of the content of the phantasm. It does this by itself, based only on the fact that the soul has perceived the phantasm in the imagination and provides the matter or exemplar by which the agent intellect performs its proper function. It is in this way, and only this way, that the agent intellect is determined, as Suárez makes clear when he contrasts determination in the sense of cause to the kind of determination present in the relation between the soul’s powers:

It is said that in the soul’s powers there is another manner of determination either insofar as one power prepares the matter of another or insofar as the action of one power has a necessary connection to the action of another and it is this sort of determination about which we are speaking. ²⁹

In sum, then, the best account Suárez gives us regarding the relation between the phantasm and the agent intellect is a noncausal one mediated by the soul in which both powers exist in a relation of affinity to each other. In addition, this noncausal determination necessitates that the intelligible species produced by the agent intellect represents the same content as the phantasm, but it does so in some immaterial way insofar as an immaterial power produces it. So far, we have seen that CPD principle provides much of his motivation for the way in which he describes cognition and we have seen what lies behind his commitment to that principle. However, there is more to the story yet.

²⁸ DA 9.2.12; 3:96: “Esta enim advertendum phantasiam et intellectum hominis radicari in una anima; et hinc est quod in suis operibus habent ordinem et consonantiam; unde patebit . . . quod eo ipso quod intellectus operatur, etiam imaginatio operatur. Ad hunc modum arbitror intellectum possibilem de se esse nudum speciebus, habere tamen animam virtutem spirituali ad efficiendas species earum rerum, quas sensus cognoscit, in intellectu possibili, ipsa imaginazione sensibili non concurrente effective ad eam actionem, sed habente se quasi materia, aut per modum excitantis animam, aut sane per modum exemplaris. Et ita fit quod statim ac anima per phantasiam cognoscit aliquid, per virtutem suam spirituali quasi depingit rem illam in intellectu possibili.”

²⁹ DA 9.2.13; 3:98: “Dicitur quod in potentii animae est alius modus determinationis inquantum una potentia praeparat materiam alteri, vel inquantum actio unius potentiae habet necessarium connexionem cum actione alterius; et suismodi haec est de qua loquimur.”
After all, as we have just seen, the external and internal senses too are noncausally related and the imagination requires the soul's prior awareness of the external sense's experience as an exemplar and determining feature. Clearly, though, both external and internal sense powers are material in that their species are extended and divisible. Why, then, do we need the complicated noncausal account for their relation?

Here an important feature of Suárez's general account of cognitive activity is relevant since he states: "A cognitive act cannot produce another quality distinct from itself." As it stands, this claim is a bit opaque, but that he holds it should not surprise us at this point. It does mean, though, that there are two receptions as well as two acts in any complete act of cognition. The two acts consist of the production of a species and the resultant act of cognition. The two receptions consist of the reception of both the species and the act itself. Another way of saying the same thing is that there are two species, the impressed species produced by some active agent (for example, the sensible object itself or the agent intellect) and the expressed species, the result of the act of cognition. The expressed species must be different from the act itself since it remains available to us in memory long after the act is finished. This expressed species, as the product of the cognitive power's act, is received in the same power that produces it. As a result, we can attribute to Suárez another principle stronger than the CPD principle: there is no direct communication of cognitive acts or their products. This Principle of Noncommunication, or NC for short, implies that each cognitive power that produces its own act is separate from every other. Any communication between them is done by the mediation of the soul itself and as a result is noncausal. The primary factor, then, that drives Suárez to hold such an extreme view concerning the modularity of powers finds its justification in the very analysis of the cognitive act itself.

A real tension rises in his account with this rather forceful modularity claim. We saw above that one reason for positing the agent intellect is that the intellect is a tabula rasa and needs to be informed by sensory experience. However, Suárez has now widened the gap between sense and intellect to such an extent that the noncommuni-

---

30 *DA* 6.2.13; 2:486: "Quia actio cognoscitiva non est productiva alterius qualitatis distinctae a se."
cation between powers might be thought to jeopardize any possible sensory foundation for our intellectual knowledge. Indeed, it appears as if the intrapower cognitive process that he sets forth requires a kind of innateness—an innateness that he explicitly rejects in using the metaphor of the *tabula rasa*. We are in very deep waters here, and I do not want to stray too far from our central issue. Suffice it to say that there is indeed a sense in which Suárez accepts the innateness of intelligible species:

The angelic intellect has from its nature innate species of all realities that, as it were, flow from the proper power of the intellect as (*quasi*) passions flow from an essence. However, the sensitive power, especially (*maxime*) the external senses, lack species and receive them from outside objects. Now our intellect also by its nature lacks species—in which it also falls short of the perfection of an angelic intellect—nevertheless it has a certain agreement with it, namely, that as soon as our soul knows some reality through the phantasy a species representing that reality flows (*dimanere*) from the intellect itself. So, this agency is more in the manner of a certain emanation of the species from the intellect, and thus that agency is not a distinct power.\(^{31}\)

This passage shows the practical commitment Suárez has toward both the CPD and NC principles, principles so central to his thought that he is willing to accept this kind of innateness within the intellect. Of course, just because the species are somehow present in the intellect before experience, we cannot simply conclude that they can be used actually and at any time by the intellect. The imagination along with its phantasm is required for an intelligible species to be produced. Nonetheless, I think it is safe to say that Suárez’s rejection of a Thomistic account of the work of the agent intellect is not a mere

\(^{31}\) *DA* 9.8.18; 3:234–6: “Angelicus enim intellectus ex natura sua habet in-ditas species omnium rerum, quae quasi dimanant a virtute propria intellec-tus, quasi passiones ab essentia; potentia autem sensitiva, maxime exteriores et speciebus carent et illas ab extrinsecis objectis recipiunt; intellectus autem noster et ex natura sua speciebus caret—in quo et a perfectione angeli declinat—, habet tamen convenientiam aliquam cum illo, scilicet quod statim ac anima nostra cognoscit per phantasiam rem aliquam, dimanat ab ipso intellectu species representa-tans rem illam. Unde haec efficientia potius est per modum cuisdam emanationis speciei ab intellectu, et ita non est potentia distincta illa efficientia.” Spruitt (*Species intelligibiles* 2:304) rejects any innatism in Suárez, yet he does so only by reading the just cited passage as exclusively about angelic cognition. Ludwig (*Das akausale Zusammenwirken*, 56–7), however, does note that this passage refers to the human intellect. For more discussion on the question of innatism in Suárez’s account of cognition, see my “Suárez on Imagination,” *Vivarium* 39 (2001): 152–6.
superficial attempt to try to appropriate Thomas’s view within some nominalistic perspective. Rather, Suárez says what he does because of a strong commitment to a view of the soul and its powers such that the only work that can be done by the agent intellect is the dematerializing of the phantasm.

One final issue arises in connection with the NC principle insofar as he must reconsider the relation between the agent intellect and potential intellect. This will have important consequences for the account of knowledge of the universal. Moreover, if the agent and potential intellects are distinct, he will have to show how the NC principle is compatible with that diversity. He considers two equally plausible accounts. The first reminds us that the agent intellect itself is not responsible for any act of cognition. In fact, it turns out that the agent intellect stands in the same relation to the cognitive power as the external sensible object stands in relation to the external senses. Thus, its product, the intelligible species, is not the product of a cognitive act, and the NC principle is not, strictly speaking, violated. However, it is equally probable that there is no distinction at all, except in name, between the agent and potential intellects, that is, one power can be both active concerning species as well as operative through them. After all, the potential intellect can combine species it has previously received to create new ones when it imagines a gold mountain. So too, as Suárez points out, “if it [a cognitive power] has an active power about some species, it can have an active power about all species.” Without worrying about settling this dispute between equally probable views, for now we need to recognize that it is the noncognitive status of the agent intellect that is of paramount concern here. Accordingly, any real knowledge of singulars or universals will be the work of the potential intellect.

I have dwelt on the issue of the production of singular knowledge because I think that the complexity of the account Suárez presents is substantial prima facie evidence that his privileging the knowledge of

---

32 DA 9.8.2; 3:212.

33 DA 9.8.18; 3:234: “si habet virtutem activam aliquarum specierum, potest habere omnium.” In the same place, Suárez also argues that if the two intellects were distinct, the agent intellect would have nothing to do in the afterlife and hence we would have a useless separate power. That fact suggests to him that the agent intellect cannot be a separate power. For our knowledge after death and the fact that new species of singulars are infused by God, see DA 14.4.5; 3:476–8; DA 14.5.4; 3:506–8.
the singular is not postulated capriciously, nor is it an instance of disagreement with St. Thomas simply for the sake of disagreeing. Instead, it flows consistently from a set of views about the human soul, its powers, and its operations. However, we are still not in a position to see the big picture. We need to add both a metaphysical discussion about the nature of the singular objects that provide us with the basic building blocks of our knowledge as well as an account of the way that we know universals from our knowledge of singulars. I turn now to a brief presentation of the nature of singular items in the world and follow that with a description of how it is that the intellect produces universal concepts that can be predicated of many.

II

Some Ontological Commitments. Suárez’s teaching on the nature of material singulars and the principle of individuation is well known. The core claim that he makes can be summed up in his assertion that every real entity is indivisible and incommunicable. It follows that every real entity is radically singular. Suárez qualifies this claim by restricting its scope to include only those things that can exist immediately (immediate). On this view, the fact of commonality, the common natures (communes rationes) existing in things, is dependent on singularity since if the singulars were taken away, then the common natures would not continue to exist.34 Note that he does not deny the existence of commonality but does restrict it to a kind of mediate existence parasitic on the prior existence of incommunicable individuality. This is an important qualification since it means that he accepts that there is commonality in things. If he did not accept commonality in things, he would not need a principle of individuation, yet

he spends much time developing an account of a principle of individuation, a principle he identifies with the entity (entitas), or being, of a singular substance.\textsuperscript{35}

This focus on entity as the hallmark of individuation leads Suárez to conclude, in the case of composite singular substances (those composed of matter and form), that the form, and not the matter, plays the primary individuating role. After all, a mere change in matter does not render something numerically different as long as the same form is present.\textsuperscript{36} In brief, then, the form imparts individuality to a composite being, and that being's immediate existence is primary in the sense that it is incommunicable and indivisible. Thus, while Suárez situates his discussion in terms of what is added to a common nature to make it individual, it is clear that this way of phrasing the question is misleading. The issue might better be phrased by asking how commonality can exist in something singular in itself. A corollary problem involves understanding how our intellect can know such universality if what we properly and distinctly know is the singular as such. Making this issue pressing is the fact that the basis for our universal knowledge is parasitic commonality, while at the same time Suárez is insistent that the commonality is not really distinct from the singular principle individuating composite entities. In other words, as the common nature exists, it is indivisible.\textsuperscript{37} As far as Suárez is concerned, there are only two possibilities here: something is common and hence communicable, or singular and incommunicable. So, even the common nature, as it exists, is not common. It follows that while Suárez admits that there is a common nature, it is only distinct from the individuating principle through the work of reason, or, to put it another way, it is merely conceptually distinct. The problem for Suárez is to show how an incommunicable common nature can provide an objective basis for a universal concept. If our knowledge of the common nature is a work of reason, how do we know that it is not a purely (or even partly) mental construct, and hence ultimately subjective? He explicitly rejects this possibility by pointing to the difference that can be found between distinguishing something conceptually and

\textsuperscript{35} DM 5.6.1; 25:180a.
\textsuperscript{36} DM 5.6.16; 25:187a.
\textsuperscript{37} DM 5.2.8; 25:150a.
saying that that something is a mere being of reason or some fictional being. The conclusion he draws is that there is one being possessing both natures, the common and the individual, without its unity being somehow compromised. This conclusion demonstrates the importance of having a clear understanding of what the work of the intellect consists in when we talk about distinguishing something conceptually and not just fictionally. A consideration of how Suárez accounts for our knowledge of the universal will provide us with that understanding.

III

Knowledge of the Universal. From Suárez’s discussion of the knowledge of the singular, it should be clear that the direct knowledge of the singular is the first and proper object of the intellect. This intellectual knowledge of the singular, the joint result of the impressed species and the action of the potential intellect, must provide us with the basis for our knowledge of the universal. Consequently, the knowledge we have of a singular, its concept or expressed species, is primary in the generation of all subsequent knowledge including our knowledge of universality. It may be thought that Suárez has painted himself into a corner here. After all, it is not obvious how we can get intellectual knowledge of universals from knowledge of mere particulars without jeopardizing the objectivity of our knowledge. On the standard Thomistic account, the agent intellect renders the singular content in the phantasm suitable for the potential intellect by producing a universal representative species. Suárez, though, having restricted the role of the agent intellect to the process of dematerializing the content of the phantasm, commits himself to the position that the product of the agent intellect represents only the exact same singular

38 DM 5.2.16; 25:153b.
content that is present and represented in the phantasm.40 In this way, it looks as if the work of the intellect is the only source for universal knowledge, and it is unclear how we can be sure that the intellect does not construct a universal that has no connection with reality, that is, one that is simply a fiction.

Before looking at Suárez’s answer to this problem in some detail, I want to make two preliminary comments. First, it cannot be denied that we see in Suárez a tendency to play up the role of the intellect in the production of knowledge. This is clear if we consider the role played by the internal senses. Thomas Aquinas provides a complex set of internal sense powers that somehow prepare the phantasm and make it fit for the abductive work of the agent intellect.41 Suárez, on the other hand, reduces the internal sense powers to one power and uses the imagination as little more than a source for constructing the phantasm.42 His reasons for this elimination of the preparatory functions of the inner senses are complex. One reason is surely his commitment to the NC principle. The external senses cannot communicate their activities to the internal sense directly but must rely on the same sort of indirect communication via the soul itself as the phantasm and agent intellect require. The agent intellect, then, works on a

40 While we saw above the psychological reason for stating that the intelligible species is simply a dematerialized representation of the same content present in the phantasm, we are now in a position to see the metaphysical side of this view. Because the principle of individuation is intrinsic to form, according to Suárez, dematerialization does not lead automatically to a universal representation as it does in St. Thomas’s view in which the principle of individuation is extrinsic to form. For helpful remarks on this point, see Ross, “Introduction,” 24.


42 For Suárez’s account of the internal sense power, see DA 8.1–2, 3:14–61. For brief discussions, see Alejandro, La gnoseología del Doctor Eximio, 227–9; Salvador Cubells, Die Anthropologie des Suárez (Munich: Verlag Karl Alber, 1962), 137–45. For a more detailed discussion, see my “Suárez on Imagination.”
simple sensitive representation that has not been prepared for intellectual abstraction by the internal sense. Second, it seems to me that it comes down to an issue of where one wants the intellect to be most like a kind of “black box” in its activity, that is, where explanation of processes stop and acceptance of baseline fact begins. For Thomas, the most mysterious aspect of intellectual cognition arises at the juncture where the agent intellect illuminates the phantasm and abstracts an intelligible species representative of the common nature present in the singular phantasm. A quick perusal of secondary literature on this process is sufficient to show that Aquinas’s thought is not easy to pin down on this point. For Suárez, though, the mystery lies in how the intellect can abstract universal content from an intelligible species representing a singular. We have seen that it is facile to simply state that there is no common, communicable content in the singular intelligible species, although it is clear that the potential intellect is going to have to work to extract that content. However, the striking difference between St. Thomas and Suárez is most visible in the fact that on Suárez’s view the work the potential intellect performs is structurally analogous to the work of the agent intellect in the production of the intelligible species as St. Thomas explains it. I now turn to a discussion of the story Suárez tells concerning the abstraction of universal content.

First, however, it is interesting to note that there might have been a way out for Suárez while keeping the directness of singular knowledge through a species representative of the singular. The possibility I have in mind is one in which he would posit a twofold abstraction by the agent intellect, one resulting in species representative of the singular and one representative of the universal. If there were two species produced by the agent intellect, Suárez could reject both “reflection” accounts of knowledge of the singular and also show rather transparently the basis for universality in the singular items of the world. By positing such a dual abstraction, Suárez could avoid the problematic position that the same species could represent both a singular and a universal. After all, if we are thinking of the universal, we cannot thereby be thinking of the individual and vice versa. Nonetheless, he explicitly rejects this option by pointing to human experience and noting that we cannot think about “this man” without thereby conceiving “man.” Continuing the discussion he adds a crucial component to the overall argument we are about to develop:
If the agent intellect produced two species—one representing “human” and one representing “Peter,”—it also would produce other distinct pairs: one of “human” and another of “animal” and of all superior genera. For the distinction between genus and species is as great as that between individual and species. The conclusion, though, is false because it multiplies species without necessity. For, since the inferior [reality] contains all superior [realities], the species representing the inferior is a sufficient principle for knowing all superior predicates.43

Suárez appeals here to a principle that states that all broader genera are contained within the singular species. Let us call this the Containment Principle (CP). It follows that the singular species by which I know Peter is sufficient to allow me to know all the common natures applicable to Peter. How can this be possible? Suárez explains:

The intellect when it knows (cognoscens) a singular through a proper species understands (intelligit) different singulars—even of the same type—through different species inasmuch as they were abstracted from different phantasms. Now, these species of different singulars agree partly in representation when they represent the same common predicates, but differ partly because they represent them contracted in a different manner. Therefore the intellect has the power (virtus) to consider the individuals themselves such as they are and also to consider that which appears to be common to these individuals. That latter is to consider the universal. In the same way, it knows (cognoscit) genera through the agreement of species and thus it knows all other superior genera.44

Accordingly, the intellect discovers universals by a process of comparing similar singulars previously known and advances to knowledge of higher level genera by comparing lower species. The containment principle, on first reading, suggests no more than the fact that comparison between species produces knowledge of a common genus

43 DA 9.3.13; 3:124: “Nam si efficit intellectus agens duas species: aliam repraesentantem hominem, aliam Petrus, etiam efficiet alias duas distinctas; aliam hominis et aliam anaimlis et omnium generum superiorum, nam tanta et maior est distinctio generis et speciei quanta speciei et individui.”

44 DA 9.3.13; 3:126–8: “Quia intellectus, cognosce singulare per propriam speciem, diversa singularia, etiam eiusdem speciei, per diversas species intelligit, nam fuerunt abstractae a diversis phantasmatis; istae autem species diversorum singulorum partim in repraesentatione conveniunt, dum eadem praedicata communia repraesentent; partim differunt, quia repraesentant illa diversimode contracta; intellectus ergo habet virtutem ad consideranda individua ipsa, ut talia sunt, et ad considerandum etiam id quod videntur illis individuis esse commune; et hoc est considerare universale; et eodem modo cognoscit genera per convenientiam specierum; et sic de aliis superioribus.”
while the knowledge of species rests on a comparison of singular intelligible species of the same type. The argument as stated thus appears to beg the question: the singular intelligible species we are comparing would need to be recognized as similar due to a prior knowledge of the species or genera. In other words, how could we know to compare those singulars in order to reach higher genera and species unless we already know, through some genus or higher species, that the singulars are similar in some respect? Otherwise, we would be in the same situation where we started: there is no way to know what sort of contribution the mind is making to our knowledge of universals. It follows that the major issue raised by this claim involves whether we can advance to knowledge of the universal from knowledge of one singular alone. I shall call the first option, by which universals arise through comparison of singulars, the “comparison model” and the latter option, by which universals arise through knowledge of one singular, the “abstraction model.”

In support of the abstraction model, there is an important passage where Suárez asks whether a species representing the universal remains in the intellect after the universal has been thought. He points out that there are two potential answers to this question: (1) there is no need for such a universal, therefore there is no reason to posit one and (2) a universal species is useful for quick recall of knowledge of universals. He concludes:

Both [views] are probable. For on the one hand it seems there is no need to posit such a species [one representing a universal] since the species of any singular suffices. On the other hand, one can point to its utility and necessity, namely, that the intellect might conceive easily and promptly its [the species’s] proper quiddity, genus and difference without any dependence on a singular reality.45

Accordingly, Suárez holds as probable that one singular (“the species of any singular”) can lead to the intellect’s conceiving of a universal. Other passages, though, point in the direction that comparison among singulars is the only basis for universal knowledge. Indeed, the position is even a bit more complicated than it appears from this way of

45 DA 9.3.14; 3:128: “Utrumque probabile est, nam ex una parte videtur nullum esse necessitatem ponendi tales species, cum species cuiuscumque singularis sufficit; ex alia autem parte, potest assignari utilitas et necessitas, nempe ut intellectus possit facile et prompte, absque dependentia a re singulari, propriae eius quidditatem, genus et differentiam concipere.”
formulating the issue. “Abstraction,” it turns out, has two different meanings in the context of discussions of human knowledge. As a result, talk of an abstraction model is a bit imprecise. As we have seen, the first cognitive process, both logically and temporally, is the abstraction of the intelligible species by the agent intellect. This abstraction in no way contributes to the formation of the universal concept since it is merely a dematerializing of the content present in the imagination. The intelligible species as such, then, is singular in representation. In addition, Suárez recognizes a second sort of abstraction, one that properly concerns the universal. This latter abstraction is the work of the potential intellect, not the agent intellect. The abstraction model is limited to the way in which the potential intellect might abstract a universal from a previously acquired knowledge of the singular. Adding an additional layer of complexity to an already baroque process, it turns out that Suárez describes this abstractive process of the potential intellect in two ways: formal abstraction and universal abstraction. Consequently, we must be clear on which is relevant to the abstraction model he considers.

A formal abstraction, as its name implies, is the operation of the potential intellect whereby we can consider the proper nature or essence of a thing apart from all else that belongs to it. It is the way we conceive, for example, the essence of a thing apart from its properties, or the way that we consider a genus apart from its difference. The most obvious way to think of this sort of knowledge is to think of it as nonrelational or absolute. It seems to fall midway between knowledge of the singular and knowledge of the universal. Suárez adds that such knowledge presupposes (supponit) a distinction between the abstracted and that from which it is abstracted, and he adds that the abstraction “properly does not cause this distinction, but conceives it.”\(^{46}\) By contrast, a universal abstraction takes places when we abstract as such (ut sic) a superior feature from an inferior feature. This “as such” abstraction adds an important note to his discussion. After all, we can consider formally a superior apart from an inferior without, Suárez thinks, achieving a proper notion of universality. In other words, I can consider “mammal” apart from “animal” without

\(^{46}\) DA 9.3.18; 3:138: “Et haec formalis abstractio distinctionem aliquam supponit inter rem abstractam et illam a qua abstrahitur; unde non proprie causat illam, sed concipit.”
thereby considering a universal since we would only be considering the essence. Indeed, anytime we think about the proper nature of an item, we are considering it merely from a formal perspective so that we know what its essence is, but we do not yet know it as something that can be predicated of multiple items. Universal abstraction, the “as such” abstraction, adds its distinctive note to the cognitive issue in that it reaches universality, not proper nature. The universal is hidden and confused in the singular, and universal abstraction involves conceiving the essence as universal, that is, bringing it to light and making it clear. This metaphor of “confused” knowledge points in the same direction as the earlier talk of containment. The notion that superior genera are contained somehow in inferior singulars leads us to think that they are not as such accessible to us in our initial acts of understanding but rather must result from some sort of subsequent process.

Of course, merely differentiating types of abstraction does not answer the question whose answer we are seeking, but it does serve to situate the discussion. Most interestingly, the distinction between formal and universal abstraction points to an important element of Suárez’s account: we can think of essences without thinking of universals. The distinctive note that universality adds is communicability. For the purposes of describing proper universal knowledge, then, we can set aside the abstractive process of the agent intellect and the formal abstraction of the potential intellect and simply focus on the process of universal abstraction by trying to unpack the metaphors Suárez uses. The primary question—whether one singular species be sufficient for the knowledge of the universal—remains, but we know now which intellective process will be relevant for answering the question. At the same time, we cannot forget that the nature of formal abstraction remains unresolved. For now, it is sufficient to recognize that formal abstraction does not rise to the level of universality properly speaking.

So far we have been concerned with the psychological processes accounting for knowledge of the universal. The correlative issue now facing us is one that involves the structure of reality. If there is universality in the world, then the process by which the intellect knows will be more akin to discovery rather than construction. As we saw above, though, there does not seem to be a place for any universality, strictly

\footnote{DA 9.3.18; 3:138.}
speaking, in Suárez’s world, although he did argue that there were individual common natures. As a result, it might appear that any abstraction is, in fact, a kind of creation of universality where none exists actually. However, complicating this picture is the fact that Suárez somewhat confusingly distinguishes three types of universality: physical universality, metaphysical universality, and logical universality. I say “confusingly” here because he has clearly restricted the notion of “universal” to a result of intellectual cognition. So in using the term “universality” here, Suárez must mean something rather more like “basis for commonality.” It turns out that each of these types of universality is known through a different cognitive process. Before specifying the three processes, though, it will prove helpful to have some basic definitions for each of the three types of universality.

The physical universal is what we can call the universal in the entity (ex parte rei), and “physical” is a fitting term because the entity is a subject for motion as well as accidents, and these are the primary concerns of natural philosophy. The universal in the thing, then, is its essence. We saw above that Suárez believes that this essence is both singular and common. The metaphysical universal refers to the way in which the nature of something can be represented as common and indifferent to many. The important differentiating feature of the metaphysical universal is that its status is somehow conferred on it by the intellect through extrinsic denomination. What does this mean? In brief, it means that since the universality is conferred on it, the universality is not properly a part of the entity.48 So, for example, in saying that humanity is present in the nature of Peter, we are saying only that the term “humanity” is predicable of Peter in the same way that being a spouse applies to me. It is not an intrinsic property of me but only an extrinsic one. Of course, such extrinsic attributions are no less objective for their being extrinsic, so objectivity is not the issue here but only whether the objectivity of metaphysical universality is an intrinsic or an extrinsic feature of any singular. Finally, the logical universal consists of the universality of the relation between the metaphysical universal and the nature itself of the thing. It is the result of what Suárez calls an “application” of the metaphysical universal to the

nature as if the universal actually existed in the thing. While Suárez admits that the terminology here is not necessarily precise and is subject to various qualifications, the threefold division of the universal does serve a useful function in clarifying what the cognitive process might either discover or create. Given that the issue at hand concerns whether these universals arise by abstraction or by some comparative process, we might expect that all three of these universals are the result of some cognitive process. Suárez, though, is unwilling to go so far as to say that the physical universal is a product of the intellect. Moreover, as I mentioned just above, it is not really a universal at all. By calling it a universal, Suárez is only pointing to the role that entities in the world play in the process of conceiving universals. It provides the basis for the work of the intellect but is independent of that work. By contrast, the intellect does produce the metaphysical and logical universals, the former by abstraction and the latter by comparison. Yet both of these latter universals are not intrinsic properties of things but rather objective properties we can attribute to those things thanks to the abstractive and comparative work of the intellect. We can see the results so far in the following chart:

<table>
<thead>
<tr>
<th>Activity of the Intellect</th>
<th>Result of Activity</th>
<th>Corresponding Universal</th>
</tr>
</thead>
<tbody>
<tr>
<td>abstraction of the agent intellect</td>
<td>singular intelligible species</td>
<td>physical universal</td>
</tr>
<tr>
<td>abstraction of the potential intellect</td>
<td>nature of the material singular</td>
<td>metaphysical universal</td>
</tr>
<tr>
<td>comparison of the potential intellect</td>
<td>universal concept</td>
<td>logical universal</td>
</tr>
</tbody>
</table>

At this point, we might be forgiven for thinking that Suárez is trying to reconcile too many problems at one time. To say that the metaphysical universal is found in a process of abstraction while the logical universal is the result of a comparative process borders on the incomprehensible. After all, the issue before us is how the potential intellect produces a knowledge of the universal from the information

49 DA 9.3.22; 3:142.
provided by the agent intellect and the act of knowing singulars. There would be little reason to talk of a comparative process if some sort of abstractive process does the real work. In trying to make sense of his position, though, we must consider exactly how he understands the notions of “abstraction” and “comparison.” Abstraction, for him, is to be understood as nothing more than the physical nature having some mode of existence—what he calls a universality—that it does not have in the thing itself. He states:

If the opinion of Plato about ideas were true and the idea of man was something abstract from individuals subsisting in things, without a doubt it would have another mode of existence than it has now. Therefore, when it is conceived in that manner, namely, as if it were abstract, the nature represented and conceived as such has a mode of universality that it does not have in things. And this is confirmed because the nature thus conceived is objectively one and prescinds from every inferior multitude and is common to many. Thus it is then universal in another way than it is in things.51

So “abstraction” for Suárez is shorthand for a different mode of existence, a mode that has commonality and indifference to singulars as its distinguishing feature. In other words, while our knowledge of a universal may be abstract, that does not really tell us anything about the process by which the abstract universal, or the metaphysical universal, comes to be. Much the same consideration can be brought to bear on the issue of comparison:

If that first opinion [that the universal is the result of an abstractive process] understands a second intention of a relation of universality to arise through an abstraction, it is without doubt false, for it arises through comparison and in this case the second opinion [that the universal is the result of some comparative process] is most true. To deny this fact is to ignore the difference between a real relation and a relation of reason. For if an abstraction has been made, the abstraction immediately relates (referitur) to inferiors and relates to them really (realiter).52

51 DA 9.3.29; 3:148–50: “Nam si vera esset opinio Platonis de ideis et idea hominis esset in rebus subsistens abstracta ab individuis, procul dubio alium modum universalitatis haberet quem nunc habet; ergo etiam quando concipitur illo modo, scilicet ac si esset abstracta, natura ut sic repraesentata et concepta habet modum universalitatis quem non habet in rebus. Et confirmatur, nam illa natura sic concepta est una objective et praecludit ab omni inferiori multitudine et est communis multis; ergo est tunc universalis alio modo quam in rebus.”
I do not think we could ask for a more unequivocal statement from Suárez. What is abstracted has a real relation to that which falls under it. Such is not the case with relations of reason alone, and he has identified the universal as a mere relation of reason. Those real relations proper to abstraction hold prior to any thought, and if we subsequently reflect on them and thereby generate a logical universal, that in no way compromises the antecedent objectivity of the relations present in the abstraction. But what kind of abstraction are we talking about here? It is clear that Suárez is referring to metaphysical universality as the result of abstraction, that is, the nature as common and indifferent but not yet universal in the proper sense. Here it will be helpful to look at a parallel text from the *Metaphysical Disputations* where Suárez clarifies the extension of metaphysical and logical universals. The metaphysical universal, or absolute universal as he calls it in this passage, is known in pure isolation from everything inferior to it. The example he uses is the way in which we can abstract the common nature “man” from a consideration of Peter by ignoring any individual properties. Again, he refers to Plato and views the absolute universal as equivalent to a platonic essence were it to exist. Of course, this absolute universal does exist in the intellect conceiving it but not in the thing itself. Just as the platonic essence, were it to exist, would exist as an actual universal entity, so too the absolute or metaphysical universal exists in the mind. The logical universal, or, as he calls it here the relational universal (*universale respectivus*), is the result of comparing singulars. Thus, from knowing Peter and knowing Paul, one knows them to be similar in respect to human nature. In other words, we first notice through this comparison that Peter and Paul are similar as men, and we subsequently notice that the predicate “man” is related to both as something common to particulars.\(^{53}\)

So, in answer to the question concerning whether the universal can be known from one instance or requires multiple instances, Suárez really wants to have it both ways. The universal as

---

\(^{52}\) *DA* 9.3.30; 3:150: “Si illa prima opinio intelligat secundam intentionem seu relationem universalitatis fieri per abstractionem, sine dubio est falsa, nam sit per comparationem; et in hoc verissimum ait secunda opinio; et hoc negare est ignorare differentiam inter relationem realm et rationis, Nam si facta abstractione, statim natura abstracta refertur ad inferiora, certe refertur realiter.”

\(^{53}\) *DM* 6.6.11–2; 25:228b.
metaphysical or considered absolutely can arise from one instance alone, yet in that process we are only reaching metaphysical universality, a universality that is both objective and extrinsic. This metaphysical universality is based on the physical universal, that is, the individual common nature present in each individual. However, while that absolute knowledge of the essence is known through abstraction, it has not yet reached what we might call full universality. Full universality requires the comparison of multiple singul ars. It is the recognition that the same nature is ascribable to more than one singular. We find ourselves back, then, at the distinction between formal and universal abstraction. Formal abstraction takes us part way along the path to the universal in that we discover the metaphysical universal. That universal is objectively ascribable to the singular, without being an intrinsic property of the thing, and it permits us to know that there are multiple levels of description appropriate to any individual. So, for instance, we can describe a horse as a horse, as an animal, as a mammal, and as an animate being and each of those ascriptions is “contained” within the knowledge we have of a single horse. However, the terms that we use to describe that horse are the result of a process of comparison. As a result, the process of knowing universals is a kind of dialectical one. We must first, within any given individual, recognize that there are different sorts of precision that we can apply to it; but to have labels for those different levels, we must form logical universals that we can fit into the various levels as appropriate. The universal most properly speaking, the logical universal, does not designate a real relation among things, not even an extrinsic one, but refers only to the way in which natures can be compared and ascribed to multiple individuals. Nonetheless, while the relation described by the logical universal is not real, it is still objective inasmuch as it has a basis in the objective metaphysical universal that two items of the same type possess, even though they do not possess them in common. At this point we must remember the point made by Suárez when talking about the common nature as both individual and common. There he stated that we needed to distinguish between knowing something by a conceptual distinction and knowing something as a mere being of reason. Applying this to the discussion of types of universals, the metaphysical universal is conceptually distinct from the individual while the logical universal is a mere being of reason. A universal such as “horse” does not really exist except as a mental construct resulting
from the comparison of the metaphysical universals of different horses. So too, the metaphysical universal abstracted by the potential intellect does not exist in the horse itself, although the nature of the horse is such that the metaphysical universal can be extrinsically denominated of it.

In sum, there is a clear realism present in Suárez’s account of universals insofar as he is willing to speak of a universal in the singular entity itself, the physical universal. While that physical universal does not exist in the thing as a universal, it nonetheless specifies the nature of the singular in such a way that the nature of Peter and the nature of Paul are in some way the same. How is this possible? Suárez takes it to be a simple brute fact about natures. The very nature of Peter contains features that make applicable the more generic ascriptions of human, animal, being, and the like. Without positing any intrinsic universality in things, Suárez nonetheless allows that in any individual’s essence there is a nonrepugnance (non repugnantia) to being instantiated in a multiplicity of individuals.54 Thus, it is not intrinsic to Peter’s essence that it is incommunicable in principle, even though as it exists in fact it is incommunicable. Our minds are such that from our prior knowledge of Peter we can unpack abstractively the successive levels of generality present in Peter’s nature. It must be stressed that at no point does this generality actually exist as general in Peter, but Peter is a rational animal and in knowing the nature of Peter we know, by precision, his animality, rationality, and so forth, although we know these via extrinsic denomination. The extrinsic denomination, here, must be something like the way that we recognize that Peter is an animal because we can talk about his essence, which is itself in every way singular, by using a term that is nonrepugnant to his essence.

To understand fully the move that Suárez is making here, we must recognize that the notion of abstraction is potentially misleading in an important way. We might be tempted, for example, to think that the process by which the potential intellect abstracts the metaphysical universal is a kind of nondiscursive or automatic process. However, nothing Suárez states commits him to such a view and, in fact, he suggests that abstraction is discursive. So, for example, when he considers the way in which we know the singular essences of things, he argues that we first know the accidents of the essence prior to knowing

54 DM 6.5.3; 25:223a.
the essence itself. Those accidents, that is, the sensible and common accidents of a thing (its color, texture, shape, and size, for example) do not automatically lead us to the essence. Rather, it is by a process of discursive reasoning that we come to understand even individual substances.\textsuperscript{55} Hence, when he claims that the metaphysical universal arises by a process of abstraction, he does not mean that it is immediately known. Indeed, it is hard to see how it could be so known, given the need for extrinsic denomination as a prerequisite for such knowledge. In other words, ordinarily we must have some prior notion of animal in order to know that the abstraction we perform in considering Peter’s essence with precision is one that leads us to say that Peter is a rational animal. The consequent recognition that Peter’s animality is similar to Paul’s is coincident with recognizing that animality can be instantiated in multiple entities. It is then that we have full-blown universal knowledge, but this knowledge is based on our prior individual abstractions of the animality that can be attributed to both Peter and Paul.

IV

Conclusion. I have tried to show in this paper that Suárez has a coherent, if complex, theory of the way in which we come to know universals. That theory is grounded in views on the nature of the soul and its powers, the nature of individual items in the world, and epistemological considerations concerning the priority of singular over universal knowledge. One cannot understand Suárez’s epistemological views without recognizing how it is that his analysis of the soul, coupled with an account of the metaphysics of singular items, requires him to posit the priority of singular knowledge. In short, the motivation to privilege knowledge of the singular is not capricious, and his rejection of accounts of singular knowledge that require “reflection” is grounded in his attempt to overcome what he sees as deep problems with such accounts. Nonetheless, although Suárez privileges knowledge of the singular, I have tried to show that one must take Suárez’s statements about the objectivity of universal knowledge seriously. Given the constraints under which we must derive such knowl-

\textsuperscript{55}DA 9.4.6; 3:160.
edge, his working out of the relationship among the different kinds of universality makes good sense. The distinction between metaphysical and logical universals, an apparently superfluous distinction when first introduced, becomes important because only through it can he guarantee a real, albeit extrinsic, relation between the universal and the singular. Finally, the overarching issue, the idea that one must start with singular knowledge and proceed to universal knowledge while at the same time needing universal knowledge in order to identify and classify singulars, is neatly solved by the assertion that the metaphysical and logical universal differ. Based on the experience of only one object, the potential intellect can abstract the metaphysical universal and know the nature of the object. However, that metaphysical universal is not properly universal in the sense of its being predicable of many. To produce a universal predicable of many, the logical universal, the comparison of similar metaphysical universals is necessary. The logical universal, based ultimately on the individual but similar forms of singular items, has the abstraction of the metaphysical universal as a mediate basis, while the metaphysical universal is dependent on objective, although extrinsic, relations of similarity between singulars.56

Marquette University

56 I would like to thank the Marquette University Department of Philosophy for granting me a reduced course load in the fall 2000 semester that provided additional research time to work on this paper. I also want to thank Prof. Edward P. Mahoney for his advice and encouragement over many years.