**THE PLACE OF SCHOLASTIC REALISM IN PEIRCE’S PRAGMATIST PHILOSOPHY**

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Thesis submitted for the degree of Doctor of Philosophy

at the Department of Philosophy, The University of Sheffield

Sheffield, United Kingdom

May 2014

**Abstract**

The aim of the thesis is to answer a question of how Charles Sanders Peirce found unity for his pragmatist philosophy by formulating his Scholastic Realism. I propose this doctrine as a reading guide and leading principle of his different stages as a philosopher. I want to understand why Peirce’s realist doctrine was for him a feasible and consistent account for the problem of universals. I provide an answer as why the problem of universals, in Peirce’s mind, pervades the history of philosophy. A derived question analysed is: why Peirce required us to conceive philosophy as a struggle between nominalism and realism? I offer to follow the tread of argumentation that leads to recognise that Peirce’s Scholastic Realism is of a particular and fundamental importance to understand his philosophy and the problems involved in his continued inquiry. Yet more importantly, I will argue that my reading is a novel, feasible and plausible account of reality. Peirce’s scholarship has not considered such interpretation in its full insightful nature for reasons that are not necessarily philosophical. I argue that we might get good use of it if we ask the right questions about reality as Peirce did. I show that Peirce’s realism responds to different related philosophical problems that led up to the final version as ‘scientific metaphysics’. The conclusion offers an interpretation principle of ‘Scholastic Realism’ as a solution for Peirce’s concerns, a useful idea in order to achieve a better account of reality in Peirce’s strive for a posteriori metaphysics. Peirce’s doctrine is suggested with some of its applications, especially in the field of the theories about abstraction and the foundations of mathematics, as Peirce would want it to be. I believe the thesis, therefore, will render advancement in the comprehension of the problems involved in Peirce’s philosophy, in pragmatism and its origins, and in the history of philosophy conceived as the struggle between realism and nominalism.

**Keywords**

Charles S. Peirce, Scientific Realism, Universals, Pragmatism, Scholastic Realism

**Notes on the Revised Version of this Thesis**

The following points summarise the changes, improvements, and corrections made in this Thesis after the careful comments offered in the ‘Joint Report’. The Report, produced after the oral examination, stressed the need for some changes for its’ final completion and general improvement in the philosophical quality of this Thesis. After a careful process of correction I summarise the results of my amendments in the following list of bullet points. I shall indicate where to find the new sections and the important corrections made.

1. **How my view on the role of Scholastic Realism relates to that of other commentators.**

I address this issue in the Introduction and in two new sections: one included in Chapter One in p. 39 and another one in Chapter Two in p. 77. In the new section of the introduction I explain and reckon the reasons and processes that led me to reconsider the importance of ‘Scholastic realism’ as the most important doctrine available to give unity to Peirce’s philosophy.

1. **Was Peirce a Realist Before or After 1867?**

My opinion on this matter disagrees with the general accepted views found in the Peircean Scholarship. In this revised version I reconsider the different opinions about the beginning and nature of Peirce’s realism. Scholars such as John Boler, Max Fisch, Rosa Mayorga, Murray Murphey, Karl-Otto Apel, Fred Michaels and Don Roberts are discussed in their interpretations. In the new section on pp. 77-79, I substantiate my opinion and my disagreement with the received interpretation, which implies a novel stance on how Peirce developed his realism. Moreover, in p., I carefully explain that this interpretation offers Peirce’s ‘Scholastic realism’ as a guiding principle for the interpretation of his philosophical ideas.

1. **The 'Nominalism' that Peirce fought**

Peirce had a very specific interpretation of the meaning of ‘nominalism’ that links to his medieval predecessors, particularly John Duns Scotus. This interpretation, however, differs from the contemporary and traditional interpretation of nominalism. I explain in a new section in p. 31 how Peirce defined and understood realism and nominalism of universals. In addition, my detailed interpretation in pages 67-77 helps us to understand how Peirce could express surprising claims such as the affirmation that ‘Platonism’ is nominalistic and not realistic.

1. **The Problem of 'Lost Facts'**

One very important objection against Peirce’s conception of both Truth and Reality is known as the problem of ‘Lost Facts’. The objection attacks Peirce’s idea that we will have ‘convergence’ into truth that will presumably come after relentless inquiry. According to the argument of the objection, Peirce’s idea that we converge into Truth after strenuous inquiry is flawed. This can be observed in cases in which the truth-makers are irremediably lost. I believe that this objection can be counter argued by offering a better interpretation of ‘convergence’, ‘reality’ and ‘truth’. Through the lens of his Scholastic realist doctrine we can articulate a better interpretation. I explain this issues in p. 80, p. 169 and in the new versions of Chapter Three and Chapter Four.

Bertrand Russell formulated a related objection against Peirce’s account: I address a response to Russell’s objection in pp 74-5. In this revised version I carefully consider Russell’s interpretation of Peirce in order to show the weakness of his objection.

1. **Issues on the contemporary and the medieval interpretations of ‘haecceity’**

**C**ontemporary philosophy uses the concept of ‘haecceity’ in a different sense than the original medieval use. I explain why Peirce’s conception of haecceity depends on the medieval conception. I do not discard the links with the contemporary philosophy, but I point out why it is important to bear in mind that Peirce’s conception should be read in the spirit of Scotus’ in order to avoid misunderstandings. I explain this in page 32ss.

1. **On Chapter Two and why Peirce did read Cartesian epistemology as nominalistic**

A previous version of Chapter Two had many gaps in the explanation of what Peirce understood as ‘Cartesian epistemology’; on what he considered to be the problem of intuitions and on how he understood the relationship between ‘Cartesian epistemology’, Scepticism and a particular interpretation of intuitions. The new version substantiates Peirce’s apparently odd opinion that all these doctrines rely on a particular nominalism of universals. The new version of this Chapter explains with much more profound detail these connections and why I believe that the background of his ‘Scholastic realism’ helps us to understand better what was going on in the philosophy of the series of papers that concern this particular period of his thought.

1. **How to understand ‘Habits of Action’**

Peirce interpreted the concept of ‘belief’ as ‘habit of action’. He was following Alexander Bain’s definition of belief. However, this is a contentious concept that could be interpreted as a very weak definition of belief. In order to avoid a misunderstanding of the concept of ‘habit’ purely as a disposition I explain why I believe that, in Peirce’s philosophy, they should rather be interpreted as manifestations of ‘true continua’ and belonging to the Category of Thirdness. I explain these issues in pages 88-9.

1. **‘Generals’ and ‘universals’**

In Peirce’s own jargon the concept of ‘generals’ is co-extensive to the concept of ‘universals’. I treat both terms as synonyms indistinctly in all the chapters of this study.

1. **Pragmatism and Realism**

In the new version of Chapter Three I spell out some reasons to support the claim that the doctrine of Scholastic realism can alter the received view on how pragmatism and realism are related. Peircean scholars usually give priority to his pragmatism. I argue contra, that his realism shapes the understanding of his pragmatism as well as the ideas of truth, reality and the pragmatic maxim.

1. **Was Peirce really a follower of Duns Scotus?**

Chapter Four connects Peirce’s theories with Scotus’ philosophy. In this revised version I present evidence that supports that Peirce was indeed a follower of Scotus in virtue not only of Peirce’s own testimony, but in the nature of Peirce’s ideas. Furthermore, I claim that even some opinions that Peirce recognized as divergent from ‘Scotism’ are actually Scotistic at their core: I support these claims in a new section in p. 129.

1. **Does Peirce have a Cosmology?**

In the new version of Chapter Five I offer reasons to believe that through the lens of Scholastic realism we can understand how Peirce’s cosmology is integrated consistently to his philosophy. I reject Gallie’s and Short’s rejection of Peirce’s cosmology as the ‘black sheep’ of Peirce’s thought.

1. **The gist of Nominalism**

Peirce believed that “the belief in things-in-themselves is the gist of nominalism”. I explain what Peirce meant by this expression responding to two important issues:

* 1. Given that we are being given nominalism as a contrast to realism, what about the common idea that a marker of realism allows that the world might outrun our abilities to make cognitive contact with it? I answer to this issue in pages 169, 174-7, and 178-81.
	2. There is evidence of nominalistic descriptions of reality, like the Tractarian view of the early Wittgenstein, that are anti-Platonisitic and atomistic and yet they are not realist in Peirce’s sense. I assess these alternatives in pages 168-9
1. **Peirce’s Realism and Scientific Realism**

In a previous version of the Conclusions there was a mention of the importance of Peirce’s realism in the contemporary debate about Scientific realism. I believe this is a worthy task, but I omit to mention any comments on this in the new version: it is a problem that surpasses the scope of this study and cannot be substantiated here. In this new version I only mention the importance of ‘Scholastic realism’ in the context of Peirce’s desire to achieve a system of scientific metaphysics.

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# Acknowledgments

I owe thanks to many people, but cannot get away without mentioning people who were especially kind and helpful all over these years of my PhD studies; Gratitude to all who, one way or another, were part of this life-changing experience. I want to acknowledge the support of the National Council of Sciences and Technology of Mexico (CONACyT) which funded my research for the four years that included my MPhil and PhD.

I need to kindly acknowledge my fellow pragmatist philosophers and guides: first of all to Chris Hookway, whose guidance, example, philosophical genius, model and prompt advice cannot thank ever enough. I thank my secondary supervisor Stephen Makin that always was a helpful and guiding hand in the way. All my dear friends and colleagues that one way or another contributed in the Pragmatist Reading Group: Cathy Legg, Shanon Dea, Graeme Forbes, Tom O’Shea, Dan Herbert, Andrew Howat, Rosa Mayorga, Joshua Black, Joshua Forstenzer, Roberto Gronda, Neil Williams, Jaime Nubiola, Maiya Jordan, Jose Luis Rivera and Douglas Hare.

My philosophy friends who encouraged me with exciting and insightful discussions are far too many to be all mentioned, but cannot stop thanking Inga Vermeulen, Rossana Keefe, Jenny Saul, Cristina Roadevin, Chris Bennett, Nils Kurbis, Bob Stern, Bernardo Aguilera, Lindsey Porter, Katie Harrington, Joseph Kissolo-Sonko, Laura Beeby, Carl Fox, Graeme Priest, Stephen Wright, Bob Hale, Victor Cantero, Jean-Roch Laupper, Jack Wadham, David Ekstrand, Kathy Puddifoot, Daniel Vazquez, Jimmy Lenman, Antonio Pardo, Yonathan Shemmer, Jessica Leech, Julien Murzi, Jonathan Payne, Damiano La Manna, Clara Sandelind, Adriana Clavel, Cesar Palacios, Francisco Galan, Alejandro Vazquez-Del Mercado, Azucena Palavicini, and Alejandro Cavallazzi.

I would also like to thank my dear friends and family whose friendship, love and support always sweetens the bitter sleepless nights of thesis writing: Pedro Valencia OFM, Eilish Foudy, Peter Krier, Chris Gardner, Jorge Morales, Guillermo Ortiz, Yearim Ortiz, Diego Rosales, Gabriela Martinez, Hector Madrid, Liliana Almeida, Karina Bartz, Cat Quine, Sara Wallin, Mariana Flores, Jose Castro, and Sarah Burrows.

My heart goes to Bernabe Alvarez and Ester Tapia, who received me in England as adoptive parents and dear friends. I also thank all the efforts and unending love of all my family, specially my mother Edith Cardenas, Elvia Cardenas, Kethzeel Oropeza-Cardenas, and my grandmother Melly Uribe-Cosio, to whom this thesis is dedicated.

# List of Abbreviations

The conventions for Duns Scotus’ works are used in the following way:

References to *Collationes oxonienses et parisienses* are *Coll,* followed references using standard internal divisions, using “prol.” for Prologue, “d.” for distinction, “q.” for question, and “n.” for paragraph number.

References to *Quaestiones super libros Metaphysicourm Aristotelis* are *In Metaph.* followed references using standard internal divisions, using “prol.” for Prologue, “d.” for distinction, “q.” for question, and “n.” for paragraph number.

References to *Lectura* are *Lect.* followed references using standard internal divisions, using “prol.” for Prologue, “d.” for distinction, “q.” for question, and “n.” for paragraph number.

References to *Ordinatio* (= *Opus Oxoniense*) are *Ord.* followed references using standard internal divisions, using “prol.” for Prologue, “d.” for distinction, “q.” for question, and “n.” for paragraph number.

References to *Reportatio parisiensis* are *Rep.* followed references using standard internal divisions, using “prol.” for Prologue, “d.” for distinction, “q.” for question, and “n.” for paragraph number.

References to *Questiones Quodlibetales* are *Quodl.* followed references using standard internal divisions, using “prol.” for Prologue, “d.” for distinction, “q.” for question, and “n.” for paragraph number.

References to *Theoremata* are *Theor.* followed references using standard internal divisions, using “prol.” for Prologue, “d.” for distinction, “q.” for question, and “n.” for paragraph number.

The conventions for Aristotle’s works are given according the following abbreviations:

References to *Categories* are *Cat.* followed by the number of the Critical Edition paragraph.

References to *Metaphysics* are *Met.* Followed by the number of the Critical Edition paragraph.

References to *Physics* are *Phys.* Followed by the number of the Critical Edition paragraph.

References to *Summa Theologieae* of Thomas Aquinas are given as *ST* followed by part, question, and article. E.g., IaIIae= First Part of the Second Part.

The conventions for Kant’s works are given according the following abbreviations:

References to the *Critique of Pure Reason* are CPR followed by the letter A or B depending on the edition and the number of the critical edition, e.g., (CPR A79/B104).

The conventions for Peirce’s works are used in the following way:

References to *Writings of Charles S. Peirce: A Chronological Edition* (Peirce 1982-94) cite the volume number, the page and the year the passage was written, e.g., (W2: 466, 1871).

References to *Collected Papers of Charles Sanders Peirce* (Peirce 1935-58) cite the volume and paragraph number and the year the passage was written when available, e.g.,( CP 5.143, 1903)

References to *The New Elements of Mathematics by Charles S. Peirce* (Peirce 1976) are of the form NEM volume number: page number, the year of tha passage was written, e.g., (NEM 3: 903, 1904).

References to *The Essential Peirce: Selected Philosophical Writtings* (Peirce 1992, 1998) are of the form EP volume number: page, the year the passage was written, e.g., (EP 2: 11, 1885).

References to *Pragmatism as a Principle and Method of Right Thinking: The 1903 Harvard Lectures on Pragmatism* (Peirce 1997) are of the form P: page number, the year the passage was written, e.g., (P: 123, 1903).

References to *Reasoning and the Logic of Things: The Cambridge Conference Lectures of 1898* (Peirce 1992) are of the form RLT: page, the year the passage was written, e.g., (RLT: 93, 1898).

Undated manuscripts are marked MS and the number on Annotated Catalogue of The Papers of Charles Sanders Peirce (Robin, 1967).

# Introduction

Metaphysics is the human strive for understanding reality in its underpinning, fundamental and more general aspects; these aspects could be studied as a separate chapter of a general metaphysics and constitute a case of ‘Special Metaphysics’. This is the orthodoxy that the philosophical tradition has inherited us with regards to metaphysics since the medieval times. However, it might be the case that some metaphysical issues stand out among other metaphysical issues in such a way that their careful study entails conclusions that would impact the whole discipline. Such is the case for the ‘problem of universals’ for which belief or disbelief bears consequences for the discipline in its entirety. The history of philosophy presents many distinct approaches to the problem of universals. As for philosophers like Alfred Whitehead, for example; the history of philosophy has been a footnote on Plato’s and Aristotle’s distinctive viewpoints on these matters. This claim is partly right and partly mislead. On the one hand it is true that Plato’s and Aristotle’s positions encompass the possible views about the need of universals in order to make sense of generality and sameness in reality. Their views are the beginning of the tradition as they represent two ways of understanding universals that dominate most of the following literature. Their views are certainly the starting point of any serious engagement with the problem of universals. On the other hand, though, it is not true that from then on all viewpoints are aligned to those basic positions of Plato and Aristotle. The history of philosophy testifies that there are ways of conceiving universals that developed into considerations that were not in the horizon of those original systems. Such was indeed the case for the medieval philosophers who, in spite of being followers of Aristotle, came up with new solutions to the problem. I think that a distinctive original approach is particularly true for Peirce and his doctrine about universals and reality that henceforth I will call ‘Scholastic Realism’.

Charles Sanders Peirce (1839-1914) was probably the greatest mind among the American Philosophers and polymaths of the 19th Century. Because of circumstances alien to the philosophical value of his ideas, he had been largely unknown or misinterpreted in his own time. However, as time passed during the 20th Century, ever more of his ideas have been recognised not only as brilliant, but also actual and promising. Peirce occupies a unique position in the history of philosophy as a thinker fully engaged in the science of the time as well as fully engaged in the philosophical issues of all times. Conducting research on Peirce’s ideas, nonetheless, is not an easy task; his philosophical production cannot be found in the standard way as other’s philosophers work, i.e., by means of a representative piece of work or in a series of systematic volumes. Peirce produced, instead, a staggering amount of manuscripts, notes, memoirs and articles that assumed different audiences and, more importantly, reflected different stages in his thought. The complexity of this situation was worsened by the fact that only a minimal part of his texts were published in his lifetime. In addition, successive posthumously published collections were incomplete and uncritical. Interest in Peirce grew in the 20th Century, and accordingly more serious efforts to offer a better account of Peirce’s writings appeared. The first effort in the direction of having the sources of Peirce’s work was given in Hartshorne and Weiss’ *Collected Papers* (1958-1966) that summed up eight volumes. As good as the effort was, still was not a critical edition and, even worst, it presented a picture of Peirce that did not follow the development of his thought and make it look sketchy, scruffy and sometimes even inconsistent. The effort to give a better systematic picture of Peirce’s thought was better achieved in the still unfinished *Chronological Edition of Peirce’s Writings* (1982) started by Max Fisch and continued by the *Peirce Edition Project* led by Nathan Houser in its beginning and by Andre de Tienne up to the date of this work. Nathan Houser and Christian Kloesel also edited the *Essential Peirce*, an extremely useful collection that includes the most representative philosophical papers he produced.Thanks to this titanic work of collecting and systematically selecting his writings we can have a much better view of Peirce’s thought. Peirce’s thought is a continuum of ideas that seem to develop into the strands of a system. The system was never completed and yet became a unique philosophical view that outstands because of its insightful depth and breadth.

Peirce advanced different doctrines, but he recognised that his Realism about Universals was at the core of his philosophical beliefs and his philosophical method of pragmatism. Peirce repeatedly insisted that his brand of realism would be needed in order to defeat the threat of nominalism and also render Scientific Metaphysics[[1]](#footnote-1) possible. He spent his life developing a system of philosophical ideas that ranged from a theory of self-controlled inquiry and the method of pragmatism to an evolutionary metaphysics. Peirce actually developed a classification of sciences that would explain how reasonableness grows in the universe. One of the core ideas that stand out in his realism is his theory of continuity, that he christened ‘Synechism’. However, Peirce’s system not only explains the doctrine of Synechism, I claim that the system itself is governed by it. That his own philosophy is governed by Synechism means that there is no absolute clear demarcation among his doctrines and thus, there is continuity across all of them; all his doctrines are related and gravitate around a selfless search for truth. Peirce thought this necessary in order to follow an unblocked road of inquiry that is not to be hampered by either ontological commitments (like a priori metaphysics) or ontological scruples (like nominalism). Nonetheless, I believe there are some doctrines that stand out in the continuity of his thought as leading and dominant: his Scholastic Realism, his Critical Common-sensism, and his fallibilism are particularly prominent. This Thesis will focus in the first one: Scholastic Realism. The natural question emerging here is why Peirce considered his Scholastic Realism so important, and why he believed that most philosophical problems meet a correct approach taking on account the premises of his Scholastic Realism.

Having said that Peirce’s realism is prominent in his philosophy as well as a complicated theory reveals that there is no easy task in studying this realism. In this dissertation I want to face a complex philosophical problem concerning Peirce’s Realism. I aim to answer the question of how Charles Sanders Peirce found unity in his philosophy, being his Scholastic Realism a guiding principle of his different stages as a philosopher. I provide an understanding of why Peirce’s doctrine of Scholastic Realism is a feasible and consistent account for the problem of universals. I explain that this problem, in Peirce’s mind, defines the history of philosophy and determines who is right and who is wrong in the philosophical arena. A derived question, then, is why Peirce required us to conceive philosophy as a struggle between nominalism and realism. I also want to show that Peirce’s doctrine of Scholastic Realism is a feasible and consistent account for the problem of universals that pervades the history of philosophy; especially when one, as Peirce did, conceives philosophy as a struggle between nominalism and realism. His doctrine of Scholastic Realism, however, has not got the character of a fixed theory of a monolithic fashion; it does not work, as it were, as a fundament upon which everything else builds. The doctrine of Scholastic Realism developed in different stages in an on-going process that gave it a dynamic character and emerges as a plausible hypothesis in different ways. This, nonetheless, is not a new topic for the Peircean scholar.

When I came across the repeated times in which Peirce acknowledged the influence of Scotus I thought it was worthy to find out whether he was really a Scotistic philosopher as he affirmed. There were some relevant studies about Peirce’s realism available, but I increasingly felt that they did not enough justice to that influence. The problem was striking me as much stronger as it was recognised.

Max Fisch stands out in the received scholarship. He almost affirms that Peirce started off being a quasi-nominalist (Fisch 1986, 184; 186). He goes on to say that it was not until late in his life that he had a shift towards Scholastic Realism (Fisch 1986, 187). Fred Michael (1988), following Fisch, even argues that Peirce was clearly a fully convinced nominalist up to the time of the *Berkeley Review,* and that there are at least two forms of his Scholastic realism that are fundamentally different. Michael even claimed that Peirce’s realism is actually a reformulation of nominalism because Peirce treats generals as singulars (Michael 1988, 339-41). I resist this interpretation in Chapter One. I argue against Fisch’ view in different ways: on the one hand I show that what Peirce, in his early discussion with Harris, calls ‘his nominalism’, was not really equivalent to what Peirce recognised as ‘nominalism’ per se, but a working definition of what he takes to be, for the sake of his argument, ‘idealism’. I converge with Don Roberts (1970), who did not accept Fisch’ view, arguing that what Peirce his ‘early nominalism’ it is not but Peirce’s realism with some nominalistic elements. I treat this issue with detail in Chapter One.

I show evidence that as early as the *Journal of Speculative Philosophy* (JPS) series Peirce was bearing in mind the language as well as the argumentation that are proper of his Scholastic realism. I show that although the expression ‘Scholastic Realism’ is not present in the JPS series per se, it is the criterion that supports the criticisms against Cartesian intuitions (EP1: 28). Indeed, against the traditional scholarship, I argue that my reading renders the appearance of the *Berkeley Review* a natural continuation of the JPS series. I argue that the traditional reading makes the appearance of the concerns of the Berkeley Review at least anomalous.

There is a classic study about the topical influence of Duns Scotus’ philosophy in Boler (1963). Boler analyses the relationships between Scotus’ notions of universals and what he thinks corresponds to them in Peirce’s thought. Boler (1963, 68; 148) concludes that Peirce’s enthusiasm about Scotus is exaggerated. I disagree with Boler in that respect. I believe that the lack of a Chronological edition of Peirce’s writings affected his judgment on the matter, as Boler was unable to have a historical perspective in how Peirce evolved in his conception of the reality of universals. A chronological overview of Peirce’s development helps to put the matter in context. Part of Boler’s valuable analysis seems to ignore Peirce’s language about universals. Thus, Boler restricts the scope of the meaning of universals as entities equivalent to laws almost exclusively. I go beyond Boler in this topic: I claim that the language of universals was refined and came to mean different aspects of Peirce’s category of Thirdness and particularly what Peirce called ‘True Continua’, as will be explained in the Chapter about Synechism. Boler did not mention the Aristotelian vocabulary of ‘modes of being’ that was so important in Peirce’s mature conception of universals. I, in contrast, will consider this vocabulary as the most developed account of Peirce’s Scotistic-inspired Realism.

Rosa Maria Mayorga (2009) returned to the topic of Boler’s study and hinted that Peirce’s realism was more complex and deep than it seemed at a first review of his thought. She offered a wonderful and detailed explanation of how Peirce’s realism is consistent with his thought and the unity of his thought. She also cared to reconstruct a general picture of the problem of universals too. However, Mayorga’s study seems to affirm that Scotus’ and Peirce’s realism are ultimately different and incompatible. I disagree with Mayorga and I claim that, moreover, Peirce’s and Scotus connection is stronger than what Peirce himself recognized. This is a contentious claim that goes against the traditional scholarship. Because of that, my thesis adopts a historical approach on the development of Peirce’s Realism. This explains why I go beyond the received view. I account for the relationship between Scotus and Peirce in two ways: (1) I consider what Peirce himself thought to be his Scotistic position and (2) I also reconsider the strategies Peirce used to defend his Scholastic Realism. As I was researching about the topic, I discovered that Peirce’s strategies to defend Scholastic Realism are similar to Scotus’ in spirit even when Peirce himself thought he was following a different path. The convergence of Peirce and Scotus can be observed, for example, in my interpretation of Peirce’s opinion about the relations between Thirdness and Secondness and the importance of ‘the Outward Clash’ in these relations. I also believe that Peirce’s conception of ‘Modes of Being’ is Scotistic, and I trace its Aristotelian and Scholastic background. Finally, I think there is one particular case in which Scotus’ and Peirce’s connection has not been appreciated enough. Scotus connects ‘the common nature’ and its instantiations by a discourse about a ‘unity’ prior to the numerical unity. Peirce’s notion of continuity is precisely the same strategy: he wanted to prove that the continuity that defines the general (term that I use as Peirce’s synonymous of ‘universal’) is prior to the discrete entities that instantiate it. As far as I can tell from a careful study of the scholarship, there is no similar interpretation of Peirce’s and Scotus’ relationship available, even in spite of the copious number of Peirce’s references. My opinion is that this is the result of the lack of acquaintance with Scholastic philosophy in the scholarship.

Therefore, in order to carry out this study I have chosen a thematic approach that matches with the development of Peirce’s realism. I set up some questions that would be answered along the way. Although I consider that Peirce’s philosophy is dynamic and has to be recognised in a historical perspective, I argue against Murray Murphey, Thomas Goudge and other scholars who believe that Peirce repeatedly change his mind. I show that his different stages on the development of his realism are not different and inconsistent systems instead, as though Peirce was a loose thinker rapid to criticise others but who used to change his mind for no serious reasons. Against that interpretation, I show the evolution of his thought as the development of a single philosophical continued inquiry, spanning from the beginning of his philosophical career in the 1860s until his last writings in the 1910s. I follow the path of writers like Christopher Hookway, Nathan Houser, Max Fisch, John Boler, Paul Foster, Rosa Mayorga, and Susan Haack, who believe that Peirce’s thought can be understood as an on-going unified thought. However, in introducing his Scholastic Realism as a proposed way of reading his work I go further than these authors, as I propose that Peirce’s Scholastic Realism is, more than any other of Peirce’s brilliant contributions, the utmost important doctrine that gives organic unity to the different stages of his development as a philosopher.

I answer the question about how Scholastic Realism is present in all the stages of Peirce’s thought in the following way: in the first chapter I introduce the problem of universals, explaining why is relevant and why is so central in the history of philosophy. In this chapter I offer some considerations on why should we care for the problem of universals at all. After showing the philosophical relevance of the problem of universals, I trace back the solutions to it in the ancient classical philosophers first and then secondly in the medieval Aristotelian tradition, especially focusing in John Duns Scotus’ solution. Scotus represented the maturity and subtlety of medieval thought; he discussed all the relevant views of the time and thus obtained the most complete account of the problem of Universals from a realist stance. I consider two main contributions of Duns Scotus: (1) he gave the principles to distinguish what kind of reality is present in the universals, i.e., he formulated a distinction between reality and existence; (2) he also explained a way to achieve principles of individuation of those universals in existing individuals. After considering Scotus, I move into Peirce’s interest in the problem and how he retrieved the medieval tradition by focusing in Scotus. I explain that Peirce integrated Scotus’ system in a new reformulation of the problem given in his own Scholastic Realism. I also introduce a very general account of nominalist theories of universals in order to understand how they compete as rivals of the realists accounts. What Peirce conceived as nominalism is different to what is traditionally conceived as nominalism; therefore, it is necessary to explain Peirce’s particular conception of nominalism. Many surprising claims of Peirce such as the one that Platonism is nominalistic rather than realist are understandable given his conception of what nominalism is. I could not avoid classifying nominalist proposals without some anachronism in their production, but for the purposes of showing how do they constitute a general strategy seems enough to enlist them as strategies. It interests me that the problem of universals helps to reveal Peirce’s claim that the history of philosophy needs to be conceived as a struggle between nominalism and realism. I, consequently, finish this chapter answering why a profound study of the topic could lead to this conclusion as did for Peirce.

In the second chapter I explain the development of the early stages of Peirce’s realism, where a germinal theory of reality, based in Duns Scotus’ definition of reality makes a first appearance. I question the origins of his realism and the problems that prompted it against the popular philosophical and scientific traditions of Peirce’s time. Through the critique that Peirce does against Cartesianism and the Cartesian concept of intuition we discover how he comes up with his early realistic theories and a first critique against nominalism. Peirce recognised that the origin of a nominalistic theory of reality is given in the belief in absolute things-in-themselves. This, in Peirce’s opinion, blocks the road of inquiry. He also puts into doubt that intuitions play an essential place in cognition. Peirce thought Cartesianism and intuitionism as opposed to Scholastic philosophy; I explain his reasons in this chapter. One of the questions that occupy the second chapter is how to understand why Peirce thinks that the origin of a nominalistic theory of reality is given in the belief in absolute things-in-themselves, a belief that blocks the road of inquiry. I also explain how those things-in-themselves are ‘incognizables’. ‘Incognizables’ seem derived from the belief that intuitions and other transcendental entities play a role in grasping aspects of things-in-us. Peirce resisted these entities and in my interpretation of his realism that explains the origins of his realism. The documents of this chapter belong mainly to the decade of 1860 and early 70’s.

In the third chapter I track Peirce’s account of reality, which I label in this stage as ‘the logical conception of reality’. I explore the reasons for why this account is intimately linked to the desire of building a system of ‘scientific metaphysics’. Peirce wanted it to successfully account for an adequate rational fixation of belief as well as fulfil the conditions expressed in the pragmatic maxim. This metaphysics is meant to develop by what Peirce called ‘the method of science’. In this same chapter I shall explore the reasons for why the logical conception of reality seems to be much closer to the concepts of truth and belief in the context of his early theories of inquiry and meaning. Some problems and objections related to “the logical conception of reality” will have consideration too. Indeed, as Peirce himself noticed that the logical conception of reality seems to fall short in its explanatory scope, I will explain why he wanted to go further than a pure logical conception in his philosophical proposals. The documents studied in this chapter are the famous papers of the series *Illustrations on the Logic of Science* and they mainly belong to the late 1870s. These papers show Peirce’s mentioned early theories of inquiry and meaning, and contain the origin of the Pragmatic Maxim in its first formulation. One consideration I bear in mind is that the development of the Pragmatic Maxim goes hand in hand with the development of his theory of reality, as the following chapters will make clearer.

In the chapter named ‘Scholastic Realism as Category Realism’ I propose that the problems given in the previous version of realism made necessary a more substantive theory. I explain why this stage produced a threefold theory of reality that will characterise his realism ever since. The theory of reality developed into a theory of categories: Firstness, Secondness, and Thirdness. In addition, I address the advantages that this Category Realism offers towards a better and more substantive metaphysical account of reality. Peirce’s realism about Categories has its roots in the pre-logical science of Phenomenology or, as Peirce wanted to call it ‘Phaneroscopy’. Peirce’s theory of signs and logic of relatives also help to understand the hypothesis that there are ultimately only three Categories. I explain how a derivation of the three Categories follows both from Phaneroscopy and from the logic of relatives. Finally, in this chapter I question the reasons that motivated Peirce to make amends and advances in the previous versions of his Scholastic Realism by the use of a three-categorial framework. This chapter focuses particularly (although it is not limited to) in the documents that Peirce wrote mainly in the 1880s and previous to the series of articles that will appear in “The Monist” journal in the following decade.

In the Chapter Five I explore Peirce’s argument that metaphysical concerns are a consequence of an on-going self-controlled inquiry that finds a posteriori metaphysical entities. These entities are of the nature of real continua. I present the path of arguments that result, as a corollary, in Peirce’s doctrine of Synechism as philosophical progress in the problems set in previous chapters. I show why real continuity is the core of Peirce’s realism; explaining that the reality of continuity is universally necessary in order to get the best complete account of the manifold of experience. In Peirce’s mind, every advantage come from the doctrine of Synechism: the doctrine of real continuity overcomes the problems of truth (understood as) the convergence of opinion (that could appear as a theory of absolute bivalence of a final opinion). The doctrine of continuity helps to understand how real chance (‘real vagues’ and ‘real indeterminates’) shows a tendency to habit. Through the lens of continuity, habits are continuous universals needed for satisfactory explanations and accounts of science and belief. Finally, I argue why Peirce’s argument for Synechism is, in my opinion, the best version of a doctrine of scientific metaphysics. This chapter focuses in papers and documents that span from the 1890s until 1903. I have deliberately chosen the year 1903 because seems to be the moment in which Peirce extended his realism even to possibilities by the time of his *Harvard Lectures* on Pragmatism, and that problem will be considered in the following chapter.

The last chapter explores the mature realism that Peirce developed associated with the proof of pragmaticism (which is a name he gave to his particular version of pragmatism). This realism was a developed neutral metaphysical theory. This metaphysics finds an ultimate ground in the theory of continuity and is expressed in different modes of being. There are an interesting number of philosophical problems I explore here questioning: why Peirce’s pragmaticism needs Scholastic Realism and why Scholastic Realism is manifested in different modes of being? What is the ultimate link between real continuity and Peirce’s proof of pragmaticism? The last section of that chapter connects the different modes of being with Peirce’s architectonic of knowledge, showing that Peirce conceived his architectonic system bearing in mind a scholastic realist stance. The architectonic system reveals an important application of the realism of the Categories and it is to be understood as grounded in it, especially since 1905. This section also helps to understand why the categories are manifested in different ways or ‘modes of being’ as well as why the classification of the sciences is also essential to understand the place that Peirce’s System of Scientific Metaphysics has in his philosophy.

In this thesis, therefore, I aim to give a new particular angle to understand the unity of Peirce’s thought. I present Scholastic Realism as the one doctrine that seems to be pervasive and continuous all across Peirce’s development. I present his Scholastic Realism as a developing doctrine that was expressed in different ways. The presentation of his doctrine changed along as Peirce developed a more nuanced questioning of the philosophy involved in his other doctrines. In the Chapter One, I explain the origin of his Scholastic realism: from the point of view of the medieval doctrine that supports its main claims, particularly through the ideas of Duns Scotus, one can understand Peirce’s initial project. In Chapter One I show how Peirce caught interest in the promising ideas involved in medieval scholasticism. In the Chapter Two I trace back Scholastic realism in Peirce’s early philosophy and thus demonstrate the presence and importance of Scholastic realism in understanding what Peirce aimed in his argumentation against Cartesian doubt. In Chapter Two I argue that the Scholastic Realism of these days is generated by what Peirce called ‘the Scotistic definition of Reality’ as well as with some ideas of Scotus about universals that Peirce adopted. Peirce’s adoption of Scotus’ ideas was progressive; at this early stage was hard to distinguish his realism of universals from the realism about what Peirce called ‘the final opinion.’ Thus, in Chapter Three I keep tracing the developments of this realism within the papers of the following decade in which Peirce also developed his theory of meaning and his theory of inquiry. In Chapter Four I argue that Peirce’s realism of universals provided a much more substantive form in his realism about Categories. In Chapter Five I argue that Synechism completes the realist account of the Categories and demonstrates that Scholastic realism of universals is mainly concerned with the items that Peirce called ‘True Continua’. I explain why this interpretation has a source in mathematical thought. I also defend the interpretation that Peirce’s evolutionary cosmology presupposes Scholastic realism. Finally, in Chapter Six I offer the mature development of his realism in the development and presence of the concept of ‘modes of being’ as a manifestation of a mature realism. I claim that the mature realism recapitulates the advantages of previous developments in an inclusive manner. The concept of ‘Modes of Being’, therefore, is a way of understanding in what level of reality each item of reality is to be classified, and how we can actually tell whether something is to be deemed as a universal. Chapter Six also describes how the strategy of distinguishing ‘modes of being’ is present in Peirce’s effort to offer an architectonic classification of the sciences.

In the conclusions I offer to follow the tread of argumentation that leads to recognise that Peirce’s Scholastic Realism is of a particular and fundamental importance to understand his philosophy and the problems involved in his continued inquiry. Yet even more importantly, the conclusion will argue that this is a feasible and plausible account of reality not considered so far in its insightful nature for reasons that are not necessarily philosophical, but due to a misunderstanding of the kind of realism Peirce defends. The conclusion argues that we might get good use of Scholastic Realism if we ask the right questions about reality and we will be rendered a good position to defend Peirce’s scientific realism. I show that Peirce’s realism responds to different related philosophical problems that led up to the final version of Scholastic Realism as ‘scientific metaphysics’. The conclusions offer an interpretation of the principle of ‘Scholastic realism’ as a solution for Peirce’s concerns about reality. That interpretation will also be useful in order to achieve a better account of reality in contemporary metaphysics by suggesting a reformulation of the problem as well as some applications of it. This later account of realism was also useful to Peirce when he considered problems in the field of the theories about abstraction and the foundations of mathematics. The questions raised along the process of the argumentation will finally be recapitulated in order to show how the historical problem of universals must be reconsidered and revisited using Peirce’s philosophy and, finally, that a natural result of that would be a particular angle in the history of philosophy conceived from the struggle between realism and nominalism. This viewpoint is intended to support a renewed formulation of Peirce’s Scientific Realism as opposed to a nominalistic one.

I believe the thesis, therefore, will render advancement in the comprehension of the problems involved in Peirce’s philosophy, in pragmatism and its origins, and in the history of philosophy conceived as the struggle between realism and nominalism.

# Chapter 1. Why should we care about the problem of Universals?

## Scientific Realism

There is a short tale by Jorge Luis Borges called in Spanish: ‘Funes el Memorioso’ (*Funes, the Memorious[[2]](#footnote-2)*). The story reckons that once upon a time, there was a man who was incapable of perceiving commonness among things, though he was extraordinarily able to identify every single thing in its singularity. His knowledge of details could even come down to the very basic and unique features of every single aspect of the thing. So much so, he enumerated every single detail separately: up to the point that even the numbers themselves seemed so unique that they could not have been even used to be equivalent to the objects they represented. The case of Funes is a daunting example of a mental experiment of knowledge comprised only of individuals. After all, the problem describes the ultimate impossibility of not been able to even use language. Language, as a tool in our capacities for expressing meaning, is based in the abstraction of properties of similarity between entities: words have a meaning if there are things that fall into their concept. More importantly, language is meant to connect us adequately with reality, this connection ought not to be left in mystery. The thought experiment of the story about Funes addresses the fact that we cannot really conceive the use of language without the use of generality, resemblance, and relations.

As noted above in the Introduction, the problem of universals is a problem within the scope of ‘special metaphysics’ that bears consequences for ‘general metaphysics’. One might wonder why it is important to care about such a theoretical nuance of philosophy. After all, it seems to find no definitive solution from the times of ancient philosophy up to this date. However, some replies might be offered to the expressed anxiety: first of all, it seems that there always is a need to account for how things can have common features. Knowledge of all kinds is pervaded by the assumption that things actually relate and have properties that can be generalised. Second of all, it is not only important to understand how do we know things: it also seems a prerequisite assumed in knowledge itself. Valuable knowledge, for example, scientific knowledge, seems to illustrate the case. Scientific knowledge teems with concepts that presuppose generality and commonality. This presupposes that there are regularities occurring around us. A regularity is a law-like behaviour operative in nature and such behaviour renders prediction, induction and theoretical explanation acceptable. The problem of universals, thereby, affects a fundamental aspect of what we consider our best scientific theories: theories that make sense of the world in a scientific manner. This fundamental version of Scientific Realism might not always be expressed explicitly, but is certainly assumed in the scientific practice of anyone who expects that the patterns of experience described by an experimental procedure are expected to show recalcitrant results, of finally, otherwise be disproved.

## Plato and Aristotle

The first philosophers that considered seriously the problem of commonness in a systematic way were Plato and Aristotle. Plato put in Socrates’ mouth a number of conundrums. For example: what are the forms of the perfect ideas that instantiate in morality, mathematics (in the form of geometrical and arithmetical issues), and even knowledge in general, making it so possible? Plato proposed a theory of perfect forms that *inform* the objects that share a property by a relation of participation. If I say, for instance, that this book is red and that balloon is red, both objects share the property of being red, or ‘redness’. Plato argued that there is a perfect form of redness in a parallel world of individual perfect forms (see Plato 1987).

However, Aristotle, while still a disciple of Plato, saw a number of problems in Plato’s theory. Aristotle’s critique of Plato gravitates around the so-called ‘third man’ problem. The ‘third man’ problem questions whether if a form is a separate individual. If a form is indeed an individual, then, if two men bear resemblance, the form of the resemblance itself must be a third man in between. However, then again a further fourth man will be needed to relate the first man with the third man, and so forth. Aristotle intended to solve Plato’s problem by proposing that the forms do not exist in a parallel world of independent perfect forms. Rather, these forms are attached to the substances and individuals. Thereby, what we know about the forms is only present in their instantiations. Aristotle wrote:

If, then, the principles are universals, these results follow: if they are not universals but of the nature of individuals, they will not be knowable; for the knowledge of anything is universal (*Meta.* 1003a14)

Aristotle developed an interesting theory of Categories. In his account properties find a relation of instantiation in individuals. However, Aristotle’s explanation of how properties relate with individuals through instantiation seems to be the subject matter of many different interpretations. The most important source of Aristotle’s account is his books on *Metaphysics.* Aristotle himself said apparently contradicting things of universals in his *Metaphysics*, first saying that there is impossible that they are ‘substances’ and then acknowledging that universals are ‘substances’. Let us contrast two key passages:

…But if… there must be something apart from the individuals, It will be necessary that the genera exist apart from the individuals –either the lowest or the highest genera; but we found by discussion just now that this is impossible (*Meta.* 999a 25-32)

Let us now take a fresh starting-point and say what, and what kind of thing, substance should be said to be… Let us start, then, from the fact that substance is a principle and a cause of some sort… It is clear, then, that what is sought is the cause –and this is what-being-is, to speak logically… the question must be why the matter is so-and-so, i.e., the form, and that is the substance (*Meta*. 1041a6-b8).

These passages generated, unsurprisingly, different interpretations. Such interpretations are sometimes inconsistent between each other. The tradition, thus, initiated by Plato, was called ‘*extra rem’* or ‘*ante rem’* realism. This realism argues that the form or universal is a separated entity from the thing in which inheres. Aristotle’s realism was called ‘*in re’* realism. His realism defends that the form cannot be separated from the thing in which inheres. The challenge of deciding which realism is correct was fully adopted by the Medieval Philosophers; they considered the problem as prominent and fundamental to any philosophy.

## Medieval Solutions

This chapter is devoted to introduce the problem of universals from a historical point of view. The medieval philosophers worried about what is the fundament of commonness between things, and why those common things have a common intelligible structure that they called ‘nature’. The contemporary philosophical debate testifies a return of the schoolmen’s problems. Nature, for them, means what kind of actions we should expect from an entity. The medieval philosophers focused in the expectations derived from nature so conceived. They followed the principle that “actions presuppose the nature”. Hereby, they used the received Aristotelian jargon that steadily would become the orthodoxy about the terms in which the problem of universals was to be formulated. Surprisingly, both contemporary and medieval philosophers, tried continuously to prove that the common structure of reality and mind does not seem to rely in our single minds. Consequently, in spite of there being different languages and idiosyncratic ways to access the knowledge of things, there are features of reality pervading and grounding generalisation. Generalisation, thus, does not depend on those subjective features associated with a concept. We can observe that there are two elements of generalisation involved here: on the one hand the problem involves our knowledge of the world and how that knowledge can be objective; on the other hand, the problem questions how some entities backing knowledge need to be integrated in a theory of reality, an ontology about how the world is independent of our knowledge of it. Universals, thereby, are an epistemological as well as a metaphysical problem of the one-over-many, all at once. Regarding these universals, thereby, the problems that the scholastics tried to face were the following:

1.       How are universals substantiated?

2.       What is the status of these structures?

3.       How do we grasp universals through our intellective abstraction?

These questions might appear as using bygone philosophical jargon, however, asking how something is substantiated and enters abstraction is nothing else but asking how something has a particular ontological independence and how relates with our epistemological access to it. In the following sections I will focus on a particular medieval philosopher: the Franciscan John Duns Scotus (c. 1266-1308). I will contrast Scotus against other important medieval philosophers that offered alternative solutions to the problem phrased in the above-mentioned questions by introducing his account of universals.

## Scotus on Universals

John Duns Scotus wrote several commentaries on different philosophical topics: We should not forget that he was first and foremost a theologian. Thus, he worried about how faith and reason could be reconciled. Scotus also wrote on free will and determinism, along many other topics. Nonetheless, it was most of all due to his subtle distinctions in metaphysics that he earned the title of ‘Subtle Doctor’. He developed distinctions and new terms that gave entire new approaches to classical problems. These distinctions suffice to say, were not always easy to grasp by his disciples (or by anybody who reads his intricate philosophical writing). His disciples, consequently, had different interpretations of Scotus and his distinctions.

Scotus coined an Aristotelian version of an account of universals; let us not forget that an account of universals is ultimately an account of reality. Scotus’ account of reality necessitates a consideration of the problem of universals. The account requires universals to spell out all the traits of reality. His Aristotelism is ‘*in Re’*, which means that the reality of Universals is understood in the context of the singular things where we find the universal. Scotus, like all the other relevant medieval philosophers, articulates his arguments around two principles: on the one hand a principle that accounts for the reality of universals or ‘principle of universalization’ (PU); on the other hand a principle that accounts for the reality of individuals or ‘principle of individuation’ (PI).

Scotus devised a theory that ranges along different senses of the concept of ‘unity’. ‘Unity’ means the connection expressed in a concept that behaves as ‘one-over-many’. Scotus extended the understanding of ‘unity’ by using the concept of ‘common nature’. Common nature addresses the recognition of a kind of unity that is prior to the numerical one. The use of the concept of common nature implies the recognition of specific universals in a restricted sense of the property. The unity of a concept can be prior to numerical if there is no specification of how many times is instantiated, even if is instantiated only once. What matters here, thence, is not an operation of counting or enumerating, but the predication that there is a real relation that unifies. When we count individuals, though, we enumerate them by using another further sense of the concept of unity: this unity will be the first element of the list. That, however, is a derivate sense of the concept of unity, a numerical one.

Another concept that cries out for clarification is the concept of ‘property’. It was used in a difference sense than the one common to contemporary philosophical literature. The medieval sense of the concept of ‘property’ derives directly from the Latin ‘*Proprietatis*’, and this from ‘*proprium*’, meaning something that is intrinsic and not accidental to a thing. In fact, Scotus recognised that universals are properties. This, however, is a restricted sense of property and cannot be applied to any property whatsoever. In consequence, the account of universals formulated by Scotus and most of the medieval philosophers is interested in universals that are essential to things. This kind of theories will probably discard artificial kinds and rather prefer natural kinds as candidates for genuine properties in the sense noted.

The explication of an essential property rests in Scotus’ theory of ‘prior to numerical unity’. There is a prior to numerical unity and metaphysical continuity among what is common between things, and this, according to Duns Scotus, is the real common nature. The common nature is a metaphysical continuity amongst the entities, which share a property in the strict sense: an essential property. Now, this common nature, if it is seen from the point of view of the generality that our intellects find across through cognition, it is a real universal. From the point of view of the individuated entity and the contracted haecceity, however, is an existent individual. Scotus saw that in order to defend a consistent system of metaphysics it was necessary to explain how the ‘common nature’ is instantiated. Duns Scotus christened his principle of individuation of the common nature as *haecceity[[3]](#footnote-3)* (which as mentioned above, can be translated as ‘thisness’)*.*

Scotus’ account of haecceity affirms that an entity, a haecceity or primitive “thisness” individuates each substantial nature. Consequently, according to the spirit of his arguments in q. 2-6 of the second book of the *Ordinatio* (see also, Ord II, q3. n1), there is a disjunctive syllogism that makes us chose haecceity amongst other alternative principles of individuation:

1. The common nature is individuated either by negations, or existence, or accidents such as quantity, matter, or haecceity.
2. Neither negations, nor existence, nor accidents, nor matter individuates it.
3. Therefore, it is individuated by a *haecceity*.

Why can the principle of individuation not be negation, existence, accident or matter? There are different reasons why Scotus rejected the classical theories of individuation. The Schoolmen frequently advanced their own theories in commentaries to the classics. Even though most of them appear to analyse arguments of Plato or Aristotle, they are rather actually presenting their own theories disguised in the genre of commentaries. Regarding the style, Scotus was not much different; he was inspired in Aristotle’s metaphysics and Peter Lombard’s sentences. His theories, nevertheless, are very original and surpass the genre of commentary by far. This is one of the reasons why Scotus’ account is revolutionary with respect to other ones: he did advance a completely new theory of individuation by his principle of haecceity (See Williams 2007: 100-102). Let us explore the reasons why he would reject other accounts:

First, Scotus denied that negation can be the grounds for individuation. Here he is contending against the theory of the ‘double-negation’ or ‘two-fold negation’ proposed by Henry of Ghent. Henry of Ghent presented a doctrine based in the following principle of individuation:

(HG) Whatever (a) is not anything else, and (b) is not internally divided, is an individual.

(HG) is a principle of individuation based on difference by negation: what determines something against another is what makes something different. Scotus rejected this kind of individuation because, although effectively discriminates, it also presupposes the individuality of each thing as the principle of differentiation. In his critique to Henry of Ghent, Scotus assumes a tacit principle of this form:

If a principle causes items to be individual, the principle causes them to be differentiated from other items.

Second, other philosophers like Bonaventure, Aquinas, and the Jewish philosopher Avicebron[[4]](#footnote-4), affirm that existence, or the ‘act of being’, could explain individuation due to the reason that each existence is the actualising of the potential aspects of common natures. Consider the case of a straight line, if it is potentially divisible in infinitely many places, then a division in the line is only real when is actualised by a cut: so long as the cut does actualise the potentialities we can rightly say that a cut ‘exists’. ‘Existence’, hence, cannot be a principle of individuation: the existence is a result of the cut. Saying otherwise means that the cut happened because of the existence of the point, but that would presuppose that the infinitely many points where cuts can happen exist, and that is a fallacy. Existence is a result of individuation, and it presupposes that what exists is an individual entity and, thus, another tacit principle of reasoning comes in:

What presupposes the determination and distinction of another is not the reason for distinguishing or determining the other (Ord. II.3.1.3.62)

In addition, existence presupposes the determination given by a particular mode of being distinct to the mode of being of essence:

The being of existence does not have its own differences other than the differences of the being of essence (Ord. II.3.1.3.61).

Thirdly, an entity can be individuated by accidents that finally determine it. Accidents inhere in things, quantity and quality cannot be the principle of individuation: we can think of them independently of their particular instantiations, they are also shared in different things; their instantiations in things are properties that would hardly work to individuate something. It has been said that a particular bundle of properties, however, happens to be specific to each thing, but then again Scotus argued that the properties of a thing follow from its individuation, not the other way around. Scotus follows the reasoning of Boethius, who talking about individuation interpreted numerical difference as an accident. Boethius wrote:

The variety of accidents is what makes difference in number… if in the mind we separate out all the accidents, nevertheless place is diverse for each of them. We can in no way suppose that it is one [space] for two men. (Boethius *De Trinitate* 1.24-31)

Finally, it is needed to question whether matter can be an individuation principle, against what Thomas Aquinas defended as ‘designated matter’. For Scotus, ‘designated matter’ cannot be a principle of individuation for two reasons: (1) matter, as we testify by simple observation, is dynamic, so in its changing character holds a particular existence to itself; thence, the matter of my body is not the same all along as it changes, holding a different existence as far as my cells change etc.; secondly, (2) matter is existent in itself, so the act of being of matter does not entail the act of the entity composed by it. Consider the example of a dead corpse: it is effectively the same matter of a living body if, nonetheless, it is individuated as matter even though it is not a living body any longer. A living entity must be something different in order to result as a particular existence and concretion of humanity.

## Why ‘haecceity’ should be accepted as principle of individuation?

There were alternatives to Scotus’ account, as Aquinas’ account of designated matter was. This account might be raised against the need of Scotus’ concept of haecceity. A second argument, consequently, is proposed by Scotus. This argument is aimed to be decisive against the other principles of individuation. Aquinas, as noted above, argued that matter needs to be considered as the principle of individuation because we know things by their manifestation into physical matter. In the case of negation, for example, we cannot have any direct acquaintance of a negation, as it is a result of an inference, while for a designated matter we actually do. Scotus second argument, however, supposes that our acquaintance with two seemingly identical objects does not have to block our cognition of the individuation of the object. Consider, then, the second form of the argument of the second book of Duns Scotus in the *Ordinatio*:

1. Suppose x and y are different singular substances in the same species, S.
2. It follows that x and y are different beings, yet somehow the same.
3. Their difference is not accounted for by the nature in x or by the nature in y.
4. Besides, the nature in x and the nature in y, there are some primarily diverse items by which x and y differ.
5. These primarily diverse items are not negations, nor accidents, and so on…
6. It follows that they are positive entities that per se determine the nature of that to which they belong (Bates 2010, 88-9)

Scotus picture of haecceity follows that positive aspect noted in the argument above by determining in levels each entity, following the mentioned premises we obtain a picture like this:

|  |  |
| --- | --- |
| x | y |
| Nature n | Nature n |
| Something singular, k | Something singular, h |

Consequently, k and h cannot be the same singular: primarily diverse items that suffice to differentiate singular substantial forms are singular entities. They enter into a composition with the common nature. Suppose the case of two identical drops of water: if the designation of the matter were all to individuation, then there would be no available individuation for them. However, there is individuation, as we can actually distinguish them both in their numerical difference as well as in their individuality. As Gracia explains it, the haecceity, therefore:

Concerns the necessary and sufficient conditions for something to be individual (1988, 18).

The discussion of the contemporary conception of haecceity is actually different to the Scotistic formulation presented above. Contemporary accounts of haecceity rather follow Kaplan’s definition (1975, 722): “the doctrine that it makes sense to ask questions about the transworld identity of individuals independently of their properties and relations.” The contemporary definition takes for granted that the interest in identifying a primitive ‘thisness’ helps to make sense of the identity of properties and relations across the possible worlds. The contemporary theories take the principle of individuation for granted. This contrasts with Scotus’ interests: from his theory, one can note that the principle of individuation is prior than the principle of identity, which is, as it were, a manifestation of individuation. Scotus’ account does not theorise for transworld-identity for a still stronger reason: Scotus conception of haecceity does not allow that the primitive *thisness* can be instantiated in two or more numerically different items, even identical copies across possible worlds. Adams and others theorists of haecceity show little interest in Scotus’ idea that there is a prior to numerical unity at the bottom of the *per se* unity given in individuation (Wolter 1962, 732). The haecceity of contemporary theories accepts that the same *haecceity* accounts for the ‘copies’ of the same object across possible worlds, but the fact that there are at least two singular ‘copies’ of an entity violates Scotus’ postulates. Finally, there are claims of contemporary philosophers of haecceity, like Robert Merrihew Adams (1981, 3), that contrast with Scotus’ idea of haecceity by their use of modal conditions: “There are facts, and also possibilities, that are not purely qualitative ...the thesis… is that all the non-qualitative possibilities are possibilities for actual individuals.” Adams believes that haecceity counts as a non-transferable qualitative possibility of a given individual[[5]](#footnote-5). Adams (1983, 23), like Kaplan, makes a distinction between ‘existence’ and ‘actuality’ that has no equivalent in Scotus (or Peirce) given in their use of modality:

I argued that whether there are possibilities about an individual depends on whether there actually are propositions about the individual, rather than on whether there would have been such propositions if the possibilities in question had been realized. This conclusion can be incorporated in a possible worlds semantics by stating the conditions for the truth of modal propositions in terms of truth a t a possible world instead of truth in a possible world (Adams 1983, 23)[[6]](#footnote-6).

Peirce focused in an idea of haecceity originated in Scotus, not exactly equivalent to the contemporary one. Hence, this study will focus in the Scotistic idea of ‘haecceity’ as an influence in Peirce’s thought. The topic, however, is interesting in its own right and can be studied with more detail elsewhere.

## Scotus’ Solution to the problem of universals

There are two senses for the word ‘universal’ that have been considered so far in this discussion: first, the common nature undergoes a process of universalization within the mind and in that sense it is a creation of the mind. That is a sense in which universals are captured by the intellect, what Scotus calls the ‘logical universalization’. Scotus uses the term *habitualiter* to express a real aspect of the common nature but in the instantiation of a concept relative to a mind. The second sense is the metaphysical one grounded in the real commonness of nature that things have among themselves, but contracted by a different individuation or haecceity in each thing. Scotus offers the term *actualiter* to express how the common nature is instantiated or contracted in an individual.

Consider the statement: “Obama is a man”. Something must be ‘in’ Obama for him to be a man: he needs to share a Common Nature in order to be recognised as a man. That Common Nature needs to be instantiated in such a way that nobody can be a man in the way that Obama is. Now, the distinction of both aspects is just a formal distinction, so the contraction of the common nature and the haecceity are one and the same thing. The formal distinction, nonetheless, is more than a logical distinction: it is a real distinction. This way of a solution is clearly different from what Plato could have envisaged. The common nature of Obama is not another man, but humanity, and humanity is not an individual. What Scotus affirmed, then, is that there is a real continuity in the humanity of Obama and the rest of the humans. The mind discovers that continuity by a logical operation of universalization, but that universalization is instantiated in Obama’s haecceity, so it is impossible to separate Obama from his humanity in a non-conceptual way (although is possible to do it conceptually, i.e., in Scotus’ words: *formaliter*). However, it is also impossible to separate Obama’s case of humanity from humanity in general. The metaphysical continuity across all the humans is expressed in other instantiations of the humanity as it is, for example, Miliband’s, Merkel’s and other people’s humanity: all of them have to fall under the same definition of a universal, i.e., a shared Common nature. This very same Common nature becomes a logical universal when we conceptually identify it.

There is a worry, however, here: philosophers leaning towards nominalism of universals claim that if the formal distinction is not logical then it has to be grounded in a real division of things. Scotus solution was to offer different modes of being for the contracted things: they are objective contracted realities, but they are metaphysical realities too. This means that their being can be said in different ways, and their unity can be understood in different degrees.

## Nominalism of universals

A predictable alternative to face the problem of universals, nevertheless, is the denial of permitting them in our ontology at all. Nominalism is well known as the theory that rejects the existence and the reality of universals calling them ‘flatus vocis’ (no more than words). However, many different theories are called ‘Nominalism’, and Peirce had a very technical sense for the concept. Therefore, it is important to specify where to place the types of nominalism we will be concerned with.

First of all and attending to the history of philosophy, nominalism was traditionally initiated by the medieval philosopher Roscellinus (c. 1050-c.1125) but more famously defended by another Franciscan philosopher disciple of Scotus: William of Ockham (c. 1287-1347). Ockham defended a version of nominalism called ‘Conceptualism’. Let the following list offer a brief classification of the nominalist alternatives available in history ranging from the medieval philosophy up to contemporary ontology. All the following versions of nominalism are kinds of nominalism that denies the reality of universals. As the different nominalist and conceptualist theories are surveyed, it is also observed that there are some ontological commitments assumed:

* 1. Predicate Nominalism: this strategy gives an account of what makes a single individual, say, for example a book *x,* having the property *F* of being blueor *G* of being thick*. Fx* or *Gx* are true for x if there are two cases in which the predicate *F* or *G* can be truly said of *x.* Thus, if my book is both blue and thick*.* If another individual, say, a jacket *y*, holds the same quality *F* or *G* the predicate nominalist accounts for the commonality in nature by reference only to the individuals, in this case *Fx* or *Gx* and another linguistic expressions containing that predicate. On this view, all that exists are individuals and words for talking about those individuals. As elegant and sophisticated predicate nominalism might seem, it blatantly ignores the problem in the case when language needs the fact of a real commonality between those individuals. When it comes to explain the facts or grounds explaining why something is common to another, then the predicate nominalism goes no further.
	2. Resemblance nominalism: this strategy is based on collecting individuals into sets based on resemblance relations. The theory accounts for qualitative identity and resemblance by appeal to commonalities of set membership. Consider, for example, the sets of birds that coincidentally seem to have the same members of the set of animals with a beak: allegedly, the same members for the two sets are shared. Therefore, for a defender of ‘resemblance nominalism’, if the property is nothing but the set we are compelled to say that the property of being a bird is one at the same property of having a beak. This, nonetheless, is false: having a beak does not mean the same as being a bird; not because birds do not have beaks but because these two properties are different due to their different definitions: the beak is a characteristic based in physiognomy and appearance; while, “being a bird” is based in deeper biological considerations as, for example, having certain common genetic features. Alternatively it could be said that the alleged set itself is not the ground of the property, but the relation of ‘resemblance’. This will yield at least one universal. Nevertheless, it is clear that resemblance can be said of different levels and sorts, and that would imply that the one universal has many versions. Now, this is nothing but another theory of universals that identifies them as ‘resemblances’. Thereby, resemblance nominalism is problematic.
	3. Trope Nominalism: Trope theory can be understood as a strategy of making properties into particulars. Tropes are individuals. While ordinary individuals are qualitatively complex, tropes are simple and a particular property instances. Ordinary individual objects are, then, considered as having collections or bundles of tropes. Tropes, nonetheless, fail to explain generality even amongst them, having, as they do, degrees of resemblance between themselves. The problem given in the tropes own resemblances can, however, be left aside. It can be said that a resemblance trope is yet another trope. This, nonetheless, does not quite explain the problem of similarity because it seems to avoid the problem at different levels each time: the risk is that we have a case of the “third man” problem: tropes cannot explain the similarity by another trope because that will suppose a regress to infinite. When there is a situation in which there is either vagueness or finesse of grain involved. Thus, for example, an object with a spectrum of colours has to be explained in an infinite number of tropes where each colour is particularised. However, the bigger complication to be seen in trope theory is relative to its heuristic power: it seems too thin and insufficient if we wanted to make sense of the operations we do when we carry scientific inquiry. Had we used trope theory to explain scientific problems we would have been left without prediction, grounds for induction and a lack of explanation of nomological or law-like behaviour.
	4. Conceptualism: conceptualists claim that the property of resemblance is not a feature of reality, but of our minds and the conceptions and ideas we use. Accordingly, individuals *x* and *y* are similar because the same concept applies to both, namely, a general concept. This seems a neat and tidy solution: we clearly think in universals as concepts in our minds, hence the theory confirms our initial assumption. However, the problem comes to the surface again and again in asking how the concepts in our mind seem to match the reality outside our minds. It can be said that there is continuity between our minds and the world, but the theory seems to restrain a private character to the concept of mind. Hereby, it preserves disbelief about the non-purely conceptual reality of the universal. The conceptualist seems to be teetering between nominalism and realism. The conceptualist nominalist maintains a realist position that can be expressed in various ways by using the jargon and method of the realist. When the conceptualist is asked about the reality of the universals she swings back to nominalism. This position, therefore, seems problematic as well as untenable.

The previous classification of nominalism might come across as a hasty dismissal of nominalism of universals. The reader will see more arguments for and against nominalism along the different chapters of this dissertation. For now, however, it can be argued that the presented views are general ways of understanding how a nominalist response can align to one or another strategy to deny the reality of universals. Peirce’s analysis of nominalism, to be approached in the successive chapters, will provide us a gist in what seems to be common to all versions of nominalism of universals. Peirce proposed an explanation as to why we ought to reject any nominalistic tendency.

## Why Peirce was interested in the problem of universals?

Peirce noted that the problem of universals was treated in a rather dichotomist fashion: it is often presented as clash between metaphysical realism (that is often conceived as Platonistic realism) and nominalism. Peirce was convinced that the problem of universals is decisive and important. He said that the problem is “as pressing today as ever it was” (CP 4.1). An adequate treatment and a solution to the problem, consequently, cannot come from the traditional formulation of the problem as a dichotomy between Platonism and Nominalism. Peirce, on the contrary, believed that:

The current explanations of the realist-nominalist controversy are equally false and unintelligible (CP 8.12, 1871).

Peirce, effectively, stated his disapproval to the traditional interpretation of universals. This interpretation considers that the problem of universals is about ‘Platonic ideas.’ For Peirce this interpretation is opinionated and results from a crass misunderstanding:

[I]t must not be imagined that any notable realist of the thirteenth or fourteenth century took the ground that any “universal” was what we in English should call a ‘thing’, as it seems, that at an earlier age, some realists and some nominalists too, had done […] their very definition of a ‘universal’, admits that it is of the same generic nature as a word, namely, is: ‘Quod natum optum est *predicari* de pluribus.’ Neither was it their doctrine that any ‘universal’ *itself* is real. They might indeed, some of them, think so; but their realism did not consist in *that* opinion, but in holding that what the word *signifies*, in contradistinction to what it can be truly said of, is real. Anybody may happen to opine that ‘the’ is a real English word; but that will not constitute him a realist. But if he thinks that, whether the word ‘hard’ itself be real or not, the property, the character, the predicate, *hardness,* is not invented by men, as the word is, but is really and truly in the hard things and is one in them all, as a description of habit, disposition, or behavior, *then*, he is a realist. (CP 1.27, 1871 n.1)

From the quotation above should be noted that Peirce accepted that the universal is a word as well as a reality. On this issue, he said, the nominalist is not altogether mistaken:

The nominalists say it is a *mere* name. Strike out the ‘mere’ and this opinion is approximately true (CP 3.460).

The problem at stake, thence, lies in what effectively gives the universal character to some particular word, for the word to be meaningful as a sign. Peirce expressed this as what gives the “*fundamentum universalitatis”*(CP 6.377). The problem correctly formulated, as we will review in Chapter Two, is:

The real is that which is not whatever we may happen to think it, but is unaffected by what we may think of it. The question therefore, is whether a *man*, *horse*, and other names of natural classes, correspond with anything which all men, or all horses, really have in common, independent of our thought, or whether these classes are constituted simply by a likeness in the way in which our minds are affected by individual objects which have in themselves no resemblance or relationship whatsoever (CP 8.12, 1871).

I shall analyse this same quote in another chapter and explain the theory of reality that it establishes. From this text, though, we are able to identify some elements of what Peirce recognised as the genuine problem of universals based in resemblance and commonality. Moreover, Peirce even believed that Platonism was a nominalist viewpoint, as I shall explain in another chapter clarifying the nature of such a bewildering claim. The ‘nominalistic Platonism’ consists in conceiving the existence as:

[I]ndependent of all relation to the mind’s conception of it (CP 8.13).

A true realist, thence, would be not somebody who believes in existent universals as actual things, but:

In fact, a realist is simply one who knows more recondite reality that which is represented in a true representation. Since, therefore, the word ‘’man’ is true of something, that which ‘man’ means is real. The nominalists must admit that man is truly applicable to something; but he believes that there is beneath this thing in itself, an incognizable reality (CP. 8.13).

In order to be a realist, therefore, one has to make a decisive step against the nominalist prejudice reflected in the abovementioned dichotomy. In this process it is important to:

[G]et rid […] of the Ockhamistic prejudice of political partizenship that in thought, in being, and in development, the indefinite is due to a degeneration from a primary state of perfect definiteness. The truth is rather on the side of the scholastic realists that the unsettled is the primal state, and that definiteness and determinateness, the two poles of settledness, are, in the large, approximations, developmentally, epistemologically, and metaphysically (CP 6.348).

The rejection of nominalism is more than a recommended way of conduct ourselves should we wanted to be in the correct path. For Peirce, the pragmatist, predominantly:

…will be the most open-minded of all men (CP 5.499, 1909)

Consequently, there is a duty to reject nominalism as a “philistine line of thought” (CP 1.383, 1890). Nominalism is said to be:

…the dreary outlook upon a world in which all that can be loved, or admired, or understood, is figment (SS: 118, 1909).

Forster (2012, 2) reminds us that much of Peirce’s antipathy against nominalism derives from his views about science:

[S]cience has always being at the heart realistic, and must always be so (CP 1.20 1903).

Peirce drew this scientific realism from the sympathy he had to his colleague Francis Abbot. Abbot defended the realist attitude in science in his writings about theological realism. Peirce, furthermore, also was a practising scientist that realised observations based on fallible hypothesis, these could not have been meaningful without a realist combination of expectation, experimentation, and prediction. Quite opposite to realism, the nominalist mind-set (as Peirce conceived it) created a worldview that affects science with disastrous consequences:

It is not modern philosophers only who are nominalists. The nominalistic *Weltanschaaung* has become incorporated into what I will venture to call the very flesh and blood of the average modern mind (CP 5.61, 1903).

The pragmatist, as an open-minded individual, rejects nominalism. Resistance to nominalism in such a manner implies doing science, but most of all, establishing a different *Weltanschaaung* that, as we will see in the last chapter of this study, constitutes what Peirce called ‘Scientific Metaphysics’. By advising the pragmatist to opt for a realist stance, Peirce provided what nominalism otherwise blocked: an ultimate and impartial basis for the organisation of scientific inquiry carried out by a selfish-less community.

## Peirce and Scotus

After having a study in Peirce’s production, there is no doubt that Peirce credited Duns Scotus for articulating a realism that improved the other available options in the history of philosophy. For Peirce, Scotus’ realism is the best mean available to fight against science’s foe, i.e., nominalism. However, not all the scholars are convinced that Peirce’s version or Realism is actually as close as Scotus’ as Peirce thought it to be. I shall defuse these doubts, as I will spell out reasons to believe that Peirce’s Scholastic Realism it is actually faithful to the spirit, buy not necessarily the letter, of Scotus’ realism. Indeed, the most important Scotistic doctrines are present in Peirce’s thought: they all gravitate around Scotus’ theory of reality in the first place, and they descend to his realistic theory of universals in a second place[[7]](#footnote-7).

A very strong point of agreement between both philosophers, thence, is a basic but important distinction: reality and existence are not coextensive and thus, they should not be identified. This is a crucial distinction for understanding what Peirce’s realism is about. The grounds of this claim are different in Scotus and in Peirce, but still convergent. Scotus suggested that reality is to be defined in these terms: what is a necessary condition for the intellect in order to grasp the essence of a thing. Peirce adopted Scotus’ definition in what he named ‘the Scotistic definition of Reality’ based in mind-independence (as argued below in Chapter Two and Three). The ‘Scotistic definition’ can be formulated this way: whatever is independent of idiosyncratic opinions and emerges from the different universes of experience shared by a community guided by norms of inquiry is to be considered ‘real’. Now, Peirce’s contribution to Scotus’ Aristotelian account lies in the amplitude of his comprehension of experience. Peirce’s account is broader in scope and ranges beyond the traditional metaphysics of Scotus’ theory. This account is to be found in the context of a theory of categories as well as the architectonic philosophy: Peirce regards categories as real. Existence, however, is a predicate reserved to the category of Secondness, where the actuality and resistance of facts comes to matter.

Peirce considered that questions about reality are of utmost importance for philosophy. His formulation of these questions varies. For Peirce, the classical responses to these questions are extreme and should, thus, be excluded: On the one hand, nominalism should be rejected because it affirms that the structures of reality exist only in the mind as concepts. These concepts ultimately access some impenetrable things-in-themselves, and thus, we cannot account or theorise about them without overcome scepticism. That leaves the philosophical problem unresolved in a dichotomy of mind and world barred of scepticism. On the other hand, Platonism should be rejected because affirms that the structures of reality exist in the same way that the facts that instantiate them. This is unacceptable due to the empirical evidence: if, for example, ‘whiteness’ is also a white thing then the concept fails to explain a shared property. Peirce approached the issue by first noting that only Scotus did the necessary distinctions to give a sensible response to the problem: Scotus approached this issue by first noting that anything which exists outside the mind also exists within the mind simply by being known. The opposite is not true, however. Something that exists within the mind does not necessarily exist outside the mind. Something, which exists outside the mind, is a real being (*ens reale*) while something that exists only in the mind is a being of reason (*ens rationis*). Suppose that I have a dream about myself running through some trees into an open field: the trees in my dream are figments of my imagination, but they are composed of features that make them common to real trees. There is, therefore, a real concept necessary for them to be ‘unreal trees’. How, nonetheless, will I be able to tell whether a concept is real and independent of the figments of my imagination? Scotus thought that there must be an objective intelligible structure shared there: what he called the ‘common nature’. When the common nature is instantiated as a being of reason it is called a ‘universal’ (still being real). When the intelligible structure is instantiated, there a fact (existence) occurs: existence is the ‘contraction’ of the common nature and the haecceity of the thing that is unique to that thing. Therefore the thing at stake has one single mode of being as ‘existence’. In consequence, Peirce and Scotus shared the conviction that reality is not coextensive with existence, as reality can be said in different ways or ‘modes’.

For Peirce, Scotus made clear that the mind ‘discovers’ universals; it does not ‘create’ them. This level of Peirce’s realistic doctrine is another important point of agreement between the two philosophers: both share the doctrine of universals as a doctrine of ‘real common natures’ in Scotus and as a doctrine of ‘real generals’ in Peirce. I will review each in turn in further chapters of this thesis. Peirce did not fully agree with Scotus in all respects, he rejected his theory of contraction: he found him too moderate and because of that, dangerously close to nominalism. For Peirce, in contrast with Scotus, real universality must not only be indeterminate in respect to the mind, it can also be indeterminate and vague *in re*. This means that universality can be real even if not contracted in an individual haecceity, moreover, even as a ‘real possibility’. Peirce denied the Scotistic theory of contraction in individuality. He instead provided a theory of Categories able to deal with the problem of instantiation in a better and less problematic way. This will be shown below. Peirce, thus, judged Scotus as regrettably close to nominalism in his theory of contraction:

Even Duns Scotus is too nominalistic when he says that universals are contracted to the mode of individuality in singulars, meaning, as he does, by singulars ordinary existing things. The pragmatist cannot admit that (CP 8.208; 1905).

Consequently, what is it stake is how to find a plausible solution to make sense of the reality of universals, one without the risk of reducing them to individuals. Unjustified reduction to individuality is typically a nominalistic move. I will explain that this objection to Scotus’ realism should be reconsidered on the basis of Peirce’s realism about Categories in Chapter Four. In Chapter Four it will become clear that the relationship between Scotus and Peirce is even closer than Peirce himself thought.

## Peirce’s Interest in Universals: Scholastic Realism

Without getting far ahead in the details of Peirce’s development, let me start approaching the meaning of what Peirce christened ‘Scholastic Realism’. Scholastic Realism is a doctrine about reality, not only about universals, as shown below. The core of the doctrine is a plural theory of reality: this theory allows the reality of Universals or Generals, as Peirce called them. Influenced by Francis Abbot, Peirce believed that Scholastic Realism is a necessary hallmark of well-conducted scientific research:

Science has been always at the heart realistic, and always must be so (CP 1.20).

Moreover, Peirce’s more famous theory of pragmatism requires the acceptance of Scholastic Realism as a premise, as will be argued in the last chapter of this study:

Pragmaticism could hardly entered a head that was not already convinced that there are real generals (CP 5.503).

John Boler believed that there are reasons to accept that Peirce’s account of reality as the object of the final opinion is close to Scotus’:

…Peirce and Scotus agree that nature or law must be an intelligibility that is real and objective. Scotus defined a formality as what can be correctly conceived of an object but is real before the operation of the intellect. Peirce’s definition of reality seems to me to be nearly a pragmatic reformulation of Scotus’ realitas or formalitas: reality is what would be thought in the ultimate opinion of the community (Boler 1967, 128).

This Scotism in Peirce, however, falls short in what was Scotus’ main contribution: the formal distinction based on different modes of reality and of unity. Peirce’s mature Scholastic Realism, though, finally captured Scotus’ formal distinction and solution to universals in the Category of ‘Thirdness’. It should be noticed that I disagree with the traditional Peircean scholarship, and with John Boler (1967) on this. The Category of Thirdness converges with Scotus’ metaphysics in several respects:

-          Peirce defined Thirdness as ‘mediation’: mediation refers to the commonness between things: a shared property mediates by giving unity across individuals. Cognition requires conceiving things in a unified kind sometimes and, when this is the case, mediations are fundamental. These forms of Thirdness are a mode of being real in the Scotistic sense.

-          Peirce’s mature concept of continuity (Synechism) converged with Scotus’ theory of different kinds of unity beyond numerical properties. Thus, for example, properties of intelligible structures are general and vague in terms of numerical unity but not in terms of common unity. Peirce, in his later years, wrote:

I use [Thirdness] as the name of that element of the phenomenon which is predominate wherever Mediation is predominant, and which reaches its fullness in Representation. Continuity represents Thirdness almost to perfection (CP 3, 422).

Peirce seemingly summarised his developments. I argue that instead of moving away from Scotus he rather came to defend doctrines that were closer to Scotus’ subtlety and terminology. It remains to be explained, therefore, why Peirce was reluctant to accept that the contraction was the ultimate metaphysical unity, as mentioned above. For Peirce, the individual has a mode of being less ‘real’ than the generals. This is deduced in virtue of the priority that continuity holds over the instantiations. In further chapters it will be noted how he demonstrated this by his ‘Cambridge Experiment’, in which the concept of ‘prediction’ and real ‘would be’s’ were introduced. In addition, John Boler formulates the conflict of Peirce and Scotus in these words:

The schoolmen maintained that a nature cannot be identified with any actual individual or collection of individuals. Peirce wants to show that the reality of a continuum cannot be reduced to any actuality or collection of actualities *(*Boler, 1967, 127*)*.

Therefore, probably the main reason Peirce thought of himself as an extreme realist of universals, as opposed to Scotus, is because he gave priority to the mode of being of generality: Thirdness over Secondness. Peirce’s doctrine, nevertheless, remains in the Aristotelism of Scotus. Peirce’s doctrine goes much further than the initial Aristotelian categories by introducing a system of categories backed up by phenomenology, logic of relations and semiotics. Scotus did not have these doctrines to support similar theories indeed. However, I believe, that the conflict between the two philosophers is not as drastic as it has been presented by Boler: Peirce did not deny contraction, he actually stressed that in the universes of experience the reality of universals is necessary to understand the individuals. Individuals and Secondness are extremely important, however, because they re-present, as it were, the actuality of the generals. Perhaps Peirce is closer than Scotus than what he actually thought, and the influence of the latter in the former can be traced not only on what Peirce overly said about Scotus’ influence on him. I argue that the influence should also be traced in the ideas of Scotistic background. This is certainly unprecedented in Peirce’s scholarship. In the chapter devoted to the modes of being it will be seen how Scotus’ formal distinction is adopted, accepted, and developed by Peirce in his Architectonic System.

I must finally conclude this chapter pointing out that the problem of universals is a living tradition that has never actually left the philosophical arena. The controversy started in the classic philosophers of antiquity and was greatly developed by the medieval scholars. Peirce, however, was the only philosopher that addressed the crucial place of the problem in a straight relationship with the development of a philosophy providing a theory of inquiry and meaning. Peirce’s consideration of the problem gave sense of how Science is possible by addressing the problem of universals. Should we care, after all, about the problem of universals? The answer will be affirmative: we certainly need to care about the problem of universals. Any question of the same kind would be justified if and only if we take seriously the fact that a question about generality is even possible.

In subsequent chapters I will present Peirce’s development towards an ever-more detailed doctrine of Scholastic Realism. The presentation will revisit Scotus’ ideas from time to time. The convergence between the two philosophers will thus appear argued in a complete and systematic manner. Subsequent chapters will also face different kinds of criticisms addressed to Peirce and his Scholastic Realism. This shall finally show that the doctrine can stand the criticisms even from fairly contemporary approaches hostile to realism. Therefore, I shall keep insisting on paying attention to the problem of universals if we want to find Peirce’s doctrine tenable and consistent with his scientific realism. This, in Peirce’s mind, renders scientific inquiry as rational endeavour in the background of a supporting metaphysics.

# Chapter 2. Peirce’s Early Scholastic Realism and its Development

In the previous chapter I fleshed out reasons for why we should care about the problem of universals at all. That first approach raised the question on how the problem is relevant to make a realist stance for science minding its practice and its objects of investigation. In this chapter I will address the early work of Charles Sanders Peirce. The analysis will explain and evaluate distinctive views about reality by showing how realism can be understood at this stage and how the problem of universals entered Peirce’s concerns. Indeed, throughout his philosophical career, Peirce figured out improvements on the understanding of reality, and moreover, he forged a renewed vision of the whole problem and its proper articulation. This task was identical, in Peirce’s mind, to unveiling the inconsistency and systematic blunders of the rival nominalistic approach. Peirce, however, took several years to work out a theory of reality and, thus, it is needed a clarification on the development of his views. This is the conclusion reached by Max Fisch, a connoted scholar of Peirce. Fisch was concerned to trace “Peirce’s Progress from Nominalism towards Realism”, both in an essay with that name (Ketner and Kloesel, 1986: 184-200) and in his introduction to Volume Two of the Chronological Edition of Peirce’s writings (W2: xxi-xxxv). Fisch argued that over the course of Peirce’s life, his philosophical views became increasingly more inclined to realism from an initial nominalistic position. Although Fisch did not say explicitly that the early Peirce denied the reality of generals, his emphasis on the passages quoted above leads to believe that he considered Peirce as an anti-realist about generals. According to Fisch, Peirce accepted universals only provisionally, and in the context of a logical conception of reality. In this chapter I will examine carefully Peirce’s early position and, with particular attention, Peirce’s strategy against nominalism. Peirce regarded nominalism as a “demonic doctrine” of the “most superficial men” (W2: 239, 1868). He attacked vehemently all the nominalistic systems he could identify in the history of philosophy and endeavour to reveal many of their hidden consequences against both science and morality. In this chapter I will explain why Peirce believed that nominalism is closer to Platonism than to Scholastic Realism. Consequently, I shall discard in a definite manner that Peirce realism is Platonism of eternal and perfect forms and thereby reveal what is the true nature of the debate. Peirce argued that nominalism invokes a realm of mysterious objects to make sense of mind-independence. A careful reading of the articles of the *Journal of Speculative Philosophy Series* of 1868-9 reveals that those mysterious items are taken to be intuitions of a kind. The nominalist, in Peirce’s discussion, theorises about intuitions trying to guarantee mind-independence and hereby justify cognition on a foundational ground. The task of the series of papers Peirce wrote in this period was to systematically undermine the claims of the nominalist; who turns out to be a kind of Platonist. The *Journal of Speculative Philosophy* series attacks Cartesianism and Cartesian assumptions as forms of Platonistic nominalism.

## The Critique of Intuitions in the *Journal of Speculative Philosophy* Series

Peirce’s earliest philosophical works are the articles of this series. There are other important early works, as for example, his 1867 paper ‘On a New List of Categories’. I will, however, reserve a place for that paper in the treatment on the realism of Categories in Chapter Four below. There are three articles comprising the *Journal of Speculative Philosophy Series* (JSP)*,* they appeared in the following order:

* *Questions Concerning Certain Faculties Claimed for Man* of 1868 (henceforth *Questions*), in which Peirce attacked all the philosophical strategies that defend a Cartesian concept of intuition, especially the more detailed strategies extracted from a Kantian approach to intuition.
* *Consequences of Four Incapacities* of 1868 (henceforth *Consequences*) in which Peirce pinpointed the incapacities that are product of Cartesian assumptions of intuitions. He provided an explanation of how these incapacities conduce to a nominalistic approach to reality. The nominalistic approach will appear mistaken in its more basic premises. In addition, this essay sets some principles for the opposite doctrine to nominalism: Scholastic Realism.
* *Grounds of the Validity of the Laws of Logic* or *More Consequences of Four Incapacities* of 1869 (henceforth *Further Consequences*). In this article Peirce derived further consequences of the incapacities of Cartesian philosophy that make nominalism unacceptable. Peirce stressed the attention in the principles of logic. The paper was meant to be called ‘Search for a Method’ and defended the objectivity of the norms of logic. The paper also showed the first reference to some logical principles that will eventually become germinal ideas about Peirce’s clarifications of truth and his logic of relatives.

The first of the three articles of the JSP cognition Series attempts to describe and evaluate some of the assumptions of Cartesian approaches to philosophy. The paper began by presenting some of the positive views that Peirce wants to make us aware of. These include the introduction of the views later called ‘Synechism’. Synechism involves the claim that the concept of continuity is of great importance in Philosophy[[8]](#footnote-8). Another further concern that motivated Peirce to write this article was to make clear in what grounds lays the absurdity of individualism and egoism. Unsurprisingly, he read both vices as features of nominalism.

It is needed to understand what Peirce’s strategy was: Peirce employed a distinctive strategy in this paper, a negative route, by adopting a dialectic technique from Scholastic philosophy known as ‘Questiones Disputatae’[[9]](#footnote-9). This strategy involves a procedure of asking and answering questions. We need to understand, thus, why he employs this strategy. We also need to understand the relevance of the questions that he raised and the answers to them that henceforth became crucial in the development of his realism.

In order to explore the different aspects of Peirce’s account, the following sections examine some of Peirce’s earlier writings in these topics: first, in his writings from 1868 in the *Journal of Speculative Philosophy* series and, second, in his writings from the late 1870s found in a series called *Illustrations of the Logic of Science.* For the second series, though, I will devote a different chapter, which will involve identify its relevance in the development of the theory of reality. In between the decades of these writings there is a peculiar kind of manifesto for realism. This manifesto is found in a rather odd place: a book review. However, this work is crucially relevant for this discussion: it is a Review on the works of Bishop George Berkeley that appeared in 1871. I shall explain how in each part of this review issues about reality and realism became important for him and what he had to say about the conception of reality he thence definitely adopted. I will firstly explain, nonetheless, that Peirce considered the doctrines of Cartesianism, Nominalism and Scepticism as three closely related flawed views. Thus, the criticisms of Cartesianism are complemented by those of Nominalism. There is also a strong connection with the criticisms of a vicious kind of scepticism. As far as I can see, Peirce’s strategy rested on the assumption that both Cartesianism and nominalism require there to be intuitions. This implies that Peirce’s arguments conclude that there can be no intuitions of the Cartesian kind. The rejection of intuitions began in the articles of the *Journal of Speculative Philosophy Series,* as said above, but culminated in the mentioned review (henceforth *Berkeley Review*). From the publication of this review onwards, the theory of reality and the definition of reality involved were assumed as key elements of the theories of truth, inquiry and pragmatism of the later years. By reviewing each of these questions we will be able to understand the relevance of the argumentative process of Peirce’s early account. Although it might turn out to be a long review of the questions, the reader’s patience should abide in the promise that it will be clarified how the method of asking the right questions reveals the problematic character of the Cartesian tradition. Now, let us follow Peirce’s argumentation in the first of the JSP papers: *Questions*. I will carry on with a detailed comment in some of the relevant points presented aiming to identify what the nominalistic theory of reality is arguing for as well as what perspectives and problems are opened for the realist theory of reality:

QUESTION 1: *Whether by the simple contemplation of a cognition, independently of any previous knowledge and without reasoning from signs, we are enabled rightly to judge whether that cognition has been determined by a previous cognition or whether it refers immediately to its object.* (EP1: 11)

The paper ‘*Questions*’ is a piece of analysis on cognition and the role of intuitions in cognition. The result of its inquiry is a negative response to intuitions, as reviewed below. There are other topics covered here, mainly germinal work on the theory of signs and their relation with objects; Peirce also addressed the role of signs as predicates about generality. It will be seen that the role of signs is important as an alternative theory of reality against nominalism. Now let us consider the general notion of intuition as Peirce describes it:

The term ‘intuition’ is taken as signifying a cognition not determined by a previous cognition of the same object, and therefore so determined by something out of the consciousness (EP1: 11).

There is a second definition that partly expresses the same thought: ‘premise not itself a conclusion’ (EP1: 12). The second definition is only ‘nearly right’, according to Peirce. This is because there might be kinds of cognitions, as, for example, sensations, which are not propositional and thus cannot serve as premises. They, however, still can be intuitions. This specific conception of intuition explains why Peirce distinguished ‘intuition’ from ‘judgment’. Peirce was influenced by the use of this concept in Kant’s philosophy. A judgment is always propositional and, according to Kant, it always involves a conclusion. (The *Transcendental Analytic* contains the *Analytic of Concepts* and the *Analytic of Principles.* The former is the one that fleshes out the properties of judgments).

The reason for adopting this definition of intuition is the idea that intuitions are directly determined by the ‘transcendental object’ in a Kantian sense; i.e., something that corresponds to each intuition but is somehow ultimately incognizable. Peirce emphasised that to have an intuition and “to know intuitively that (it) is an intuition” (EP1: 12) are different states. Thus, he explained that if thought relies in intuitions then it is recursive, and therefore, circular. I will not delve in this issue yet, but suffice to point out that if the faculty of knowing intuitively intuitions does exist, there should be some evidence for it, as Peirce explained. However, the following arguments are cast as downright negations of the possibility of such faculty to exist. Thereby, if the answer to the question: “Are there intuitions?” can demonstrate that an intuition of a cognition cannot be identified intuitively, then the question “How can we find out if there are intuitions?” it is going to be an empirical psychological question. Consequently, the way to answer should be by means of psychology, i.e., empirical a posteriori inquiry. Some of the evidence Peirce uses against that concept of intuition can be observed in the following points:

* We experience that our cognitions are usually accompanied by feelings regular to them, as for example, our awareness of them. Therefore, cases of these include the testimony of “feeling as if” I am awake when I am awake, of knowing I am moving when I am walking, etc. These testimonies depend on the power of distinguishing that feeling from others that are results of education, association, etc. According to Peirce (EP1: 16-7), this kind of testimony is evidence proof as it is any other feeling whatsoever. Those feelings, nonetheless, are not infallible, they are usually not essential to the activities which they accompany. In historical hindsight, just as the authority was considered infallible in the Middle Ages, the advocate of intuitions, according to Peirce, builds the concept ‘feeling of an intuition’ in the same dogmatic grounds: a cognition not determined by a previous cognition is still foundational upon the authority of the directness of an alleged feeling. Peirce explained that educated people have and always had grounds to doubt both authority and intuition. Lawyers, for instance, know that witnesses usually cannot distinguish between what they have seen and what they have inferred. Illusionists exploit what we take for granted in our observation (fruit of inference). The faculty to recognise intuitively does not seem to work with dreams, which are seemingly like actual experiences; yet dreams are clearly determined by previous cognitions. Language in children seems to complicate an account of intuitions too: A child asked about language might respond that she always knew the language. We know for this case, however, that it was a process steadily achieved, so the child cannot *really* report how she learned the mother tongue based in her feeling of proficiency.
* I shall finish the list of examples by taking into account two intuitions that are esteemed particularly important after the writings of Kant: Space and Time (EP1: 16-7). Regarding the concept of space, the perception of three-dimensionality is fruit of an inference, as opposed to a given state identifiable as straightforwardly intuitive and particular. Space, although always accepted intuitively, is an a posteriori achievement of our ability to think dimensions. When we try to understand a world of two dimensions, for example, the knowledge of the process casts out the discovery if we reason in it. The feeling is just supposed. Another calling example of Peirce is the blind spot of the retina: we do not realise it because we complete a process of inference to complete the visual field. Finally, last but not least, the retina is composed of needles pointing towards light; this implies that the conditions even for two-dimensional spaces and their distances define a colored surface via the parallax effect. This supposes, hereby, two eyes and challenges intuitions of space. Now, with regards to the concept of time the question is: Why time cannot be an intuition? In the same way that two-dimensional derivation of space proves that space is not an intuition, we either have not immediate feeling of duration in an instant: the feeling of duration is derived from the continuous of our experience in time. Complexity, therefore, is reducible to mediate simplicity by means of the conception of time.

These arguments are set against the idea of a faculty of distinguishing from mediate cognitions by intuition. Although apparently is addressed against Kant, Peirce cares to explain it is not, but against an interpretation of Kantian intuitions.

The question introduced above should be more precise: “Are there fundamental and underived intuitions?” This question is answered negatively: the fact of having feelings of immediacy about beliefs should be of no value in appraising them as underived and fundamental[[10]](#footnote-10).

Consequently, Peirce thought that there are not simple straightforward ideas copying objects from the world. This denies ideas not mediated by signs and being themselves mental copies of the objects. The following question to be formulated in the quest for empirical inquiry on intuitions is showing if they are necessary and practically good to solve the problems they are supposed to bridge. Peirce answered this question negatively too. Of course, this ought not to be a denial that intuitions do exist, but of their foundational character. Thence, the falsity of the foundational account based in these kinds of intuitions is clear when we understand that all our beliefs are related to cognitions that mediate them. In Addition, a final example on this in the idea of movement (that involves both space and time) might clarify Peirce’s aims: if the movement of an object *o* from point A to B were determined by a set of individual discrete impressions in a trajectory *T* then there is a composition of fundamental components of distance. This is a response based in our intuition that a line is a collection of points. If we accept that fundamental intuition we will be, therefore, trapped in the Achilles paradox: isolated points do not explain the continuity in distance: points are a-dimensional and thus divisible *ad infinitum*. The philosophical complication in this example consists in thinking on the continuity as a number of discrete points/instants corresponding to a foundational cognition. Each point or instant needs a foundational cognition if this is the case. Now, it might be objected that there are feelings of immediacy about single impressions. In response to that we can say with Peirce that although these feelings seem elementary, they still are the outcome of a process of inference that individualizes whatever is part of a continuous. Peirce’s conclusion was a definitive rejection on the understanding of the feelings of immediacy as elementary:

Hence, no one of these elementary feelings is an immediate feeling of duration; and, hence the sum of all is not (EP1: 17).

To clarify this further, what is at stake on the meaning of ‘feeling’ here is unrelated with that of ‘emotion’. Peirce was loyal to Kant’s lines in these, trying to explain mental events as ‘individual representations’.

The use of the term ‘feelings’ bears a particular connotation of perceiving oneself perceiving a process: in the philosophical jargon ‘apperception’ accounts for this specific feeling. Now, this idea is not only considering ‘apperception’ as a feeling, but claiming that the feeling constitutes the grounds for the process: the feeling *confirms it.* Thereby, we can actually conclude that we will not find an intuition of such kind if we seek for a faculty of intuitions by the mere feeling of something being intuitively evident. We do not have intuitions of what is intuitively evident; hence, there is no ‘intuitively evident’ cognition of cognition.

QUESTION 2. *Whether we have an intuitive self-consciousness* (EP 1: 18)

The second question in Peirce’s paper asks if we have an intuitive self-consciousness, as opposed to a derivate faculty of awareness of ourselves. Perhaps, if we do not have the faculty of intuition, as it was concluded in the answer to the first question, but our intuitive ‘ego’, then there are grounds to say that there is a pristine element immediate and truly intuitively foundational belief about ourselves. This is probably the core of the Cartesian deduction of the ‘ego’ by the *Cogito* argument, where the ‘ego’ works as the foundational intuition.

What Peirce meant by intuitive self-consciousness? Peirce required not mistaking the concept of an intuitive ‘self-consciousness’. The concept is identified neither with consciousness in general, nor the internal sense, nor the awareness of pure apperception. Intuitive self-consciousness means:

Any cognition is a consciousness of the object as represented; by self-consciousness is meant a knowledge of ourselves (EP1: 18).

I shall focus now in the recognition of my ‘private’ self: can it actually be intuitive? If it turns out that it can, then we have evidence for a faculty of recognising all the other intuitions. We have, however, a bulk of evidence against that claim: if we inquire into the children’s behaviour, we will find powers of thought and inference. For the case of self-awareness, however, we witness that its rate grows only by interaction with other members of the community. Moreover, it is quite clear children do not think of themselves as hearing, acting, moving, etc., as they behave consciously. Children rather think first in the objects of these activities and behave accordingly. Self-awareness, hereby, is the result of a complex process of inference. Peirce attacked the supposition that children think primarily of themselves as self-aware. For him, this supposition is baseless and arbitrary. Consequently, it is clearly through language, by conversation, that a child represents his body in front of the others, as central. Testimony is, thus, the first dawning of self-consciousness. This conception of testimony is necessary for the possibility of ascribing ignorance in the subject of mistakes. Error appears and is explained by supposing a self that is fallible. The conception of error is fruit of inferential practices in a community. Yet, there is another possible argument provided by the advocate of intuitions. This is formulated in terms of ‘private self-awareness.’ It could be spelt in these premises:

1. We are more certain of our existence than of any other fact
2. Hence, our own existence cannot have been inferred from any other fact.

Premise (a) might be right, but (b) turns out blatantly false if experience is supported by ‘every other fact’. Then, obviously, an experience is more certain as it is more steadily compared with other facts. The meaning of ‘private self’ and the consciousness of the self, whatever the self as a cognition turns out to be, it is that the self is not composed of particular impressions. If we inquire into all particular cognitions that ground the self, we will not find a particular singular cognition having priority over the other. I will clarify this further with an example. Consider the image of a man: is it the image of a man with the hands rising more basic than the one in which is not raised? Is it the image of a man with the mouth open more basic/foundational than the image with the mouth shut? The answer will be that surely it is not, because neither of these impressions acts as foundational towards the other. The conception of an object of knowledge, whatever that is, ought to have some amount of vagueness and generality that allows conceiving the object in distinct scenarios. To conclude, thus, the argument, this notion of intuition based in a ‘private self’ supposes that being mind-independent means to be foundational.

QUESTION 3 *Whether we have an intuitive power of distinguishing between the subjective elements of different kinds of cognitions.* (EP1: 21)

I start commenting this question by introducing a distinction between cognition and representation. First, we have cognitions and we have representations of cognitions. Cognitions are contents, while our representations of cognitions comprise attitudes towards those cognitions. Secondly, consider our cognitions of objects: they are *about* objects though not by mirroring particular states of the objects they represent. As explained above, they do have a kind of vagueness opposed to a concrete particular state of the object. The vagueness alluded here should not be confused as ambiguity. Quite the opposite, vagueness is based on the idea of a continuous and multiply connected process of cognition. A content of a particular cognition, even if vague, is not opposed to determination. Now, the way cognition is determined, according to Peirce, it is the capacity of being part of a logical argument. Let ‘p’ be the aspect of a *concrete general* (continuous, determined but vague) content. What are the subjective elements, according to Peirce, of these different kinds of cognitions? If an inquirer believes the content p, she might as well hold different attitudes towards it. For instance, by firmly believing it, by doubting it, by wishing it, by acting for it, etc. The described propositional attitudes (distinguished from the propositions themselves) and beliefs do not seem to determine the content of p, they are secondary; therefore, feeling these subjective elements (as a kind of intuitive sureness towards a proposition) is not essential in grasping contents. An example from arithmetic might help here: our attitudes in carrying mathematical inferences do not affect the values of the numbers (that are somehow vague general concepts) in the least.

The advocate of intuitions might, nonetheless, object that intuitions are not feelings; she might want to think of them as a faculty for distinguishing the subjective elements described above. According to this strand of thought, our attitudes towards our beliefs determine whether we distinguish properly or not our own beliefs. Cognitions are, in that sense, conscious intuitions of themselves. Thus, if these are firstly intuitions and later objective representations, then the defender of intuitions can claim intuitions immediately known in virtue of the subjective attitude that seems to be indelibly attached to them. However, Peirce’s question stresses into whether the subjective element of our propositional attitudes *really* accompanies all cognition *necessarily.* Peirce thought that we might explain this fact without supposing such faculty of recognising cognition by intuition:

The question is whether independently of any such distinctions in the immediate objects of consciousness we have any immediate power of distinguishing different modes of consciousness (EP1: 21).

It turns out that after careful examination we can perfectly distinguish the contents of the cognitions from our attitudes towards them. The subjective elements, therefore, are not part of the inferences we carry when we use the contents of cognition. There is a way to confirm that by the sheer fact that a concept of cognition, even if attached to different attitudes, can nonetheless be part of a logical argument. This means the same in every different case of cognition. For example, suppose two radically opposed propositional attitudes: certainty and doubt. Whether either I am completely certain of p or swaying in doubts about p, the meaning of p within an argument is still the same. Furthermore, I even could believe that p is false and still carry inferences “for the sake of argument”. Finally, according to Peirce (EP1: 22), we consequently need to establish some distinctions across some attitudes and the contents of propositions:

* Feelings of ‘making sense’ and ‘imagination’: independently of them we still have immediate consciousness of the objects. Sense and imagination could happen to be contents themselves and thus, the idea that they precede content is ungrounded.
* Feelings of ‘accepting a belief’ and ‘conceiving a belief’: According to Peirce we can take belief in a sensational or active sense; the former is accompanied with a feeling and the latter not. When the sensational aspect of belief occurs it does not make a difference to the content of a belief, and moreover, it is in itself an object of consciousness and, consequently, could be inferred from external facts. Therefore, although this feeling is frequent and familiar, it is not necessary in theorising for immediacy of an object. The active sense is much more important: it is as though saying that beliefs are courses and habits of actions. This idea will be further developed in later years, and it will be explained properly below. At this stage, it seems crucial to understand Peirce’s arguments correctly. Peirce wrote:

Taking belief in the sensational sense, the intuitive power of reorganizing it will amount simply to the capacity for the sensation which accompanies the judgment. This sensation, like any other, is an object of consciousness; and therefore the capacity for it implies no intuitive recognition of subjective elements of consciousness. If belief is taken in the active sense, it may be discovered by the observation of external facts and by inference from the sensation of conviction which usually accompanies it (EP1: 22).

It will be confirmed below that a careful examination of the options that the nominalist positions offer have something strongly in common with the assumption that certainty of feelings is foundational: it will reveal that there is a nominalist tendency to give a foundational character to intuitions when they aim to have a foundational character grounding a kind of mind-independence.

QUESTION 4 *Whether we have any power of introspection, or whether our whole knowledge of the internal world is derived from the observation of external facts* (EP 1: 22)

The fourth question explores another related aspect of the Cartesian epistemology: the belief that there is knowledge by ‘introspection’. Should we want to answer sensibly we need to formulate questions like these first: Do we really have knowledge of the internal world? If so, is it knowledge not derived from external facts? What is the meaning of ‘introspection’? Peirce started responding by defining introspection: “direct perception of the internal world of our cognitions not derived from observations” (EP1: 22).

What sort of things might be known by introspection? For Peirce, suitable candidates might be qualia (or simple feelings), emotions, and ‘the exercise of the will’. The problem in accepting qualia as an element of introspection is that “the power [of introspection], if exists, must be known by the circumstance that the facts cannot be explained without it” (EP1 23). Emotions, in turn, cannot be a good candidate either. These arise as predicates determined by other cognitions. Volitions, perhaps, finally might account for the understanding of the exercise of the will as cognition. These, however, are not introspective either: they are the concentration of the attention into already abstracted cognitions, as it is the case for propositional attitudes too. Introspection, therefore, is a cognition derived from inferences of abstract objects in the same sense that the power of vision is derived from visible objects.

For modern philosophers, it was customary to believe that a sheer exercise of introspection would reveal the internal objective intuitions. Descartes thought of intuitions as clear and distinct ideas. The following empiricist tradition built entire systems upon those grounds. The rationalists, also following Descartes, steadily switched to an emphasis on the inner character of those clear and distinct ideas. Peirce challenged the assumptions of both Cartesian empiricists and Cartesian rationalists. The arguments he offered are related with general processes of inferences and abstractions. If abstraction needs signs to carry out inferences, then the power of our attention works without the need of calling this process introspective. Formulating this in a different manner, the power of our attention focused onto internal states does not affect or adds anything to a general process of inferences.

QUESTION 5 *Whether we can think without signs* (EP1: 23)*.*

After a fast reading of this fifth question we do not find it directly related with traditional Cartesianism. Neither rationalists nor empiricist philosophers who followed the assumptions of Cartesianism wrote about signs, with the notable exception of Locke. However, it can be identified the importance of thinking of cognitions in terms of signs if it is provided that signs are understood as an alternative to intuitions. Peirce introduced signs as our natural way of making sense of external facts in the world: A thought (and thoughts and cognitions are synonymous terms here) as possibly known, is only known by signs. Thought is not constrained to the temporality of an instant, as a particular sensation caught in an impression might be. Understanding thought in terms of signs allows us to make sense of the continuous experience of generality. This movement is liberating, it frees thought from a restriction to individuals. Nominalism, contrarily, binds a mind-independent reality by the use of intuitions. Peirce supposed that the nominalistic assumption is falsified when intuitions fail to explain what would be a foundational intuition that ultimately samples our knowledge of a determinate object. The answer to this question, then, pretends to drift into the possible reply given by the defender of intuitions: she might affirm that we could have some sort of non-propositional reasoning based on intuitions preceding all knowledge as condition. Peirce advanced, against that possible reply, the example of a concrete concept of humanity, let us say, in Aristotle. In considering Aristotle’s humanity and picking the particularity of the object ‘Aristotle’ and the generality of the sign ‘humanity’, as well as relations given in the context of these signs, Peirce said:

A man says to himself, ‘Aristotle is a man; *therefore,* he is fallible.’ Has he not, then, thought what he has not said to himself, that all men are fallible? The answer is, that he has done so, so far as this is said in his *therefore*. According to this, our question does not relate to *fact*, but is a mere asking for distinctness of thought (EP1: 24).

After considering the relevance of signs in such way, the fifth question may seem more expected. The question then, begets these considerations: can we think outside the use of signs? If so, what kind of elements that thought might include? It seems to me that Peirce cared about a pivotal consideration here: there is no way to conceive ourselves thinking without the elements of thought. Those elements must be conceived as signs with content and relations. As explained below, after accepting that fact about thought, we should deny that the incognizable is conceivable. The logic of the basic relations signs can have, consequently, is the fundamental logic normative for all thought. I will come back to the topic of signs and logic of relations in further chapters where it will be studied how Peirce developed these germinal ideas. It has been said that the belief in Cartesian intuitions generates paradoxes like the ‘Achilles’. Let us reconsider the Achilles and observe how thinking in terms of signs enables us to understand that the generalization prompted by signs is necessary and better than the Cartesian approach. An account of discrete infinitely many divisible particulars generates paradoxes. Signs, as opposed to fundamental intuitions, can embrace generality and commonness. Could an individual idea exist for each infinitesimally divisible instant? Peirce says:

[T]his is a familiar question, but there is, to this day, no better argument in the affirmative that that thought must precede every sign. This assumes the impossibility of an infinite series. But Achilles, as a fact, will overtake the tortoise. How this happens, is a question not necessary to be answered at present, as long as it certainly does happen? (EP1: 24).

And in the context of such a situation the alleged question finally makes definite sense:

That, since any thought, there must have been a thought, has its analogue in the fact that, since any past time, there must have been an infinite series of times. To say, therefore, that thought cannot happen in an instant, but requires a time, is but another way of saying that every thought must be interpreted in another, or that all thought is in signs (EP1: 24).

To summarise this section, it must be noted that Peirce was showing that explaining cognition in terms of signs allows the vocabulary of generality without the complications that follow from using the vocabulary of intuitions. This reasoning reveals that the nominalistic aspect of intuitions lies in its incapacity to embrace generality.

QUESTION 6 *Whether a sign can have any meaning, if by its definition it is the sign of something absolutely incognizable* (EP1: 24).

Peirce formulated pragmatism and the maxim of pragmatism in the following decade. However, in this sixth question, the characteristic way of formulating the meaning of a proposition in terms of conceivable consequences becomes apparent:

…there can be no conception of the absolute incognizable, since nothing of that sort occurs in experience. The meaning of a term is the conception which in conveys (EP 1: 24).

Why an advocate of intuitions profits in the ‘incognizability’ of a thing-in-itself? Well, this is a complicated question indeed. We can start answering by establishing that she primarily profits of leaving some cognitions undetermined and based on transcendental elements. According to this reasoning, these transcendental elements are incognizable in themselves and are items that might only be accessed by intuitions serving as a bridge to them. Yet, Peirce showed that cognition of the incognizable is inconceivable. This generates a contradiction. Now, a more detailed explanation is needed: ‘Incognizability’ cannot be a real property of things: a property must be conceivable. Rather, it should be understood as a syncathegorematic term, i.e., it only makes sense grammatically. Something cannot be accepted as real if it is not known: therefore, ‘cognoscible’ and ‘being’ are synonymous terms. We might, however, ask: how can we transcend what we perceive to be the things-in-themselves? Peirce’s first attempt for solving the complication between the connection of knowledge, on the one hand, and how reality is, on the other, was given in the following proposal: there is a need of vindication of universals, we need them to make complete sense of the direct access to what is valuable in cognition. From this premise, Peirce focused his attention in how reasoning and inference necessitate those kinds of signs that universals are. These are particularly essential for the articulation of a good theory of induction and hypothesis (later on called *abduction* or *retroduction*). This latter point is crucial: the Cartesian needs a bridge between cognitions and mind-independent things-in-themselves given by intuitions. However, as long as generality escapes from the grasp of concrete intuitions, scepticism crops up about generality: the transcendental bridge divides the world of cognitions and the world of things-in-themselves. Peirce read this as a Platonistic move: Plato affirmed that there are perfect individual ideas of properties. The believer in limiting and inaccessible ‘things-in-themselves’ bridged by intuitions, on her part, affirms that there are items that inform our cognition, but ultimately inaccessible. The acceptance of generality and cognition based in signs, as opposed to individual intuitions, enables our inferences to not halt due to scepticism. The Cartesian is a nominalist that denies generality: nominalism, thus conceived, is less wrong in what denies that in what affirms. It is understandable that thought must have some kind of conceptual economy, as we need to be free of false and unnecessary beliefs. Another thing, nonetheless, is the affirmation that those ideas are elements that correspond somehow (as incomplete copies) with external things. This leaves without explanation the question of why there are elements of commonness and generality. Consequently, this creates a mystery of what the ‘things-in-themselves’ really involve:

…On the other hand, all our conceptions are obtained by abstractions and combinations of cognitions first occurring in judgments of experience. Accordingly, there can be no conception of the absolutely incognizable, since nothing of that sort occurs in experience. But the meaning of a term is the conception which it conveys. Hence, a term can have no such meaning (EP1 24).

We will delve into Peirce’s theory of meaning in Chapter Three. For now, it is important to bear in mind that the naturalisation of meaning was a germinal idea in these papers. The answer to this question will eventually develop into Peirce’s theory of meaning expressed in his pragmatism.

QUESTION 7. *Whether there is any cognition not determined by a previous cognition* (EP1: 25).

Two conceptions about the content of cognitions are at stake in this question: on the one hand, the nominalistic conception defends that cognitions can be unrelated from other cognitions. Peirce, on the other hand, believed that cognitions could not occur isolated. The strands of Peirce’s argumentation on this can be summarised in the following two arguments: (1) we think by using relations, and inferences are identifiable relations. For example, a middle term in a syllogism is classically relating premises and conclusion altogether, an explanation establishes a relation of identity between the *explanans* and the *explanandum*, and so forth. (2) Knowledge grasps cognitions by relating them; every element of cognition, if unrelated, it is certainly impossible to include in the stock of knowledge. Even the relevance of some cognitive content over another is a relation too:

Besides, all the cognitive faculties we know of are relative, and consequently their products are relations. But the cognition of a relation is determined by previous cognitions. No cognition not determined by a previous cognition, then, can be known. It does not exist, then, first, because it is absolutely incognizable, and second, because a cognition only exists so far as it is known (EP1: 26).

Thus far, the last question of the list addresses an issue placed at the very basis of the foundationalist point of view: the thought that cognition must ultimately rely in a conceptual foundation for it to be rationally grounded. The foundationalist stance can be well represented in a metaphor of knowledge: as though knowledge was a chain whose bonds need to cling in an ultimate foundational principle. We also must be wary that the sceptic will be waiting to catch us at that end of this reasoning, as no cognition is absolutely certain and intuitive in the way required for such an ultimate absolutely certain bond. Peirce described knowledge by advancing an alternative metaphor: knowledge is more like a web or a cable whose fibres and strands intertwined making it multiply related. This contributes for the understanding of what validity of knowledge means:

…But the cognition of a relation is determined by previous cognitions. No cognition no determined by a previous cognition, then, can be known. It does not exist, then, first, because it is absolutely incognizable, and second, because a cognition only exists as far as is known (EP1: 26).

Peirce, finally, offered yet another metaphor for helping to understand the continuous aspect of knowledge (EP1: 27). An inverted triangle sinking is a good example of how cognition actually acts as a continuum: the continuity is a dynamic process, as opposed to foundational at a particular point. In conclusion, Peirce was then ready to advance a conception of reality from the anti-Cartesian point of view. I will consider that viewpoint below, and thus, explain how he thought he was providing a consistent theory. Before doing so, this section ends questioning about Peirce’s strategy: Why Peirce took such an extensive time and effort to assess the concept of intuition? How are we supposed to understand the philosophical tradition about cognition? The answers to these questions reveal that the Nominalism attacked by Peirce relies on intuitions extensively. This, somehow, makes the concept of intuition the core concept of a theory of foundational cognitions. If it turns out that intuitions are not reliable in the required sense, then the Cartesian strategy and the consequent nominalism related to it share one crucial mistake.

Peirce, finally, summarised and characterised Cartesianism in the second article of the series *Consequences.* The following four claims seized Cartesianism against the medieval scholastic realist tradition. Cartesianism, thus:

1. It teaches that philosophy must begin with universal doubt; whereas scholasticism had never questioned essentials.
2. It teaches that the ultimate test of certainty is to be found in the individual consciousness; whereas scholasticism had rested on the testimony of sages and the Catholic Church.
3. The multiform argumentation of the middle ages is replaced by a single thread of inference depending often upon inconspicuous premises.
4. Scholasticism had its mysteries of faith, but undertook to explain all created things. But there are many facts which Cartesianism not only does not explain but renders absolutely inexplicable, unless to say that ‘God makes them so’ is to be regarded as an explanation (EP 1: 28)

Taking note from the previous discussions, it has been identified why intuitions are important for the Cartesian. Descartes himself described intuitions in the following way:

The conception of a clear and attentive mind, which is so easy and distinct that there can be no room for doubt about what we are understanding… the indubitable conception of a clear and attentive mind which proceeds solely from the light of reason (Writings 1:14)[[11]](#footnote-11).

From this quotation it becomes apparent how Descartes argued for an indubitable and necessary elementary aspect of any given conception. This aspect is presumably supported by its subjective element of clarity and distinctiveness. In the paper *Further Consequences*, the last of the series that concerns this Chapter Two, Peirce provided a last criticism of the four fundamental incapacities of Cartesianism. He also presented a positive argument for why the door for logical argumentation, especially of induction, should remain open without any blockage from psychologism based in intuitions. Indeed, even Peirce’s early theory of signs, although still sketchy and unsystematic, enabled us to understand that logical inquiry establishes relations that occur without the need of feelings of intuitive acquaintance, certainty, or any other subjective feeling. Logical inquiry and rational thought only require the content of the signs themselves, as opposed to subjective certainties. In the commentary to the second question above it has been noted that testimony acts as the dawn to self-consciousness, not inversely. No private account of the self, then, can account for error. All things being equal, ignorance and error, as epistemic states, are what distinguishes our private selves from the absolute ego of pure apperception. If we understand the self as a sign itself, we consequently understand how it is inferred. This understanding occurs after the relations of the self with all the other cognitions have been revealed.

How can we, however, identify an intuition from something that is not foundational in the abovementioned sense? Can we really do that mental discrimination? The traditional Cartesian reply states that we have the immediacy of intuition. What, though, does ‘immediacy’ really mean, after Peirce’s criticisms? The Cartesian will be, therefore, saying that we have an intuition of the intuition, which is what guaranteed the immediacy. That, unfortunately, leads us to an indefinite infinite regress: “if we do not know what we believe, we do not believe”.

Introspection could be understood as a standpoint separated from external facts and independent of them. This separation is the aim of a nominalistic approach of a Cartesian kind. That, unfortunately, leads us to the idea that what is out of that fixed introspection is ultimately incognizable. This means that cognition is conceived detached from the outward events. The grounds of the validity of the laws of logic, however, are opposed to the Cartesian account. Indeed, for a law of logic to be valid it is necessary to have rigorous laws regulating truth-making and truth-bearing that have to go beyond statements of subjective introspection. After all, saying “I feel certain of p” does not help too much to settle the validity of an argument. Peirce, in conclusion, resisted a form of psychologism that grounds logic in our subjective feelings like ‘introspection’.

Peirce answered negatively the same questions that the Cartesian answered positively. He formulated, hereby, four negative principles against Cartesianism as incapacities:

1. We have no power of Introspection, but all knowledge of the internal world is derived by hypothetical reasoning from our knowledge of external facts.
2. We have no power of Intuition, but every cognition is determined logically by previous cognitions.
3. We have no power of thinking without signs.
4. We have no conception of the absolutely incognizable. (EP 1: 30)

The spirit of the papers of the JSP series, according to Peirce, it is critical ‘observation’ of Cartesianism. What results from that observation it is summarised in the four denials and a further test of their consequences:

We may first consider the first alone; then trace the consequences of the first and the second; then see what else will result from assuming the third also; and, finally, add the four to our hypothetical premises (EP1: 30).

In these papers, subsequently, Peirce treated issues of realism understood as an account of ‘mind-independence’: if something is real is mind-independent. That treatment is still not fully developed at this stage. Peirce will introduce a more definitive definition in the following decades of development in his realism. One of the important questions at this period concerns how ‘mind-independence’ should be understood. Perhaps, Peirce’s ambition was to provide a better understanding by distinguishing (mind independence of) external things and mind independence of general conceptions (universals), since Peirce was radically opposed to the nominalist theory that denies general conceptions. The nominalist explanation, conversely, argued that we have a receptive faculty of perception of particular objects by means of particular and individual impressions. This nominalist conception of mind-independence was attacked in the *Berkeley Review* of 1870. In the 1868 papers he prepared the grounds of further criticisms to nominalism by attacking the concept of intuition. Peirce’s criticism aimed to provide a definite set of counter-arguments against faculties that relate discrete individual sensations and their likewise individual impressions as foundational and ultimate for knowledge.

Attention should now be paid to the opinion that realism means the acceptance of the existence of thoughts. I shall illustrate how Peirce rejected series a mind-independence of thoughts as existent from the outset of the JSP series. In Peirce’s opinion the reality of thoughts does not require their existence:

Thoughts have no existence except in the mind; only as they are regarded do they exist. Hence, two thoughts cannot *be* similar unless they are brought together in the mind (EP1: 40-41).

It has been described that there are aspects of the Cartesian belief about intuitions coming from nominalistic assumptions. The nominalism involved here is specific. This nominalism supposes that a sensation is a simple and elementary impression equivalent to the idea that there is a foundational ‘thought-copy’ for every empirical item in the world. This is the origin of what has been called ‘the copy-theory of truth’. One of the issues about such theory lies in conceiving thoughts as fixed, corresponding to individual objects. This one-to-one correspondence yields generalisation impossible. This, according to Peirce, is downright false: Peirce judged, conversely, that though we have impressions of sensations, they only play the role as approximate and somewhat vague hypothesis (EP1: 42). In order to demonstrate the hypothetical nature of impressions he wanted us to understand the elements of thought:

Thus, we have in thought three elements: 1st, the representative function which makes it a representation; 2nd, the pure denotative application, or real connection, which brings one thought into relation with another; and 3rd, the material quality, or how it feels, which gives thought its quality (EP1: 42).

From the last quotation it should be noted that intuitions cannot be singular and pure. Regardless of there being a singular material quality of a sign that represents the feeling, the feeling is not an ultimate singular and pure impression:

…A feeling, therefore, as a feeling, is merely the material quality of a mental sign (EP1: 43).

To sum up the argumentation: signs always mediate thought. The role of intuition in the Cartesian tradition is consequently misguided, the Cartesian aims for a clear and distinct idea foundational and unrelated that ultimately grounds thought. Signs, however, cannot be that way, as they are always interconnected. Clarity and distinctiveness are psychological elements; these propositional and subjective attitudes are not necessarily supposed in the functioning of signs. The explication of why we have the subjective feelings in an almost regular basis is rather due to qualities. Qualities are, on the one hand, non-existent in external reality, parts of thought-sign. On the other hand, though, qualities are independent of the vagaries of a particular judgment. Qualities, therefore, fall in the scope of propositions and the truth-makers of these propositions. Qualities, as elements of signhood, are better alternatives to the subjective elements of clarity and distinctiveness given by the Cartesians. These account for elements mediated by signs in the process of inference. Now we are ready; therefore, to introduce the definition behind what Peirce considered ‘real’ and mind-independence to be:

The real, then, is that which, sooner or later, information and reasoning would finally result in, and which therefore independent of the vagaries of me and you (EP1: 52).

It should be noted that this first definition of ‘real’ is opposed to psychologism. Psychologism situates the ‘real’ in the existent psychological states of our feelings of certainty given in intuitions. Peirce, in addition, opposed psychologism advancing a concern about truth: the object of a true proposition is grasped by the convergence of a community. He wrote:

Thus, the very origin of the conception of reality shows that this conception essentially involves the notion of a COMMUNITY, without definite limits, and capable of an indefinite increase of knowledge (EP1: 52).

A communitarian aspect of inquiry appears here for the first time in Peirce’s writings. If we interpret cognitions and thought in the degree of mind-independence that Peirce required, we still need to understand if the content of the thought-sign is linked to something independent of the power of introspection. This seems guaranteed both by a community of inquirers and by the belief in real generals informing cognition, opposed to a theory of individualistic certainty and foundational individual impressions. Peirce explained that the theory of reality introduced is ‘Scholastic Realism’:

But it follows that since no cognition of ours is absolutely determinate, generals must have real existence. Now this scholastic realism is usually set down as a belief in metaphysical fictions. But in fact, a realist is simply one who knows no more recondite reality than that which is represented in a true proposition (EP1: 53).

The article *Consequences,* thus far,hints in an account of mind and reality opposed to the one denied in *Questions*. Yet none of both papers presents a fully developed account. *Further Consequences* (EP1: 56-82)completes the picture by giving us at least three elements of what the theory of reality should contain: (1) an account of the kinds of inferences we can carry out, (2) a theory of signs as explaining how thought and inference is connected and (3) a theory of reality based on a community of inquiry. These three elements are bound together by Peirce’s use of both Augustus DeMorgan’s logic of relations and his own. Peirce, nonetheless, tried to develop a definite criticism to nominalism and an integration of those three elements of reality in another text: the *Berkeley Review* (1871). The following section analyses that text, and the picture of the early theory of reality is thus completed.

## The Berkeley Review and the Scotistic Definition of Reality

Peirce diagnosed the inherited philosophical tradition of his time by reviewing Bishop Berkeley’s philosophical writings. He felt he discovered a chain of blunders in philosophy that originated in misinterpretations coming from the late Middle Age. Peirce thought that the nominalist attitude, criticised, thus far, in his JSP papers as a sort of Cartesianism, has been regrettably dominant since. Nominalism of this sort thrived due to unjustified prejudices against Scholastic Realism. Peirce’s purpose in this work was to put forward a nuanced vision of what Scholastic Realism actually is and how should contribute to clarify the problem of reality. It is important to remark, however, that his explicit allusions to Scholastic Realism presuppose the work of the JPS series and aimed to clarify it further: Scholastic Realism, then, was not an unprecedented new doctrine in this work. The Berkeley Review taught us that the formulation of a theory of reality is the first important step in a correct understanding of the history of philosophy. Peirce chose a Scotistic Definition of reality, which alludes to the medieval philosopher John Duns Scotus. Peirce accepted that there were nominalistic ways to formulate a theory of reality, even previously adopting the Scotistic Definition. Peirce reviewed two of them, but what concerned him more was to explain the shape of the argument for Scholastic Realism that begets from a correct interpretation of the Scotistic Definition. This is the positive account presented in Peirce’s review of Berkeley. As said above, I see this early theory of reality composed of three elements: (1) an account of inferences, (2) a theory of signs and (3) norms that regulate inquiries in a community. Peirce thought that we should, initially, come back to Scotus’ definition of reality, one that can give us a fresh start to erase all the misconceptions commonly assumed against realism of universals. There is an important misconception to correct: the commonly accepted charge that being a realist about universals means being a Platonist. Peirce argued that the current explanations of universals are false and unintelligible. Yet we have to deal seriously with the question: Are universal real? To answer this question correctly and explain the meaning of ‘real’ it is needed to revisit our ontology of objects first. The most generally possible category of objects of cognition can be divided in:

1. Figments: “exist inasmuch you or I imagine them”
2. Realities: “those items which have an existence independent of your mind or mine” (EP1: 88)

Peirce distinguished, on this ontological account, two conceptions of reality in the Berkeley Review: nominalist and realist. Although he did not attacked the term ‘intuition’ here, the nominalist conception of reality gives central importance to what Peirce had previously called ‘intuitions’: to sustain this claim it is required to prove that there is continuity between the JPS series and the *Berkeley Review.* In the next lines I will follow Peirce’s path in the *Berkeley Review* in order to flesh out the two opposed conceptions of reality.

Let us move, subsequently, onto the definition of reality itself that has been briefly introduced: Peirce provided the Scotistic definition of reality as the right point of departure for an inquiry into reality. The definition appears in these terms: items or objects, “which exists independent or your mind or mine or that of any number of persons” (EP1: 88), or more clearly: “The real is that which is not whatever we happen to think it, but is unaffected by what we may think of it” (EP1: 88). I will interpret that definition as mind-independence provisionally. It must be read as whatever turns out to constraint thoughts and mind because of its independence of our opinionated stances. The Scotistic definition provides us of an important first clarification of the concept of reality. This is not the whole story, though, as we can develop two accounts of reality within the limits of the definition: one nominalistic and the other realistic. Let each be examined in detail:

**A nominalist conception of reality**: the nominalist conception holds the assumption that whatever it is correspondent to our thoughts must be somehow of the nature of our thoughts. This matches with the abovementioned Cartesian struggle for clarity and distinctiveness, as it involves particulars. These nominalists, consequently, must expect that whatever corresponds to those objects must be a particular too. Peirce explained this nominalistic reading of the Scotistic definition in these words:

Where is the real, the thing independent of how we think it, to be found? There must be such a thin for we find our opinions constrained; there is something, therefore, that influences our thoughts, and is not created by them. We have, it is true, nothing immediately present to us but thoughts. Those thoughts, however, have been caused by sensations, and those sensations are constrained by something out of the mind (EP1 88).

As said above, Peirce explained that the nominalist wants the contents of cognitions identified with a foundational intuition. This is explained in terms of a correspondent ‘sensation’. Now, a foundational intuition cannot accept likenesses between things, because the relation of ‘resemblance’ cannot be a particular object. Universals, hereby, must be excluded from this conception of reality:

Here is one view of reality, a very familiar one. And from this point of view is clear that the nominalistic answer must be given to the question concerning universals (EP1: 88).

The nominalism expressed here derives in empiricism. The particulars required are identified with particular objects. From this, the universals, understood as thought-signs ought to be read as cognitions that do not correspond to particular objects and, thereby, interpreted as fictional. Peirce wrote:

For, while from this standpoint must be admitted to be true as a rough statement that one man is like another, the exact sense being that the realities external to the mind produce sensations which may be embraced under one conception… (EP1: 88)

Peirce did consider William of Ockham as the nominalist thinker *par excellence.* It will be reviewed what are the features of Ockham’s version of nominalism and, why, in Peirce’s opinion, nominalism turns out to be closer to Platonism than realism. In the *Berkeley review*, Peirce presented a long quotation from Ockham in which appears why he was a nominalist that avows for concepts:

…And as for that matter which is common to all things, and which philosophers, following Aristotle, usually call *materia prima*, that is, *first matter*, it is not a body distinct from all other bodies, nor is it one of them. What then is it? A mere name; yet a name which is not of vain use; for it signifies a conception of body without the consideration of any form or other accident except only magnitude or extension, and aptness to receive form and other accident. So that whensoever we have use of the name *body in general,* if we use that of *materia prima*, we do well. For when a man, not knowing which was first, water or ice, would find out which of the two were the matter of both, he would be fain to suppose some third matter which were neither of these two; so he that would find out what is the matter of all things ought to suppose such as is not the matter of anything that exists. Wherefore *materia prima* is nothing; and therefore they do not attribute to it form or any other accident, besides quantity; whereas all singular things have their forms and accidents certain. *Materia prima* therefore is body in general, that is, body considered universally, not as having neither form nor accident, but in which no form nor any other accident but quantity are at all considered, that is, they are not drawn into argumentation (EP1: 118).

Some scholars think that is a mistake to interpret Ockham as a nominalist at face value. These scholars say that Ockham should be aligned in the conceptualist bench. Nevertheless, Ockham’s fundamental move in his strategy is based in a denial of the reality of universals. Ockham held that reality comprises only individuals, and there are not laws that operate in reality. For Ockham, universals are mind-dependent, and excluded from the individuality of mind-independent things. For Ockham, therefore, universals must be reduced to not real items; he called these mind-dependent items ‘concepts’, his position, with regards to universals, it is summarised in these words:

…A universal is not something outside the soul. Also it is certainly not nothing. Therefore, it is something in the soul… and consequently is a true quality of the mind (*Quodlibet* V, q.13)

Nominalists of this trend believe that enumerating individuals and their traits without the use of laws can formulate a complete account of reality. General concepts or abstract objects are thus not identified as real. Ockham deliberately omitted the Scotistic distinction between ‘reality’ and ‘existence’ (Mayorga 2009, 43). For Peirce, this nominalism limits the scope and authority of reason yielding scepticism in science, ethics and religion, and blocking the road of inquiry. Are Peirce’s charges against nominalism fair? Let two forms of nominalism explored by Peirce in the *Berkeley Review* be reconstructed in order to find out the answer.

## Two forms of nominalism in the nominalist account of reality:

### Nominalism of universals as justified by natural science

Soon after the Berkeley Review was published a very direct reply from Chauncey Wright against Peirce appeared published (W2: 487-9). Chauncey Wright argued that nominalism seems to be a healthy influence for natural science. For Wright, nominalism helps science out of the idle metaphysical disputes of the scholastic philosophy. In Peirce’s defence, his argumentation in the *Berkeley Review* did address this point. Peirce indeed considered that when nominalist philosophies engaged with the account of foundational methodology and the principles of inquiry, what results is a reckoning of the ‘science of inquiry’ as one further empirical science. Consequently, as it often happened with empiricism, there is a problem in trying to explain to what extent the non-empirical statements of the science can be regarded as normative. In other words, this nominalism implies that the principles of inquiry are justified *a posteriori*, i.e., as any other proposition within a natural science is justified. This does not seem problematic, but the principles need to be normative and general if the ‘science of inquiry’ is meant to deal with experience and its categorisation. For similar reasons, the principles of inquiry and the theory of reality have to be formal and accept material instantiations. In this kind of nominalism, however, particular concrete experiences are only material, as opposed to the required formal character of the principles of inquiry. To illustrate this further, I offer an example of a particular science: biology collects different tokens of a type, but the type is not restricted to the material particularities of a token, these features could even mislead the inquirer. Natural sciences discover their items and add up to their stock of information; this information needs, however, classification and processing. The principles of inquiry, then, need to be prior to the particular information of a science. If the principles of inquiry are discovered like any other particular information, then they will be interpreted as supposedly cultural, locally or historically specific, rather than universal. This view implies, then, that the principles are contingent and descriptive. For the mentioned reasons the principles need to be normative: they are required as rules if we need a self-controlled way of achieving truth in cognition. Peirce quoted a long list of thinkers up to his present day in this review. He tried to show that science progressed when was freed from those problems and actually followed a realistic path. Peirce thought would certainly accept that Chemistry has a good case exemplifying a realistic stance and escape from nominalism. Chemistry embraces and then encompasses many kinds of generalizations (Cf. EP1: 100-101). In brief, the problem seems to be that the aims of a ‘science of inquiry’ clash with the scope of a nominalist view, which is particular empirical inquiry. These problems, all things considered, make the justification of principles of this kind of nominalism viciously circular, if they pretend to offer an account of reality.

### Nominalism of universals as an a priori science of the mind

The other possible defence of a nominalistic stance relies upon the premises we examined and criticised previously in the analysis of the JPS papers series. Nominalism of universals could alternatively offer a theory of reality based on the acceptance of ultimate individual foundational intuitions. Although this perspective makes ‘the science of inquiry’ *a priori*, formal, universal and necessary, the problem comes from the grounding of the principles on this particular understanding of ‘intuition’. Intuition renders the science of inquiry subjective. This implies that we will be, consequently, unable to distinguish amongst a self-evident principle from another one that only seems to be so. This has been extensively reviewed above. Intuitions are, thereby, not reliable: they cannot fulfil the foundational role. In fairness, nothing actually can fulfil that specific absolute foundational role in such way.

Peirce’s arguments against the foundational role of intuition and how this Cartesian/nominalistic point of view fails to account for reality were presented. Conclusively, the problem of this version of nominalism is that leads to solipsism and scepticism. If we understand the ambiguity involved in the case for intuitions, introspection and subjective elements, then nominalism appears a rickety criterion for the fixation of beliefs, especially in the case of sciences. In the Berkeley Review Peirce defended that science needs an account of independent, inter-subjective experimental testing of the principles of inquiry. Peirce called this aim, in brief, ‘Scientific Metaphysics’. We will move on the properly positive views he offered for achieving a conception of reality based in the Scotistic Definition and yet realist.

### A Scholastic Realist Conception of Reality

Peirce’s argumentation presents the consequences of nominalism having a tendency to particularism. Particularism amounts, as a natural consequence of its premises, to a single individual in the experience of particulars. As opposed to nominalism, the realist conception does not take particularism for granted. Realism of this sort recognises that individuals often affect particular opinions; nonetheless, the human opinion universally “tends in the long run to a definite form, which is the truth” (EP1: 89). Peirce, thus, argued here to understand the conception of reality as the consensus of a community on truth. He understood truth as the end of inquiry with “sufficiently favourable circumstances” (EP1: 89). He formulated this conception of reality in the following terms: “There is, then, to every question a true answer, a final conclusion, to which the opinion of every man is constantly gravitating” (EP: 89) It could be objected that seems as though the final opinion turns out to be mind-dependent, as long as it depends of the minds of a community. That objection probably enabled Peirce to work out ideas related to his ‘objective idealism’ in later years. The controversial idea that the final opinion is independent of particular idiosyncratic thoughts but not independent of thought in general will be reviewed extensively in Chapter Three. Peirce also wanted to say that there must be norms of inquiry for a process to be the right kind of realist approach, though I will present in Chapter Three the ideas that lead him to pursue the norms of belief fixation in the context of his theory of inquiry. The ideas about the final opinion, thus far, are phrased in this way:

This final opinion, then, independent, not indeed of thought in general, but of all that is arbitrary and individual in thought; is quite independent of how you, or I, or any number of men think. Everything, therefore, which will be thought to exist in the final opinion is real, and nothing else (EP1: 89).

Peirce stressed that for all that we know, the final opinion is all that matters for the content of truth, as opposed to an absolute reality of an inaccessible nature. This will be dismissed as a fiction of *ontological metaphysics.* Peirce thought that the scholastic philosophers were well aware of this conception of reality. Moreover, Peirce affirmed that the controversy of universals these philosophers engaged was not related with the traditional interpretation about existence of platonic forms, as usually reckoned in the history of philosophy. Peirce thought that the medieval philosopher John Duns Scotus formulated the best and subtlest version of the scholastic conception of reality.

Peirce understood Scotus making the same theoretical move he did: from a mind that is capable to conceive generality should be inferred participation in an independent reality, and not the converse. Whatsoever is fated to be truth at the end of inquiry must have priority over opinionated beliefs. I will consider further details of convergence of both philosophers here: Scotus wrote about a common nature that is actualized in the mind as a habit, as *habitualiter*. The same common nature that is actualized in concrete things as existence*: actualiter.* In both cases he was talking about a *real* instantiation, but of different modes: *formalitates* (Scotus, *Ord.* II, d.3, p.1, and q.1-6)*.* Peirce understood Scotus’ theory as endorsing his own theory of a thoroughly accessible final opinion. Scotus certainly did not regard any aspect of the common nature as incognizable. Did Peirce, however, understand Scotus correctly? Is it the concept of *common nature* equivalent to *the final opinion*? I review these questions in Chapter Three, will be enough to say that although Scotus’ concept of common nature does not refer to a community, still appeals to the same kind of mind-independence cognoscible aspect of reality.

One further distinction comes to the fore of the discussion at this point: By the use of Peirce’s terms, it should be clear that the two predicates ‘real’ and ‘existent’ are not coextensive. This distinction is crucial and it was always present in Peirce’s vocabulary after the publication of the *Berkeley Review.* In explaining Scotus’ view, Peirce provided, for the first time, reasons as to why we should not use these terms synonymously. According to Peirce, the term ‘real’ should be used to whatsoever shows mind-independence and pervasiveness for cognition; while the term ‘existent’ should be use when whatever entity shows itself as manifested to our senses in spatial-temporal coordinates. It will be seen in another chapter that the best explanation for this move is based on the theory of Categories.

There is an important shift in Peirce’s ideas that should be noted: in 1865, Peirce took words such as ‘blueness’, ‘hardness’ and ‘loudness’ to refer to qualities conceived in individuals but being themselves actually real. When Peirce characterized qualities as ‘fictions’ he was rejecting the view that blueness, hardness and the like are individuals: “entities which (have) no quality but that expressed by the word” (W1: 312, 1865). The shift, thereby, in Peirce’s opinion, is that although quality might appear as a figment, there are reasons to believe it real. In Chapter Six I will reconsider this aspect applied to the problem of secondary qualities. The reason we have reviewed qualities, nonetheless, lies in the fact that they are pervasive to the inquiry of the community. The belief that qualities are not real, but figments of our subjective feelings, will be called ‘nominalistic Platonism’ in later writings (CP 5.503, 1905). Platonism, in Peirce’s reading, claims that universals are not only real, but also existing individuals, and that is the core of the doctrine of ‘ontological metaphysics’. Peirce was denouncing a false dilemma of ontological metaphysics: “either you believe that universals are real because they exist or you believe that universals are not real because they do not exist”. Platonism, such conceived, consists in the inference that from the presence of abstract terms in language ought to be inferred the belief that there exist individual things that those terms denote. Peirce thought that his ‘scientific metaphysics’ helps to overcome the dilemma. Scholastic Realism, as an alternative, does not accept a need of particularity when the *common nature* is not instantiated. This, nevertheless, does not affect the reality (mind-independence) of the common nature (or of the final opinion). Peirce claimed that the very term ‘reality’ was coined by Duns Scotus (EP1: 88). The term implies what we called the ‘Scotistic definition’ of reality, but also supposes the paramount claim that whatever influences our thoughts must be accepted as real, even if not existing in a particular or individual way[[12]](#footnote-12).

As has been said above, Peirce himself recognized that we might firstly adopt the nominalistic answer as a natural and familiar one. The nominalistic response to the question concerning universals is likely to be embraced because is actually akin to some common sense position that agrees with the Scotistic definition:

…And from this point of view it is clear that the nominalistic answer must be given to the question concerning universals (W2: 468).

This judgment, although familiar, is inaccurate. This simplistic stance assumes that the ‘likenesses’ are ‘things’ as ‘objects’. They certainly are not, but that does not make the judgment about real likenesses false and, therefore, there is real property of ‘resemblance’.

The argumentation, thus far, articulates along these premises:

1. We need to account for the objects and cognitions that do not depend on our idiosyncratic concomitances,
2. Those objects and cognitions are defined as ‘real’,
3. Nonetheless, not all those objects and cognitions are of the same kind and,
4. We tend to consider the objects of our sensibility as real,
5. The nominalist accepts the reality of objects of our sensibility, but not of anything beyond that.
6. The nominalist supposes intuitions in that process,
7. It has been shown, however, that the theory of intuitions is not tenable,
8. And, moreover, intuitions are still not enough to account for likenesses and resemblance, because they correspond to impressions of particulars.
9. The nominalist response seems to be natural but limited in its simplicity

In responding to the challenge for realism, Peirce provided us, as said already, with an account of truth: a theory of truth necessitates a conception of reality; an account for the natural feeling that mind and world correspond. Granted that we believe that there are true propositions assumes that there is a continuous character between world and knowledge. This assumes a hypothesis of reality, and consequently we *hope* for the truth:

But human opinion universally tends in the long run to a definite form which is the truth (W2: 468).

Be noted that the word ‘form’ is used here. The use of this term is important because Peirce was not using the words ‘cognition’, ‘proposition’, ‘opinion’ or ‘belief’ that he was constantly invoking in other occasions. In my opinion, this is an indication that he was providing a structural and not singular concept, namely, ‘form’. This concept has Aristotelian and medieval origins, and Peirce used it in his 1867 ‘On a New List of Categories’ in the context a theory of signs (CP 1.559). According to Peirce, the concept refers to relations of consequence within a syllogism (CP 1.559) and renders ‘formal grammar’ possible. I read this word as an early indication that the final opinion is not an specific singular proposition, but an indicative of an emphasis in a relational and dynamic character of the ‘final opinion’.

Bertrand Russell (1989, 276-7) objected Peirce that the idea of a ‘final opinion’ is flawed, as it will imply that if humanity was wiped out and only one human was left then her/his opinions should be considered necessarily true. Russell’s construal of Peirce’s argument is this: “The final opinion is a concrete proposition at a particular point in time”. If we understand the ‘final opinion’ not as a definitely formulated proposition, rather as a limit to which structures approximate, then the problem of being the ‘final believer’ does not apply even to this early formulation of Peirce’s ideas.

Now, the continuously reshaped structure of the final opinion must be *ante rem* (i.e., ontologically prior) to any particular instantiation of a true proposition: this explains why there are always better formulations of a content that has been already the object of consensus. Suppose that we agreed that the Sun is the centre of the solar system: the Copernican belief has been indefeasible thus far, but has been amended and polished: by acknowledging with Kepler, for example, that the Ellipses have two centres and the Sun can only occupy one of them at a given time . The Scotistic concept of *common nature* shares this trait with the idea of a ‘structural final opinion’. Peirce, though, esteemed that finding the structure of the final opinion is the result of careful inquiry guided by norms and the abandoning of self-interest:

The individual may not live to reach the truth; there is a residuum of error in every individual’s opinions. No matter; it remains that there is a definite opinion to which the mind of man is, on the *whole* and in the *long run* tending (W2: 469).

Making sense of these claims about truth and the final opinion indicates the regularity that only an account of generals (universals) can enable in our conceptions:

In other words, is the present existence of a power anything in the world but a regularity in future events related to a certain thing regarded as an element which is it to take on account beforehand, in the conception of that thing? (W2: 469).

Finally, it should be concluded, according to Peirce, that Scholastic Realism is fatal to the concept of *thing-in-itself*:

[A] thing existing independent of all relation to the mind’s conception of it (W2: 469).

In the analysis of nominalism has been said that the concept of *things-in-themselves* supposedly covers the gap between mind and world. The limit of the unsurpassable gap is the ‘incognizable’. This nominalist only accepted:

Appearances of sense as the only signs of realities (W2: 470).

However, the rejection of *things-in-themselves,* their inconceivable character due their incognizable nature, prompts the consequent rejection of both ‘noumenalism’ and nominalism. Conclusively, there will be no such things as the Kantian items called ‘noumena’, if these are unknowable or incognizable.

Peirce used the expression ‘The Catholic consent’ to summarise the idea of convergence in the final opinion. This is yet another feature that reveals Peirce’s connection with the principles of Medieval Scholastic Realism. In Peirce’s case, nonetheless, the catholic consent is not given by the authority of a church, but from the relentless process of inquiry of a self-disinterested community. Peirce subsequently preoccupied in clarifying the concept of ‘external’: it does not mean beyond the reach of the cognoscible items. What it actually means was explained in these words:

…[W]hich is independent of that phenomenon is immediately present; that is of how we may think or feel; just as ‘the real’ means that which is independent of how we may think or feel about it; it must be granted that there are many objects of true science which are external, because there are many objects of thought which, if they are independent of that thinking whereby they are thought (that is, if they are real), are indisputably independent of all other thoughts and feelings (W2: 470).

Peirce considered that the real thoughts involve particularly general conceptions. These enter both into all judgments as well as in true opinions. Therefore, a given entity is real in the general as in the concrete. Peirce’s early Scholastic Realism affirms that being of the nature of thought does not imply not being real, provided that these thoughts are independent of idiosyncratic vagaries. This also enabled him to reconcile the generals not only with reality, but with inference: we could defend that a true proposition is always true regardless of time, cultural constraints, etc. The approach to truth presented in the *Berkeley Review* and latent in the JSP papers seems to be one based in the idea of *discovery*. Consequently, it is an approach based on the idea that there is a road of inquiry that should not be blocked.

At this stage, a problem and source of puzzlement was the obscurity in the definition of truth. There is logical conception of reality involved in this definition of truth. It allows two interpretations that seem to exclude each other: (a) some belief p is true because if we inquire on it well enough and long enough, it will pervade; and (b) a belief p will pervade because the community of inquirers, after following a careful and controlled inquiry, will hold it. The definition (a) posts a problem to inquiry as *discovery*, we can have buried secrets or situations in which there is no way to discover the truth. The problem with (b) might be relativism: how can we really know for sure when the community of inquirers is searching well enough and long enough? I shall leave this puzzlement for Chapter Three and work out how Peirce thought that the doctrine of Scholastic Realism might still be a sensible answer to achieve the principles of inquiry. Arguably, Peirce identified the recognition of the external nature of signs as *phenomenalism*. It surprises us when he says that Kant’s Copernican shift was Kant’s movement towards realism. This realism involves independence of our idiosyncratic conditions, and yet not independent of the conditions of mind in general:

The Copernican step was therefore the passing from nominalism to realism (W2: 470).

It was the essence of his philosophy to regard the real objects as determined by the mind. That was nothing else than consider every conception and intuition which enters necessarily into the experience of an object, and which is not transitory and accidental, as having objective validity…

…in short, it was to regard the reality as the normal product of mental action, and not as the incognizable cause of it (W2: 470-71).

Peirce’s interpretation of Kant is certainly contentious, but what he described above clarified the nature of his Scholastic realism in a statement that recollects his other doctrines present in the JSP papers.

Finally, the summary of the argumentation for Scholastic Realism collects features of the doctrine in the following added premises:

1. The doctrine of Scholastic Realism accepts as real the objects of the final opinion.
2. These objects are real but not existent, given that both predicates are not coextensive.
3. Scholastic Realism has the advantage, over the nominalist position, of not splitting reality between an internal world of ideas and an external world of inaccessible things-in-themselves.
4. Scholastic Realism supposes a continuity of thought and world: individual minds think with signs, and the externality of the world is such because is of the same nature of the mind, namely, continuous with the content of the signs.

Peirce finished his *Berkeley Review* enlisting the benefits of the doctrine of Scholastic Realism. These are the following: *Highly practical*, because it is supposed on the normal scientific inquiry. It is also a *common-sensical* doctrine, it grasps all our intuitions about all sorts of objects. In addition, it does not generate fictitious doubts like the Cartesian approach. Finally, it generates a doctrine of immediate perception (W2: 471). He emphasised once more that concerning generals, being on the mind will not diminish the least of its external reality:

For he [the Scholastic realist] does not think of the mind as a receptacle, which if a thing is in, it ceases to be out of to make a distinction between the true conception of a thing and the thing in itself is, he will say, only to regard one and the same thing from two different points of view; for the immediate object of thought in a true judgment is the reality. The realist will therefore, believe in the objectivity of all necessary conception of space, time, relation, cause and the like (W2: 471).

An important question can be raised at this stage: what the universals or generals have to do with reality? Peirce’s answer affirmed that the continuity between the reality of the mind and the externality of the world is given by the common nature of signs. Signs are grounded in generality and universal properties. Things being so, we need to add two further claims to the premises for Scholastic Realism:

1. The generals (universals) must be real, they indeed affect the content of signs by which we think, and, thus, are necessary components of inquiries in the external world, despite them not having phenomenical qualities.
2. Therefore, Scholastic Realism is realism about generals/universals.

Some other pressing questions emerge: What produces some disagreement on the schoolmen? Why Scotus did not regard ‘existence’ as ‘reality’? The answer, according to Peirce, lies in the different considerations that the word ‘real’ holds:

…[O]ne as the fountain of the current human thought, the other as the unmoving form to which is flowing... (W2: 471).

In conclusion, Peirce deduced that:

The gist of all nominalism will be found to relate to a ‘*res extra animam*’ (W2: 471).

It has been explained why the identification between ‘realism’ and ‘Platonism’ is false and why, according to Peirce, it does come from any slight careful examination (Cf. W2:472). Platonism, thereby, is committed with a realm of inaccessible items. Scholastic realism cannot be Platonistic in Peirce’s interpretation. His early Scholastic Realism is committed with the idea that the way of inquiry should remain unblocked and nothing is incognizable *per se*. Thus far it can be said that Peirce not only used a terminological shift; he rather produced an analysis as to how the appearances of conceptual economy that the nominalist position offers are false. Furthermore, he wanted to point at the root of basic misunderstandings in the explication of how metaphysics and science are bound together. The doctrine of Scholastic realism as shown thus far is based in the three elements we considered before: (1) general account of inference, (2) theory of cognition based on signs and (3) a theory of convergence in the inquiry of a community. None of these elements is sufficiently developed at this stage. Peirce seemed not fully satisfied with this sketchy picture.

## The origins of Peirce’s Scholastic realism

It should be noted the account of Peirce’s realism I have presented thus far disagrees with the received opinion of the Peircean scholarship. I claim that there is evidence for an earlier commitment of Peirce to Scholastic realism. In this section I aim to substantiate my claim further. My interpretation is certainly in disagreement with the accepted scholarship: it is generally accepted by Peirce’s scholars that Peirce had an initial commitment to Nominalism that changed in 1868 with a first step in the JPS series, this is the view defended by Fisch (1986, 184):

Was he a nominalist at first? Yes, by avowal and repute, and, I think, in fact. When did he take his first intended step toward realism? In 1868, in his three papers on cognition in the *Journal of Speculative Philosophy…* His second? In 1871, in his article on Fraser’s edition of Berkeley in the *North American Review* (Fisch 1986, 184)

Furthermore, Fred Michael (1988, 317-48) claims that Peirce never got rid of his nominalism. He sees two Scholastic realisms in Peirce, one of them originated in ‘nominalism’:

What Peirce called his scholastic realism took two fundamentally different forms. While the second is recognizably scholastic in inspiration, the first is very close to nominalism; in fact nominalism was the source of this realism (Michael 1988, 317)

Michael even argues that Peirce’s Scholastic realism never stopped being a form of nominalism, as he used ‘singular’ and ‘individual’ symbols to refer to generals.

 I believe Michael has mistaken the grammatical singularity of a term with its ontological individuality: the use of singular terms for general concepts is a representation of the unity of a concept, not of necessarily of its numerical individuality. This, in my opinion, is yet another case in which Peirce is misunderstood in his Scotistic approach, as unity is only considered as ‘numerical unity’.

Nonetheless, there is available evidence of Peirce rejecting scholastic realism and claiming nominalistic attitudes, in ‘An Unpsychological View of Logic’ of 1865 he wrote:

Qualities are fictions; for though it is true that roses are red, yet redness is nothing but a fiction framed for the purposes of philosophizing; yet harmless so long as we remember that the scholastic realism it implies is false. (W1: 307)

My interpretation of this claim is that Peirce indeed recognised that there is a ‘scholastic realism’ that accepts that ‘redness’ is more than a fiction, and that the belief in that fiction is false. This is certainly a nominalistic claim, though shows awareness of what ‘scholastic realism’ means. Peirce’s awareness of ‘scholastic realism’ does not mean that he was an scholastic realist in 1865, but it shows that he was considering the issue seriously. Peirce’s engagement with the problem generated a conversation with W. T. Harris (W2: 132-161, 1868) that eventually led to the production of the JPS series. Peirce even played the role of the nominalist in his conversation with Harris, but the tone of his writing reveals that he is arguing against the idealism of Harris, rather than his realism, in which both eventually agreed (W2: 192). Peirce’s conversation with Harris in an engagement on the side of the nominalist, which he aimed to consider seriously for the sake of objectivity:

Everybody ought to be a nominalist at first, and to continue in that opinion until he is driven out of it by the force majeure of irreconcilable facts (CP 4.1).

The serious treatment of nominalism, however, does not imply commitment to nominalism. In ‘Questions of Reality’ (W2: 165, 1868), Peirce revealed that he is familiar with the ‘Scotistic definition’ of reality. The Scotistic definition is already a fundamental part of what is called ‘cognitionism’ in a later reference to his early doctrines. ‘Cognitionism’ is a philosophical position with nominalistic elements, nonetheless a realism of cognition and concepts. Peirce reports an influence of Chauncey Wright in the production of this doctrine:

…cognitionism, a point of view which it is probable that both James and I were led to take by the influence of our common friend,-not to call him our teacher,-Chauncey Wright, who unquestionably derived that way of thinking from John Stuart Mill, whose enthusiastic follower he was (MS 655, 32).

In whichever way Wright influenced Peirce, it is still clear that he gave, even at an early stage, a particular metaphysical laden to the concept of ‘cognizability’. Peirce wrote:

…cognizability (in its widest sense) and being are not merely metaphysically the same, but are synonymous terms (EP 1: 25; CP 5.257, 1868).

Other Peirce’s scholars like John Boler (1963) or Rosa Mayorga (2009) have focused on the late Scholastic realism, and have little disagreement with Fisch on the topic.

It can be noticed, therefore, that my opinion is certainly novel and somehow opposes the received wisdom. I believe my position is substantiated in the evidence of a basic realist agreement contained in the ‘Scotistic definition’. What Peirce calls ‘his nominalism’ is actually an incipient Scholastic realism teeming with nominalistic elements, but already informed by Scotus’ definition of reality and a concern in the reality of universals. The views expressed in the *Berkeley Review* result, from my view, in a naturally predictable statement of Peirce’s ongoing research on reality from 1865 to 1868.

## Some unresolved complications

Explaining Peirce’s early account of reality as unified at this stage is not feasible. It must be acknowledged that there are many untied laces in the trend of Peirce’s argumentation and, moreover, problems in these ideas. This chapter comes to a close pointing at some of the problems, so it can be understood what kind of answers Peirce provided in his developed later accounts. I remind the reader that Peirce’s use of the conceptions of the tradition might be considered eccentric, but they make good sense provided the ways he clarifies their meaning: such is the case for his use of the terms ‘nominalism’, ‘Platonism’, ‘real’, ‘existent’. It has been seen, for example, that the problem of universals emerges from Peirce’s ideas as an axis for an account of reality after terms are reformulated: carrying such reformulation of the vocabulary permits to identify salient features of his early works. I defended here that Peirce’s Scholastic Realism is present in his early writings before the *Berkeley Review*.I am aware of defending a novel and perhaps contentious interpretation, but my reading guarantees continuity between the JPS series and the *Berkeley Review*. The traditional reading makes the *Berkeley Review* appear as an anomalous text.

In spite of giving us a great insight I how thought is comprised by signs accounting for continuity and universality, Peirce did not offer an account of how the signs-thoughts actually operate. He did not explain how the hypothetically acceptable true continua (we will define what continua are in the chapter devoted to continuity) are included in them. A detailed and complete account of signs is needed.

Up to this point is clear that an account of reality can be offered in either nominalistic or realistic premises. There is a lack of explanation in how Scholastic Realism grounds general metaphysics. Although Peirce sympathized with the method of mathematics, he did not offer an account of the foundation of mathematics and the grounding of methodology in mathematical inquiry, as he mentioned. Moreover, it is unanswered how does the method relate with the theory of signs.

Peirce hinted in a fallibilistic character of inquiry, but it is not clear how that character relates with the normative character of self-controlled inquiry. Could it mean that the ‘science of inquiry’ itself is fallible and normative at once? This early Scholastic Realism is a theory of reality opposed to the nominalistic one, but it is not clear how is better off in explaining how the science of inquiry holds a normative character and the fallibilistic character at the same time.

It has been noted, finally, that a theory of truth based on the impinging reality of universals must grant access to convergence in the final opinion. It might be objected, however, that universals seem to be of not much help for the case of lost facts or buried secrets. I will consider this problem in Chapter Three and Six providing an answer to these worries. Peirce had to think these questions very seriously and endeavour changes and developments. He did not, however, abandon neither his project of ‘scientific metaphysics’ nor his doctrine of ‘Scholastic realism’.

# Chapter 3. A Pragmatic Account of Reality: Peirce’s ideas about Universals in the 1870s “Illustrations on the Logic of Science” papers

In Chapter Two, I summarised some of the problems that emerged when Peirce offered a first intent of an account of reality. The topic of reality as a problem becomes relevant when we articulate the relations between truth and inquiry. Peirce was aware of the problems involved in that first stage, and was steadily moving from a thin to a stronger version of his ‘Scholastic Realism’. In this chapter, I shall address the relations between pragmatism and reality as reflected in the shift offered by the ‘pragmatic maxim’. The documents of this period are the papers of the *Illustrations on the Logic of Science*. Bearing in mind this maxim, I will also analyse the nature of reality as a ‘fundamental hypothesis’. This analysis will be made against the background of Peirce’s theories of inquiry and meaning, both contained in the advances in his philosophy over the period. I will also clarify the place of ‘universals’ or ‘generals’ in this discussion and show how their correct understanding will reveal an interpretation of Peirce’s theories of inquiry and meaning.

The amendments that Peirce carried in the conception of reality are related to the birth of the first formulation of the Pragmatic Maxim. Nonetheless, as the name of the collection of papers of this period hints, the whole work is meant to illustrate “the method of science”. Peirce was working previously on a Treatise on logic that was never published. These works can be situated around 1873 (see Hookway 1985, 42), and might have been an important influence on the more systematic worry about adding something beyond a purely logical grounding to the hypothesis of reality. The collection is an interesting combination of both logical and epistemological insights. Even more interestingly, the point of the *Illustrations* rests on a metaphysical claim about reality.

In the previous chapter, we observed that realism of universals was a stance obtained in accepting the objectivity needed to give sense to cognitions through signs, especially signs of recalcitrant properties. In his *Berkeley Review,* Peirce developed a conception of reality that seemed to him *evident* from the fact of the convergence of opinion. A repetition of the claim found in the *Berkeley Review* testifies to that conviction:

…. To say that thought tends to come to a determinate conclusion, is to say that it tends to an end, is influenced by a *final cause*. The final cause, the ultimate opinion is independent of how you, I or any number of men think. (MS 393, p.1)

 Peirce was not entirely happy with such a thin conception of reality; in this chapter we will see a shift in the conception of reality as a *fated* agreement. Reality will still depend on a logical conception, not as an assumption given in the norms of inquiry of the community, but as a pragmatically confirmed hypothesis that we are guaranteed to *hope* in virtue of those norms of inquiry. Now, in order to understand this change in his perspective we need to make sense first of how a hypothesis can be confirmed or defended pragmatically. The task here will imply attention to the documents contained in the *Illustrations on the Logic of Science* series, produced in the last two years of the 1870s. We are not only concerned with an exploration of a general realism, but also in tracking down what ideas about universals were developing and why. This will hopefully give us a general picture of how Peirce aimed for an even more substantive metaphysical conception of reality and generals. The following papers comprise the ‘Illustrations of the Logic of Science’ series:

* ‘The Fixation of Belief’ (henceforth ‘*Fixation’*), November 1877.
* ‘How to Make Our Ideas Clear’ (henceforth ‘*How to Make’*) from January 1878.
* ‘The Doctrine of Chances’ March 1878.
* ‘The Probability of Induction’ April 1878
* ‘The order of Nature’ June 1878.
* ‘Deduction, Induction and Hypothesis’ August 1878.

It is important to notice that two papers stand out in importance from the rest: *Fixation* and *How to Make.* In *Fixation,* Peirce put forward a first approach to his theory of inquiry and in *How to Make* he introduced his theory of meaning.We will see how *Fixation* takes us into a systematic study of the different ways of settling belief conceived as methods (although they should be, as Hookway affirms, better named as *epistemic characters*). According to Peirce and following the track of the last chapter, some of these methods are inspired in the nominalist conception of reality; these methods, therefore, fail to give a successful theory of how we could have beliefs fixed in a rational and controlled way. Peirce is also concerned with giving an account of the justifications for the different methods of inquiry. These methods are considered as ways of fixing belief. Peirce gave us a clear understanding of what he recognises as the ‘method of science’: This is the only method based in observation, experimentation, and confirmation of hypothesis by a community of self-uninterested researchers. In *Fixation,* Peirce established a programmatic and systematic account of ‘Scientific Metaphysics’. Scientific Metaphysics is opposed, as we will see below, to a priori metaphysics (synonymous to ‘ontological metaphysics’). He does not openly speak of pragmatism yet, but as we will see below, this is the first theory of inquiry that goes hand in hand with pragmatism. This same theory is a requisite in his paper in the theory of meaning, i.e., *How to Make*.

In *How to Make,* Peirce expresses some startling claims about truth: For example, that the true opinion is one which is *fated* to consensus. However, in spite of claims like the latter, as noted above, one of his pressing concerns involved overcoming the objection of relativism supposed in the concept of ‘consensus’. Peirce intended to ground the final opinion in reality rather than in consensus; the means of doing this is the development of an account of ‘convergence’. As for the concept of ‘convergence’ we will review it in more careful terms than those used in the series of papers mentioned in Chapter Two: in this period, there is less talk about ‘cognition’ and more about ‘belief’, less concerns about the errors of Cartesian epistemology and its related doctrines, and more attention to a pragmatic clarification of the concepts of reality and truth.

Peirce attempted an investigation into the different ways of accomplish belief fixation; by doing this, he made sense of the logical ways to do this: the logical task derives from the discovery of the right method and epistemic character involved in the ‘method of science’. Peirce was concerned with the norms of inquiry that govern logic and thought in general. This concern applied not only to particular logical systems. In other words, he was trying to discover the *Logica Utens* involved in thought. That sense of logic: ‘Logica Utens’ is regulative and strong enough to warrant belief as fixed rationally. Borrowing the scholastic terminology, possibly leading back to Avicenna, Aquinas and Scotus, Peirce often contrasts *Logica Utens* and *Logica Docens*. On the one hand, *Logica Utens* refers to the standards “employed in the evaluation and control of deliberation of reasoning” (Hookway 1985, 43). On the other hand, *Logica Docens* represents the theories articulated by the logicians in concrete systems of an axiomatic nature.

The account of truth present in these papers is still one that speaks about the ‘final opinion’ in which all who investigate will be *fated* to converge. However, although truth is indeed regarded as the end of inquiry, it is not clear if the word ‘end’ here means a concrete complete set of propositions, as opposed to an ideal but still vague limit; a limit towards which opinions will tend to gravitate if self-controlled inquiry were to be carried out. I will defend the latter as the correct interpretation. Peirce’s critics tend to interpret in the former way: as though he proposed a constitutive interpretation of truth in which the final opinion is a concrete particular proposition. Against the common reading, I believe that Peirce was setting a pragmatic clarification of truth. Peirce’s vocabulary of ‘clarification’ opposes the interpretation of truth as a single individual proposition that would push truth to nominalistic theorising. Cheryl Misak, talking about Peirce’s account of truth says:

…Peirce answers ‘yes’, but argues that such methods are in fact unable to settle belief permanently… the only method that is able to result in true beliefs is the method that, prima facie, we want to affirm –the method of science and reasoning. That is, true beliefs are not ‘merely’ going to be permanently settled upon. They would in fact be settled in a way which we all think is admirable (Misak 2004, 56)

In talking about the big picture of these works, there are some characters that distinguish this new series of the *Illustrations on the Logic of Science* from previous works. These might be understood better by the distinctions advanced in the articles themselves. One feature worthy of attention is the distinction between observation and reasoning. Reasoning is characterised as controlled deliberation, its perceptual input is meant to be monitored by deliberation carrying out the results of observation.

 Perceptual input provides part of an account of how our opinions are constrained by reality; and a practice of deliberate reasoning provides a focus for the evaluation and justification of methods. (Hookway 1985, p.43)

The importance of this distinction lies in our capacity to not confuse different qualities: both perception and observation are pervaded by inferences; reasoning receives input, but also exerts an influence in what we sense. In a way, this is a natural distinction that results from a negation of foundational intuitions, addressed in the previous series of papers (The *Journal of Speculative Philosophy* series): reasoning does not work with foundational blocks; it rather interacts with our perceptual capacities. The interactions of reasoning and observation find harmony in the concept of ‘convergence’ analysed below.

There is a further distinction present in the works of this period: probably dating back to the years of the unpublished book of logic. This distinction divides two aspects of logic as a result of the intense study he carried in the medieval logicians. This is the aforementioned distinction between *Logica Utens* and *Logica docens*. Both characterisations of logic are concerned with the standards in the evaluation and control of reasoning. As the reader might identify from the Latin etymology, the former means “the logic we use” and the latter means “the logic we teach.” Following Susan Haack, though, I offer a more technical sense of the distinction. *Logica Utens* means the norms of correct reasoning given in the canonical applications of logic in general; whereas *Logica Docens* means the concrete system that captures validity from a set of axioms and stipulations provided in a concrete system. Peirce developed a *Logica* *Docens* when he intended to write a book on logic. He created the logic of relations that underlies the first formulation of his Categories in ‘A New List of Categories’. The list is based on an account of logic of relations understood as a system of concrete inferences. The system is very closely related to the one developed by Augustus De Morgan (1864) around the same time. All these efforts are examples of *Logica docens* approaches to logic*.* However, Peirce was researching a different path to understand the *logica* *utens* of the scientific investigator too. The norms of inquiry are the guiding principles that Peirce thought to be true, and thus he formulated a general rule of inference that clarifies meaning: the ‘Pragmatic maxim’. In the pragmatic maxim Peirce found convergence: the norms of inquiry understood as the logic we require for scientific inquiry meet up reality. Convergence, conceived in such a way, determines both our opinions and the facts of our perception. The pragmatic maxim embraces the two aspects of observation and reasoning into one guiding principle. To adopt the method of science means adopting the fundamental hypothesis of reality: “there are elements independent of our opinions and thus determining them”. The presupposition is that the discovery of a *Logica Utens* cannot contradict the hypothesis of reality. The *method of science* unveils the *Logica Utens* involved in inquiry. However, the method of sciences ought to be proven better than the alternative methods; we will see how the alternative methods result specious after considering the ways in which they fail to settle belief appropriately. Peirce, nonetheless, was not altogether satisfied with the reasons he offered to explain how reality and truth relate in the achievement of a final opinion. In a Chapter Five it will be shown how he dealt with the problem of truth and convergence by offering a more substantive account of how experience and *Logica Utens* are related in an account of ‘metaphysical continuity’. Now, however, we will try to explore a theory that even though Peirce himself recognised as obscure, hurried and unsatisfactory. I believe this theory still holds valuable insights. Peirce regulated the meaning of ‘final opinion’ by using a vocabulary of approximation: the concept of ‘final opinion’ refers to limiting settled beliefs that turn out to be indefeasible or stable. In spite of his efforts, he will use less and less the expression ‘final opinion’, as it turned out to be powerfully suggestive of an “indicative” interpretation: the ‘final opinion’ understood as an individual definite proposition.

1. Belief and Truth

Peirce fleshed out a theory of inquiry and meaning holding consequences for the notion of truth. It is not straightforwardly a theory of truth on its own, rather a pragmatic clarification of what considerations we ought to adopt in using the predicate ‘true’ in his theories of inquiry and meaning. The theories of inquiry and meaning do not need a theory of truth in the ‘constitutive’ sense. Constitutive theories of truth define and rule out the meaning of truth: they can be either coherentist or correspondentist. For Peirce’s clarification of truth: the issue is not about a theory of correspondence or a theory of coherence expressing definitional aspects of truth; Peirce’s ideas about belief were rather in the direction of obtaining a pragmatic clarification of truth. However, a pragmatic clarification of truth not only clarifies our uses of truth, it actually concerns the relations with reality required for truth-making through the process of inquiry. A pragmatic clarification of truth finds, for Peirce, a basic correspondentist core as unproblematic, Peirce indeed wrote in ‘The Doctrine of Chances’:

Truth consists in the existence of a real fact corresponding to the true proposition (EP1: 147).

However, the correspondentist account alone is insufficient and pragmatically sterile. Thus, truisms about correspondence between propositions and states of affairs are not necessarily mistaken; they catch a common-sensical feature of truth. These, however, are utterly limited to express how truth guides inquiry, as they can only capture a single aspect of our uses of “true”. Consequently, truth cannot only be the content of a proposition, but an aim needed of consideration to attain a proper fixation of the belief in an indefeasible state. ‘Indefeasible state’ means that a belief will not be overthrown by further evidence. Before introducing further details on Truth as the aim of inquiry, it will be necessary to express how the acquisition of a belief is conceived as a process, as opposed to an inert set of self-contained propositions. In the previous chapter it has been noted that intuitions are bad companions for inquiry: these depict a process of inquiry that disregards the continuity and the dynamic aspect of inference. Now it will be seen that Peirce offered a theory of belief. Inspired in Alexander Bain’s definition of belief, Peirce´s definition of belief will recapture continuity and dynamism in terms of beliefs understood as habits of action. Bain wrote:

It remains to consider the line of demarcation between belief and mere conceptions involving no belief - there being instances where the one seems to shade into the other. It seems to me impossible to draw this line without referring to action, as the only test, and the essential import of the state of conviction even in cases the farthest removed in appearance from any actions of ours, there is no other criterion (Bain 1859, 595)

There is advantage in conceiving a belief as a ‘rule of action’: as opposed to a ‘picture’, a belief is better understood as a process. This conception of the Scottish philosopher Bain helped Peirce to oppose a conception of knowing as ‘seeing’: beliefs are not isolated elements of a definitive frame that reflects a ‘state of affairs’. Peirce acknowledged the influence of Bain’s ideas in his pragmatistic philosophy with later statements like this:

In particular, he [Nicholas St. John Green] often urged the importance of applying Bain's definition of belief, as "that upon which a man is prepared to act." From this definition, pragmatism is scarce more than a corollary; so that I am disposed to think of him as the grandfather of pragmatism ('Pragmatism', CP 5.12, 1907).

It should be noted that Chapter Two is mostly a critique of Cartesian epistemology; in this chapter we will review Peirce’s positive views grouped in his theories of inquiry and meaning. Previous to the exposition of the positive views, there are important objections against Bain’s definition of belief that need consideration:

1. Many beliefs are unconnected with any actions we could perform.
2. Any habit of action will depend upon many beliefs and desires. How any one belief is particularly implicated?

Peirce’s interpretation of habits of action should not be mistaken as the belief that each belief has to be translated into actions we can perform: Peirce’s reading includes propositions that we conceivable use in effective inferences. Objection (1) is an effective denial that a habit of action is a particular verification of a belief given in our practical lives. Objection (2) highlights the fact that habit of actions can be dependent upon more than one belief and desires. This interpretation of a habit is equivalent to a disposition. Peirce’s interpretation of Bain’s definition, however, should be understood as an interpretation of ‘habit’ as a self-controlled conduct rather than a mere disposition. Peirce clarified these issues in later years with these words:

A Belief is a state of mind of the nature of a habit, of which the person is aware, and which, if he acts deliberately on a suitable occasion, would induce him to act in a way different from what he might act in the absence of such habit.

[---] If a man really believes that alcohol is injurious to him and does not choose to injure himself, but still drinks for the sake of the momentary satisfaction, then he is not acting deliberately. But a habit of which we are not aware, or with which we are not deliberately satisfied, is not a belief.

An act of consciousness in which a person thinks he recognizes a belief is called a judgement. The expression of a judgement is called in logic a proposition." (EP2: 12, 1895)

Consider the Darwinian belief of our hominid ancestry: there seems to be no action we could perform associated to this belief. However, Peirce’s interpretation of a habit of action implies that the uses of a ‘proposition’ with such concept produce the ‘habit’ of performing inferences in which the belief continues to be meaningful and is used in a controlled and logical way. Inferences, in Peirce’s interpretation of Bain’s definition, could be understood as habits of action if they are self-controlled: they have ‘conceivable’ consequences and uses that can prove themselves indefeasible.

Peirce established the difference between belief and doubt in naturalistic terms: if we believe a proposition we perceive that the proposition “guides our conduct and shapes our actions” (CP 5.371). Beliefs, conceived in Peirce’s interpretation of ‘habits of action’ imply that they do more than mirroring a disposition given in our previous successful inferences. The concept of ‘habit of action’ points out to dispositions that will be prompted by our beliefs in future self-controlled actions or inferences. To doubt a proposition means to prompt a conduct of inquiry (not only single actions) aimed to find out whether the proposition is true. This means, in turn, acting in consequent ways after a belief. The following schema might help to identify the kind of commitments involved in the concepts of both doubt and belief. It should be noted that they are always relative to a content represented by ‘p’:

Doubt about p:

1. A doubt is a state prompting inquiry into whether p,
2. the inquiry aims for the truth of p,
3. The aim is the settlement of p (and the consequent disappearance of the doubt).

Belief in P:

1. A belief in p prompts actions (contained in the practical consequences of the meaning of p): it has the form of a habit of action,
2. It does not prompt inquiry into p, but accepts a fallible attitude towards p,
3. The aim of a belief, however, is to finally contribute with habits in the actions of a community.

The rejection of the Cartesian doubt reviewed above is not a full rejection of the possibility of holding doubts. Rather, the rejection of Cartesian doubt aims to provide a distinction between *genuine* and *artificial* doubt. This proceeds through the lens of criterion given in inquiry. Peirce called that criterion “the irritation of a doubt,” which is probably a central feature of the doctrine of fallibilism in future stages of Peirce’s thought. Peirce formulated doubt in the following terms:

Doubt is an uneasy and dissatisfied state from which we struggle to free ourselves and pass into the state of belief; while the latter is a calm and satisfactory state which we do not wish to avoid, or to change to a belief in anything else. On the contrary, we cling tenaciously, not merely to believing, but to believing just what we do believe (CP. 5.102).

 Peirce understood the state of ‘irritation of a doubt’ as a state of unease, an unsettling worry about a problem that have no satisfactory solution in immediate experience. When we use a method of inference we tune and connect our beliefs with experience. Thus, doubt is not just a matter of a feeling of dissatisfaction. Peirce wanted to address a positive realisation for the need to carry inferences to attain belief. The inferences in question tune and effectively connect beliefs with experience. Peirce recapitulated some of the ideas noted above by stressing on two vicious positions of foundationalism and scepticism as problematic results of ill-conducted inferences. Foundationalism and scepticism crop up from a mistaken account of inquiry. The Foundationalism that concerned Peirce affirms that there is an ultimate belief from which all other belief should be inferred. The problematic version of scepticism to be avoided affirms that the number of rational beliefs is zero. The mistake of both doctrines becomes apparent when we understand inquiry as the struggle for the settlement of opinion. Both vicious stances block the road of inquiry in different ways: the foundationalist errs by linking concepts to a mysterious and ultimate thing-in-itself at the basis of inference. The sceptic blunders dismissing anything that is not grounded in a foundational way. To conceive ‘doubt’ as a state of irritation means resisting the Cartesian conception of doubt. Doubt is not a passive state in which we appear intellectually sceptic to any belief whatsoever for no relevant reasons. This passive state of doubt is, for Peirce, a nominalistic attitude: it follows from conceiving belief as an isolated content that is ultimate and foundational for inference. The nominalistic conception of doubt derives in the requirement that our beliefs should be completely and absolutely infallible.

1. Other Methods of Inquiry and the Method of Science

As noted above, Peirce reviews other methods of belief-fixation. He did not reject them completely. Peirce rather demonstrated that the adoption of a nominalist theory of reality amounts to failure to describe how science works. It has to be said that Peirce’s context is the science of the nineteenth century. He believed that science at this epoch has finally achieved a state of proper maturity. I will briefly describe each of the methods reviewed by Peirce and explain how they are scrutinised through the lens of his hypothesis about a mind-independent reality.

First, the method of tenacity consists in clinging to a belief tenaciously and in spite of any evidence. That grip gives some satisfaction to the believer; she wants to uphold the belief because it seems to be a belief that not conflicting with his previously held beliefs (EP 1: 115). The method gives some comfort to people who do not want to be challenged. However, there is something fatal for this method. According to Peirce, the “social impulse” acts against the tenacity and the method becomes unable to be held in practice (EP 1:117). The social impulse is not something beyond public evidence, it is rather a confirmation that other inquirer’s judgement clashes with something adopted and thus, crying for revision. There is a conception of belief assumed in this method: it does not acknowledge that beliefs are influenced by any other belief. In reality, however, the community is always transforming beliefs as a matter of fact and, therefore, the method falls short to explain changes in belief. If the nominalist theory of reality was true, our beliefs surely might come to a fixing prime intuition. In the previous chapter, however, I offered a number of reasons to explain why such account should be rejected. One of the reasons to recall is the dubious service that intuition renders to an account of cognition. The method of tenacity, thus, hampers further inquiry by avoiding the questions that emerge when a problem is fully considered. The avoidance of tenacity is based in a tenacious espousal of a single way of understanding either the content of a belief or the negation of beliefs that are in discordance with that belief.

The second method analysed is the ‘method of authority’ (EP1: 117-8). The method consists in adopting a belief because it is warranted by an influential authority. On the positive side, the method of authority seems to be connected with a community, and thus provides an explanation of changes in belief. Unfortunately, the connection is ill-conceived: this constitutes its downfall; insofar as it is based on what a community says when is not based on inquiry. This can be observed in the case when an authority that conceives its belief as permanently fixed; there is no control given by the contrast against experience. The fixation of the belief is subjected to the stubbornness in error given by the selfish interest. This biased interest drifts away from aiming to truth. The method of authority is exemplified in multiple ways: institutions, churches, associations, social classes, governments try to steer the minds and opinions of the people subjected to them. These institutions often force or repress either contrary opinions or viewpoints that might end up in the rejection of their beliefs. The method clearly blocks the path of inquiry by passively or aggressively imposing a halt to the road of further investigation.

The third method assessed is the ‘The method of the *a priori*’ (EP1: 119-20). This methodaims to be more systematic and based on what seems *agreeable to* reason. This seems to be more intellectually respectable: at least it filters belief throughout the verdict of some set of rational standards. Compared to our previous descriptions the reliance on reason might be considered as an asset. However, reason itself is insufficient for inquiry if drifts away from experience. The failure of the a priori method derives in a fatal separation between reason and experience; a clash between what we believe and what evidence seems to set against it:

It makes of inquiry something similar to the development of taste; but taste, unfortunately, is always more or less a matter of fashion, and accordingly metaphysicians have never come to any fixed agreement, but the pendulum has swung backward and forward between a more material and a more spiritual philosophy, from the earliest times to the latest. (CP 5.383)

The *a priori* method runs the risk of concealing an unjustified separation between rational principles and reality. Indeed, if we only follow the principles of our mental lives we tend to deny the recalcitrant evidence that denies the infallibility of those principles. We might feel very confident about the adoption of some principles that we believe rational. For example, our confidence in the intuitions proposed as a systematic and coherent explanation of what a concept means is agreeable to reason. However, if evidence pushes against our confidence our intuition might be proved wrong and not an alleged infallible rational principle. Thus, I could possibly believe that after a terrible airplane crash the passengers are extremely unlikely to survive and therefore thin that there were no survivors; but my allegedly reasonable point can be overthrown by a survey that needs to confirm that prediction. My preference to believe in my statistical analysis could prevent me to make the second step of doing a proper search for survivors and, thus, my preference will clearly block the path of an inquiry that throws evidence of the very unlikely survival of some passengers.

The results of adopting the method of a priori are, for Peirce, conducing to what he called ‘a priori metaphysics’. I will consider this metaphysics synonymous to ‘ontological metaphysics’. As opposed to scientific metaphysics, a priori metaphysics forgets that metaphysics should be based on observation and attention to the results of science. A priori metaphysics results in metaphysics based on a priori principles and thus, becomes dogmatic. Peirce introduces, finally, his ‘method of science’ (EP1: 120-3). I claim that this method is a result of the adoption of an early version of Scholastic Realism. Indeed, the method of science privileges the hypothesis that reality is comprised by the elements independent of our opinions. These elements need to be universals because sciences provide general principles based on regularity. Scholastic Realism is presented as the right method because balances experience and *Logica Utens.* The method of science has not to appeal to the ‘social impulse’ is the following: A defence of the argument says that the realist hypothesis is an assumption of controlled inquiry, and thus, of *Logica Utens*. Even if not clearly articulated in a *Logica Docens,* it is clarified by a maxim that Peirce introduced. The maxim will be quoted below.

Peirce affirmed that the correct method ought to adopt the hypothesis of reality. He proceeded to describe the Scotistic definition of reality once again. In this period, he spelled the definition in the following way:

There are Real things, whose characters are entirely independent of our opinions about them; those Reals affect our senses according to regular laws, and, though our sensations are as different as are our relations to the objects, yet, by taking advantage of the laws of perception, we can ascertain by reasoning how things really and truly are; and any man, if he have sufficient experience and he reason enough about it, will be led to the one True conclusion. The new conception here involved is that of Reality. It may be asked how I know that there are any Reals. If this hypothesis is the sole support of my method of inquiry, my method of inquiry must not be used to support my hypothesis. (EP1: 120)

After reading the quotation above, it will be noted that there is a correlation between the laws of perception and the laws that are independent of our opinions, i.e., real generals (=universals). There is no full explanation in the whole series of papers of the exact nature of the correlation. However, in the summary quoted above some precisions were introduced. Peirce certainly did not change what he said in the *Berkeley Review*, but the precisions are relevant. Let us appreciate these with detail in the following quotation:

The new conception here involved is that of Reality. It may be asked how I know that there are any Reals. If this hypothesis is the sole support of my method of inquiry, my method of inquiry must not be used to support my hypothesis. The reply is this: 1. If investigation cannot be regarded as proving that there are Real things, it at least does not lead to a contrary conclusion; but the method and the conception on which it is based remain ever in harmony. No doubts of the method, therefore, necessarily arise from its practice, as is the case with all the others. 2. The feeling which gives rise to any method of fixing belief is a dissatisfaction at two repugnant propositions. But here already is a vague concession that there is some one thing which a proposition should represent. Nobody, therefore, can really doubt that there are Reals, for, if he did, doubt would not be a source of dissatisfaction. The hypothesis, therefore, is one which every mind admits. So that the social impulse does not cause men to doubt it. 3. Everybody uses the scientific method about a great many things, and only ceases to use it when he does not know how to apply it. 4. Experience of the method has not led us to doubt it, but, on the contrary, scientific investigation has had the most wonderful triumphs in the way of settling opinion. These afford the explanation of my not doubting the method or the hypothesis which it supposes; and not having any doubt, nor believing that anybody else whom I could influence has, it would be the merest babble for me to say more about it. If there be anybody with a living doubt upon the subject, let him consider it. (EP1: 120)

Such long citation allows appreciating that there are some novelties here: Peirce seemed to place Scholastic Realism in a context marked by inquiry. Thus, he described the hallmarks of a confirmation of the method. The confirmation includes elements of social impulse, experience, and *Logica Utens*. This long description, though, was still negative: it explains that the ‘method of science’ does not incur in the conflicts of the other methods. Indirectly, then, the method succeeds in settling belief. Surely, it might be objected, this is not enough to describe a method. For the reasons mentioned, then, Peirce presented a whole new doctrine. The doctrine accounts for the performance ‘method of science’ in action. The criterion of a good performance is provided in the pragmatic maxim: the norms of inquiry given in the method of science come together with a theory of meaning. The theory of meaning specifies the consequences of belief in terms of its content. This move, hitherto, seemed to allude to the idea that Peirce’s philosophy pushes the boundaries of inquiry as much as necessary. The result of the strain in continued inquiry proves the belief in the generality of reality as a plausible hypothesis.

1. Inquiry and reality

This analysis has shown so far that the hypothesis of reality is a core presupposition of the method of science. Peirce, however, thought that the hypothesis could not be only assumed, but confirmed. Peirce argued for confirmation of the hypothesis by subjecting it to examination through the light cast by the practical consequences. In other words, passed through the sieve of the maxim, the method clarifies what the meaning of the belief in reality is. After assessing the consequences the outcome is quite clear: under these premises, no nominalist theory can offer a coherent account of a self-controlled development of science. Science, so conceived, requires actions to be carried bearing in mind their fallible balance. Fallible balance means that beliefs must be open to the control offered by experience. If the balance is the case then the relation between fallibilism, inquiry and reality becomes apparent: fallibilism is the openness of inquiry to be corrected by experience, and the belief that the different universes of experience are real is thus confirmed. Methodologically, though, there seems to be a problem: if the pragmatic maxim assumes reality, then the hypothesis or reality proved by it seems to be justified in circularity. This is not the case, what the maxim assumes is a *definition* of reality as “whatever is independent of the figments of imagination”. The hypothesisof reality (EP 1: 138-40), thus, predicates that there are entities as universals that are independent of the figments of imagination. The confirmation of the hypothesis is different from the definition. The confirmation overcomes the problems of the nominalist hypothesis that eventually results pragmatically devoid of meaning. In this period, then, Peirce tailored a view of reality with the following characteristics:

* Preserves an anti-nominalist theory of truth and reality.
* Holds that reality is of “the nature of thought” (MS 393)
* This view of reality stresses more the important idea that reality constraints our opinions.

In ‘How to make’ (EP1: 124s), Peirce wrote that the ‘true opinion’ is fated to be the object of ultimate consensus. These claims do not help Peirce’s cause: it makes us think in the ‘final opinion’ as singular and relative to a community’s consensus. These two considerations make the theory more than troublesome and aim of objections of relativism and the problem of ‘lost facts’. I will address these objections below. Peirce actually meant that the ‘true opinion’ is equivalent to the appropriate settlement of opinion due to the method of science. Presupposing and then confirming the hypothesis of reality are two stages in the same process: when we inquire we have standards and norms, regardless of having different idiosyncratic backgrounds, we strive for finding an indefeasible belief; that belief is only guaranteed by experience, but experiences are not only held individually, but collectively. In this period Peirce felt confident that this convergence can be understood as fated: that enthusiasm was not to last. It was not contrasted of his later “thoroughgoing fallibilist” attitude. Even though the convergence might actually not be fated, the hypothesis of reality does not seem to contravene fallibilism for reasons I will try to spell out below.

There are some further elements worthy of consideration in the ideas of reality and truth in these papers. First, there is an emphasis on the justification of the methods of inquiry and the norms of inference. Second, there is a comparison with the other methods and a way of giving an explanation for why the method of science is the only one rationally convincing method as it could effectively be put to the test under the light of practical consequences. The three other methods conflict with the hypothesis of reality. The fourth method is successful: incorporates the assumption of the theory of reality. If Peirce believed that “the settlement of opinion is the sole end of inquiry”(EP1: 115), truth, then must relate with settlement. This means that beliefs do not attain absolute truth. Truth and reality seem to be coextensive: holding the hypothesis of reality means accepting a pragmatic clarification of truth. I will challenge this relationship between the two concepts in another chapter, as the identification of both concepts leads to unsolvable problems. For now, it is enough to realise that there is a close relationship between the two concepts.

1. The Pragmatic maxim

The pragmatic maxim is articulated in the context of explaining the method of science, thus, it is understood as a distinctive rule for clarification of the contents of concepts and hypotheses. According to Peirce, there are different degrees of clarity. Those degrees are found in the knowledge of a concept and how can be distinguished from other ones. The best way to clarify, however, is found in the maxim that spells out what are the practical consequences of adopting a belief. The clarification given in this third degree goes beyond the conceptual clarity and the distinction from another concept. The clarification is found in the practical consequences. The first canonical formulation of the maxim is found in *How to make,* later called the ‘Pragmatic maxim’:

Consider what effects, which might conceivably have practical bearings, we conceive the object of our conception to have. Then, our conception of those effects is the whole of our conception of the object. (EP1: 132)

Peirce offered an illustrative example: if something is called *hard* that would mean that “it will not be scratched by many other substances”. The concept could be useful when to me when I am wondering how to drill a surface, break an object, and the like. A consequence, however, is that the concept is empty if detached from sensible effects or practical consequences. At this stage the maxim has a verificationist character: “our idea of anything is our idea of its sensible effects” (EP1: 132). In *How to make* Peirce applied the maxim to the religious belief in transubstantiation, showing it devoid of meaning: there are no practical consequences that could follow from the meaning of bread not being bread and wine not being wine. Years later on, Peirce’s theory of signs could possibly offer another reading to the symbolic character of the idea behind transubstantiation. His analysis, however, shows that there are serious problems in beliefs with meanings that are not given in terms of habits of action. Nevertheless, the principle is not an empiricist maxim: the phrase “conceivably practical bearings” can be read having a futuristic sense (Apel 1981), i.e., having implications for what we should *do,* beyond what we have done in the past.

Putting the more favourable alternative interpretation aside, the example of the hardness of the diamond offers a structure given in indicative mode. Therefore, the example shows a more verificationist interpretation of the maxim, an empiricist viewpoint. This ‘nominalist’ interpretation of the maxim was later harshly rejected by Peirce. I will show below how he tried to correct his own example. The relationship between the method of science and the pragmatic maxim is one of framing: the pragmatic maxim is at the core of the method of science because correlates rightly experience and norms of inquiry. In other words: the maxim correlates the hypothesis of reality given in experience with an interaction of a good account of a *Logica Utens.* The method of science, in turn, confirms that we need a standard of the kind of the pragmatic maxim to clarify commitments we acquire with the meaning of a belief. The reader might start to have some anxieties about circularity here. In Peirce’s mind, notwithstanding, he was talking about a process that is always indirectly confirmed when the road of inquiry is unblocked.

1. Degrees of clarity and generals

In *How to make* Peirce introduced different degrees of clarity or clearness (EP1: 124-7). He was probably borrowing the Cartesian terminology of clear and distinct ideas. Peirce, having as he had, an anti-Cartesian agenda, wanted to explain that the attained clarity of the previous accounts results in obscurity as it is pragmatically empty. We must not conclude that he had qualms against the importance of definition of terms, or that he opposed the formulation of concepts by their primary and secondary qualities. Rather, he aimed for further precision that was forgotten in other accounts of clarity. The degree of clarity that the pragmatic maxim provides connects belief and action: the phrase, “you’ll know them by their fruits”, summarises that in a quote extracted from the Gospel (Mt. 7:16). Now, for addressing the difference there is between a definitional clarity and a pragmatic clarity, we have to explain that it is a difference based on things that can be proven in experience. This is the case for the elements of experience pervasive to our belief about something. Thus, for example, if I want to prove my belief about mathematical sums, I carry inferences that are not contained in the definition of a sum, but that can be *performed* beyond it. The ‘real elements’ that crop out of the exercise of inquiry are the pragmatic consequences of the belief. Those ‘reals’ required by the settlement of belief confronted with experience, are identified as habits. Habits, finally, are equivalent to the real generals (=universals), even at this early stage.

The realist hypothesis, thereby, constitutes a stage in the development of Scholastic Realism. Scholastic realism affirms that there are real generals necessary for the right connection between experience and knowledge. The nominalist conception of reality criticised by Peirce cannot be clarified and, hereby, does not make sense pragmatically; it only allows us to account for individual cases without practical consequences that allow application of knowledge. The application of nominalism does not account for application of a belief in further similar cases because lacks the hypothesis of the generality of reality. Moreover: induction, as a kind of inference, seems to be supported by Scholastic Realism. Processes of inference suppose that there are real similarities in our experience of objects and, in virtue of them, we can give order to multiplicities. First and foremost, however, the kind of inference used more productively in science is abduction (hypothesis). This kind of inference results reliable upon the background that assumes the hypothesis of reality (though with a thoroughgoing fallibilist attitude). A Hypothesis is a valid inference: reality will constrain our opinion up to the point that what is reasonable for the purposes of inquiry converges with how reality through law behaves.

1. Reality as a Hypothesis

I shall recapitulate the characterisation of reality as a hypothesis noted above. According to Peirce, the elements that can be contained in the definition of reality as a hypothesis are the following: something out of the mind, whatever could influence sensation and through sensation thought, and finally, something which will be thought to exist in the final opinion (EP1: 88-90). However, if we ground our definition of reality in these elements we could still remain in the scope of the nominalistic definition.

In ‘*Fixation,’* Peirce established that one of the presuppositions of logic is the ‘hypothesis of reality’:

There are Real things, whose characters are entirely independent of our opinions about them; those realities affect our sense according to regular laws, and, though our sensations are as different as our relations to the objects, yet, by taking advantage of the laws of perception, we can ascertain by reasoning how things really are; and any man, if he have sufficient experience and reason enough about it, will be led to the one true conclusion (EP1: 120; CP 5.384)

Christopher Hookway explains the essential progress acquired for realism at this stage:

First, many philosophers are drawn to it: they believe that within the slogans and formulations we have offered, there lies a philosophical position which can be clarified and which could turn out to be true. And, second, this is an illusion. The only conception of reality that we can make sense of, *our* concept of reality is closer to the realist conception. (Hookway 2000, 95)

What is involved in the Scholastic Realism conceived as a logical conception of reality is, then, a definition of reality that is assumed by the pragmatic maxim. Reality presents us with habits of action that would be considered as real. Scholastic Realism also involves the hypothesis of reality, meaning, as noted, that there actually are real generals manifested and offered in the successful applications of the maxim. The practical bearings offered by the application of the maxim are meant to be habits of actions, i.e., generals that are involved in a belief. These generals will confirm the truth of that belief if they were to be proven as independent of the figments of our imaginations. A belief devoid of meaning is a false belief, because it has no further habits of actions that could turn out to be real. The final opinion that has been noted above as ‘fated’ in this conception of inquiry, manifests itself necessarily as true: this, however, does not mean that is a single opinion. ‘Fated’ must, therefore, be understood as forced by experience and reality. ‘Final’, hereby, means an ideal unachievable limit. Proper conducted inquiry makes us gravitate towards the limit that we call ‘true’. Consequently, the habits of action tend to a limit mind-independent, whose forces are really manifested. It follows that the final opinion could not possibly be imagined as ‘false’: there would be no habits of action forced by reality that converge towards it. Therefore, in a false opinion there is no possibility of even been genuinely believed at all.

## Some conclusions and complications: The necessity of improving Realism

Although there are many improvements in a pragmatic examination of the hypothesis of reality, Peirce was rapidly dissatisfied with this new account. He said several times that it was still too nominalistic: it only accepts as real those facts that are actually manifested. Why would the theory be so blamed of nominalism? I believe that there are a number of reasons why he was still not altogether convinced with his early account because of several reasons:

* There was a risk of mistaking the pragmatic maxim with a verification principle; he was not able to carry out a careful distinction between them unless provided a more nuanced theory of signs.
* Secondly, but no less importantly, the hypothesis of reality is not only a supposition that there are external things. The hypothesis cries for clarification among the differences in items that are either real or existent specifying which of these counts as a genuine pragmatic bearing.
* The pragmatic maxim was formulated in the indicative mode. This grammatical aspect has metaphysical implications. It implies that something is real about a belief if we *actually* unveil the pragmatic consequences for that belief in concrete actions. For example, the belief in the hardness of a diamond will be interpreted as the diamond being hard only if we try to scratch the surface. This worried Peirce as a very nominalistic interpretation of the maxim and eventually led him to give new formulations in the subjunctive mode. In order to give such an interpretation of the pragmatic maxim, it is necessary to defend a form of realism more substantive, at least more than the one involved in the logical conception of reality. Scholastic Realism needs to be substantive enough to explain how something can be real even for the purposes of conceiving practical bearings in a subjunctive way. The logical conception of reality does not give enough conceptual elements to develop the doctrine in that direction.
* I addressed an anxiety about circularity between the process of the pragmatic maxim been confirmed by the method of science, and the reverse conceptual move. Peirce seemed unhappy, in later years, with this apparent circularity. He tried to develop several proofs of the pragmatic maxim. None of them are available at this stage.
* There is another seemingly problematic circularity: it appears that the method of science needs to suppose the hypothesis of reality and then, the first hypothesis to be assessed by the pragmatic maxim is the hypothesis of reality. I had explained that this is not circular reasoning because what is supposed in the maxim is not a hypothesis of reality but a definition of it. I argue that there is no vicious circularity here because even if the method supposes an interpretation of reality, the hypothesis of reality is confirmed by the pragmatic maxim. There would be a vicious circularity if, in turn, the pragmatic maxim was based on reality, but this is not the case. However, the pragmatic maxim still remained unproved. Peirce worried that the maxim needs more grounds to be presented as the core of his “method of science” and his theory of meaning. Much more will be said on this below and about the role that the doctrine of Scholastic Realism plays in solving this problem.
* Beliefs, following Alexander Baine’s definition, are conceived as habits of action. Inquiry is presented as the struggle for the settlement of belief. The central question here, however, is why minds have the same structure of the external reality they know? How mind and experience relate? In what sense habits outside the mind are there? And, furthermore, if we are talking about the same kind of things in both cases. A clearer account is needed to answer these questions.
* In connection with the previous point, the concept of belief, as it appears, still bears some psychologistic connotation. Peirce was dissatisfied with any possible psychologistic connotation of his theories. He aimed to give a purely logical explanation of meaning and inquiry. It will be seen below how he tried to purify this aspect of his pragmatism in different occasions.
* Peirce suggested, but did not explain, why he was thinking that ‘Category realism’ was necessary to understand the different universes of experience. The logical conception of reality does not suffice to explain how things happen and could happen in experience. The logical conception of reality only concerns the contents of what we already believe.
* The logical conception of reality, as repeatedly said in this chapter, involves that the reality of the final opinion is somehow present in a belief. This cannot be the case because an opinion only contains an aspect of reality. Thereby, the final opinion needs to be explained as a regulative principle, as opposed to a concrete belief. More will be said about this problem in forthcoming chapters below.
* In addition, relative to the nature of the final opinion, convergence has been wrongly understood as the end of inquiry in an absolute definitive truth. Peirce certainly did not intend this conclusion and resisted it as a nominalistic interpretation.
* The language about the final opinion seems to convey some more problems when interpreted as ‘fated convergence’. The use of the word ‘fate’ was rapidly rejected by Peirce due to problems of ‘lost facts’: lost facts are impossible to be fated to find. The problem of buried secrets made Peirce to change the language of ‘fated convergence’ for one based in the idea of ‘regulative hopes’. I will explain the idea of a warranted hope as following from a more substantive account of reality.

Hitherto, all these remarks indicate that Peirce’s efforts will concentrate in producing improvements for his account of reality. This does not necessarily mean that he changed his mind about his theories of inquiry and meaning presented above. Rather, it means that he pursued to complete his doctrine of Scholastic Realism. The doctrine will develop to solve the problems and complications that his theories had. A more detailed theory achieves a consistent pragmatist philosophy. I argued, however, that Peirce’s dissatisfaction with the logical conception of reality did not mean that abandonment of the strands of his on-going philosophical system, it rather means that the system needed to be brought into further philosophical inquiry.

# Chapter 4. The Development of Peirce’s Realism: Categories and Evolutionary Cosmology in the 1880-90s

## Peirce’s logical conception of reality and the need for Scholastic Realism about Categories

Reasons for Peirce’s dissatisfaction with the logical conception of reality have been reviewed in previous chapters. Peirce’s development can be understood in two ways; on the one hand we can think that Peirce rejected previously adopted ideas and conceptions because he was not altogether convinced of their value. On the other hand, one could rather think that he was actually drawing consequences from the core ideas previously held and thus needed to make necessary adjustments. I prefer the latter interpretation, as long as it is consistent with the doctrine of Scholastic Realism, and thus I will understand categories taking that doctrine of Scholastic Realism (and the consequent rejection of Nominalism of universals) as guiding hints. In this chapter, then, I will explore how his account of reality became evermore substantive, gradually becoming Scholastic Realism about categories. This goes hand in hand in this period with other of Peirce’s ideas. Notably, he believed that there is development from *Tychism* to habit-taking formation of laws. Laws, thus, will be the kind of generals we expect to interpret as practical bearings given in the meaning of a belief (or, as Peirce will call it later upon the background of the theory of signs: of an interpretant). I define Peirce’s ‘Scholastic Realism’ as realism about generals and in the spirit of Duns Scotus’ account of reality, and later on, I shall explain how generals and universals are ‘thirds’ in Peirce’s realism (within a framework of Categories). However, it will be noted that his realism did not only advance in the direction of the reality of Thirds, but also that Peirce was increasingly moving towards realism about “firsts”. This prompted him to redefine the scope of ‘Scholastic Realism’ in evermore extreme versions, even accepting the realism of possibles (which will be discussed below in Chapter Six, arguing that *possibilia* have a particular ‘mode of being’). Some questions that arise from the shift into Scholastic Realism as realism of Categories are: Did Peirce make, as Murphey explains, a complete change towards a different system while preserving some of his original ideas? Or as Apel remarks, was the realism of these years required by his steady rejection of the Kantian nominalistic framework? Or, as Hookway puts it, is it rather that the questions that stimulated Peirce emphasised a different direction due to the consequences of his central theories? I will answer these questions by presenting Peirce’s system of categories as a doctrine of Scholastic Realism responding to new challenges and questions about reality in the context of an evolutionary metaphysics. In carrying that task, though, I firstly need to contextualise the meaning and scope of the concept of ‘Category’ in Peirce’s thought. The chapter will also focus on another series of papers belonging to that decade and somehow intermediating between the published *Illustration on the Logic of Science* (1870s) and *Monist* (1890s) series. After explaining the relevance of the developments and arguments advanced in these ‘Intermediate’ papers, I will also focus on what the doctrine of Scholastic Realism means for each of the three categories to finally conclude by reflecting on the relationship between Scholastic Realism about categories and the doctrine of evolutionary cosmology taking into account the works of other scholars of Peirce, especially Murray Murphey, Karl-Otto Apel and Christopher Hookway.

## What is a Category?

Categories are systems of classification of the most general aspects of reality. Categories privilege the utmost general properties, in which objects might be included, i.e., they are universal systems of classification. Following the Peircean jargon, a category might be understood as a sort of general (=universal) that applies to the amplest structure of reality (or mind); by “applies” I mean that the category is a true classification based in reality and not only in our particular conventions. There are different ways of conceiving Categories: Aristotle formulated a series of Categories based in all the responses that could be offered to the questions about classification based on universal characteristics. Therefore, a Category is a generalisation in which a situation of something (whatever that entity is) ultimately fits within some properties. Kant’s shift on the Categories comported a change from the belief that the Categories are laws of reality (*lex entis*) to the belief that categories are parts of the intellectual normative activity of a transcendental subject (*lex mentis*). According to Kant, therefore, categories should be transcendentally (a priori) deduced (CPR A76–83/B102–9). Aristotle’s approach to categories is representative of the “realist” approach to Categories, whereas Kant’s is a representative candidate of an idealist conception of Categories. Peirce’s concept of Categories shared traits of both because, as noted above: the nature of reality is continuous with the nature of mind. Peirce was dissatisfied, though, with both approaches insofar as they were limited in the scope of objects that can be assumed in the Category, and thus formulated his own system of Categories. Peirce’s system encompasses characteristics of realist and idealist theories of reality, in which mind and reality share the same nature because the mind is a part of reality subjected to the same evolutionary traits as the evolution of the universe at large; furthermore, the whole universe is considered as a sort of mind. Peirce’s approach is an interesting combination of realism and idealism. The combination of realist and idealist ideas is one of the aspects of “Scholastic Realism” stressed in this study.

Peirce’s system of categories aims to achieve the broadest categories possible: everything can fit on one of the ultimate three Categories of ‘First’, ‘Seconds’ or ‘Thirds’. However, a Category is not only awareness of a real aspect of some given item of experience; the concept of Category can also fit in the concept of something mind-dependent, i.e., applicable to our ways of thinking. Kant developed a theory of categories from the point of view of a transcendental a priori subject. In Kant’s view, a priori thought should precede as normative standards to any a posteriori knowledge. Kant’s categories are logical synthetic presuppositions that aimed to give unity to the manifold of apperception, Kant wrote:

The same understanding, and indeed by means of the very same actions through which it brings the logical form of judgment into concepts by means of the analytical unity, also brings a transcendental content into its representations by means of the synthetic unity of the manifold in intuition in general. (CPR A79/B105)

Peirce endeavoured a long-lasting reflection upon the topic of categories. He firstly changed the logical framework of the categories used by Kant. He offered a metaphysical framework in which reality can be understood through categories. Peirce was in the process of gradual rejection of the Kantian point of view, this process escalated progressively towards a substantive account of Categories, one more suited to his Scholastic Realism, even in its extreme version. Peirce, as explained below, carried a derivation of Categories based in phenomenology and logic. The derivation deductively proves Categories previous to any other theoretical development. This does not necessarily imply that Categories are *a priori*, meaning that these are alien to experience*:* Peirce’s project was not to find knowledge previous to experience, but knowledge applicable to all possible experience. Peirce’s work in the Categories shows that these are mostly a posteriori, as they are discovered by induction and abduction. The fact that Categories are a posteriori explains why they are steadily recalcitrant to experience. This reasoning provides an important clue: a priori transcendental deduction of Categories would turn out to be nominalistic if supposes a realm of incognizable *noumena*, a realm beyond the categories that uses a concept of intuition to deduce the list of categories.

Both Kantian and Aristotelian sets of Categories were subsumed to a structure of subject-predicate logic: they account for the most general properties of predication. Peirce, however, discovered that the logical formulation of the categories could be accounted in a still more general way than subject-predicate logic. He developed this more general logic in the logic of relations that, as we said, bore resemblance with the work of Augustus DeMorgan (1864). Indeed, as early as the 1860s, Peirce suggested that Kantian categories were reducible to his three categories in *A New List of Categories*. The logical account of Categories reveals that only monadic, dyadic and triadic relations can be accepted as logically fundamental. A *tetradic* or *pentadic* relation, for example, can be decomposed in elements of the previous ones. This opinion, however, requires further justification: Peirce offered his ‘remarkable theorem’ as a proof. From the point of view of the preconceptions of thought, a phenomenology shows that Peircean Categories are better off in terms of simplicity and scope. We will see how Peirce proved that his Categories are irreducibly and ultimately triadic.

The logical grounding of relations is not; however, all what realism about categories consists in. Although I shall consider Categories in the background of the relationships between metaphysics and logic, I will stress that the Categories can also be deduced from Peirce’s conception of phenomenology. For now, it should be borne in mind that the logical grounding is one of the compelling reasons to accept Categories.

The metaphysical project depicted in the *Monist* papers contained two doctrines closely related to each other: the theory of Categories and the doctrine of evolutionary cosmology. For the purposes of explaining the theory of categories I will conceptually distinguish them. We will see, however, that the questions that prompted development of category realism are the same ones that begot the strategy of evolutionary cosmology. There is an important debate about this. On this matter, I shall emphasise, along with Karl-Otto Apel, that the qualm against nominalism stimulated the development of category realism. I will also state, following Christopher Hookway, the importance of the questions that influenced the development of Scholastic Realism in the form of an evolutionary anti-nominalistic point of view.

Peirce outlined a metaphysical programme with these ‘intermediate’ six papers drafted mainly in the 1880s and partially published between 1890-3. In them, we find an account of the universe by and large and its evolutionary structure. Peirce described and carefully explained the movement from Tychism to the tendency of taking habits[[13]](#footnote-13). The ‘intermediate’ papers and the other papers related with their issues are the following:

1. *On a New List of Categories* (1867): This is an early written introduction to the problem of Categories; it describes purely logical aspects of what is going to be the system of Categories. It shows a Kantian approach to Categories.
2. The *Order of Nature* (1878): this is not one of the Monist Papers, but an earlier document from the *Illustrations* reviewed in Chapter Three. It will, however, help us to understand Peirce’s earlier and more Kantian approach to Categories. There also was a theological approach previous to evolutionary cosmology.
3. *Design and Chance* (1884): first one of the series of intermediate papers that concern this chapter. It seems to be very relevant to understand the importance of Tychism. This paper is fundamental to understand the reasons and questions that led Peirce to accept and develop realism of Categories.
4. *An American Plato* (1885): a review of Josiah Royce that did not get finally published. Proposes Peirce’s Scholastic Realism of Categories as an alternative to a version of Royce’s Hegelian idealistic system that, according to Peirce, fell in absolutism about truth and reality.
5. *One, Two, Three: Kantian Categories* (1886). This paper formulated a general strategy of “doubting the logical axioms” in order to generate a posteriori metaphysical inquiry.
6. *A Guess at the Riddle* (1887-8): This essay developed the doubting of the axioms mentioned in the above essay, and introduced an important number of applications of the Categories for metaphysics, physics, mathematics, physiology and other disciplines.
7. *A theory of Probable Inference* (1883): in which the tendency of habit-taking appeared confirmed by the studies of probability and inductive thought.

On an historical note, Nathan Houser ref hints that Peirce increasing metaphysical interest of these years was forced by external factors. I disagree with Houser on this: although Peirce’s work on logic at John Hopkins University came to a halt, that does not mean he was uninterested in developing logic any further, as the further developments of logic testify. Furthermore, he always recognised himself as a logician even towards the end of his life. The task I set up here is to provide an understanding of the character of the internal evolution of his thought by the development of philosophical questions; these questions broadened the limits of the doctrine of Scholastic Realism as a substantive theory of Categories.

## The development of Category Realism

Peirce inferred a first derivation of Categories around 1867 in his paper ‘On a New List of Categories’. Although this derivation was not in accordance to the letter of a Kantian deduction of Categories, still was very Kantian in spirit. Peirce wrote in the first few lines:

This paper is based upon the theory already established, that the function of conceptions is to reduce the manifold of sensuous impressions to unity and that the validity of a conception consists in the impossibility of reducing the content of consciousness to unity without the introduction of it (EP 1: 1).

Kant followed a procedure in the *Critique of Pure Reason* of deducting the Categories from the transcendental deduction of the unity of apperception, Kant wrote in the Second Edition of the *Critique*:

A manifold that is contained in an intuition that I call mine is represented as belonging to the necessary unity of self-consciousness of the understanding, and this takes place by means of the category (CPR, B144).

The process of the deduction, however, presupposes a transcendental method that is independent of the sensations themselves, and makes Categories valid a priori:

This indicates, therefore, that the empirical consciousness of a given manifold of one intuition stands under a pure *a priori* self-consciousness, just as empirical intuitions stand under a pure sensible one, which likewise holds *a priori.* –In the above proposition, therefore, the beginning of a deduction of the pure concepts of the understanding has been made, in which, since the categories arise independently from sensibility merely in the understanding, I must abstract from the way in which the manifold for an empirical intuition is given, in order to attend only to the unity that is added to the intuition through the understanding by means of the category (CPR, B144).

Kant’s transcendental deduction stated the unity of apperception derived from the *a priori* intuitions upon the table of judgments. Peirce would accept neither the Kantian intuitions nor the table of judgments based in a use of a poor conception of logic. Peirce remembered in 1905 that his own dependence in Kant in 1867 was corrected as he was increasingly realising that Kant’s:

…whole philosophy rests upon his ‘functions of judgment’, or his logical divisions of propositions, and upon the relation of his ‘categories’ to them (CP 1.560).

Peirce rejected Kant’s derivation of the Categories from his use of the concept of logic. Indeed, logic, for Peirce, Kant assumed a table of judgments that does not seem to be thought thoroughly. In his review of Royce ‘An American Plato’, Peirce complaint about this limitation of Kant and the subsequent German idealists that followed his path:

Kant gives half dozen only of his brief pages to the development of the system of logic upon which his whole philosophy rests; and though many valuable treatises on the science have appeared in Germany, there is hardly one of them which is not more or less marred by some arrant absurdity… (EP1: 232)

As time passed, though, his opinion of Kant’s talent for logic became scorn of the absence of a proper system. He especially disdained Kant’s ignorance of the logic of relations:

Kant and the logicians with whose writings he was alone acquainted, -he was far from being a thorough student of logic, notwithstanding his great natural power as a logician,-consistently neglected the logic of relations; and the consequence was that the only account they were in condition to give of the meaning of a term, its ‘signification’ as they called it, was that it was composed of all the terms which could be essentially predicated of that term (EP 2: 219).

Consequently, it has to be said that there was a continuous dissatisfaction in Peirce with regards to the initial Kantian flavour of the Categories. This is the reason for why Peirce went through a long process of explaining how the Categories ought to be derived.

Having roughly introduced the series what I called ‘intermediate’ papers, previous to the *Monist* series, I will analyse those papers and trace the ideas developing. As said above, the evolutionary cosmology is intertwined with the realism about categories; in this blend we would identify the development of the extreme Scholastic Realism Peirce alleged he proposed in these years.

In *Design and Chance,* Peirce advanced his evolutionary ideas in two ways, one logical and one metaphysical. The logical proposal includes an argument for categories grounded in the logic of relations, and then shows the irreducibility of the triadic relations: these are necessary for the effective transmission of meaning. Through the lens of the metaphysical theorist the story is relatively more complicated, although not necessarily opposed to the logical reckoning. Peirce believed that the rules of logic could be discovered by means of observation and experimentation in the same sense that the metaphysical principles, when they are accounting for a system of scientific metaphysics, can.

Peirce extended the metaphysical account of Categories in the *Guess at the Riddle*. He applied the theory to different disciplines such as psychology, physiology, biology, physics, sociology, and theology. The *Guess at the Riddle* presented the developments achieved from the early account of Categories. This essay, however, presented a more nuanced and substantive theory. Peirce firstly believed that the “analytic of logic” is the foundation of metaphysics (W1: 302) and that all metaphysics should be grounded on logic (Cf. W1:490). However, although this belief seems to mean (in a Kantian sense) that a priori thought precedes and prescribes a theory of reality, it does not mean necessarily the adoption of a priori metaphysics. An account of the logical forms is informative in knowing the general features of reality, but Peirce seemed to accept that logic can be constructed by the use of observation and experimentation. Hereby, the relationship between logic and metaphysics, with regards to grounding, works in both ways. Moreover, we need to state that even the Categories do not exhaust metaphysics: various accounts of our regulative hopes added to the stock of metaphysical knowledge are going to be needed. Here the plausibility of evolutionary cosmology becomes salient.

By the last years of the 1870s, Peirce developed an argument for the reality of God that can be found in *The Order of Nature*: it is an argument based in the concept of ‘design’. The evolutionary thought seemed to crop up for the first time there. The argument implied that the consequences for the metaphysics of regularities change if the universe is bounded or not. The definition of reality that belonged to this time, that we carefully defined previously as ‘The logical conception of reality’, seemed, however, still too nominalistic (of universals) to account for the reality of the regularities of a universe bound or unbound. The precedent, nevertheless, is important; this strand of thought was helping to yield further developments for realism: (1) realism about regularities requires specification about modalities, (2) realism about regularities requires a broader theory of Categories, and (3) we need a way to account for regularities that turns out to be non-circular.

In *An American Plato*,the cosmological picture previously described in *Guess at the Riddle* is supported by further arguments that expand the scope of realism in terms of modalities. Modal realism affirms that true can be said of the reliable future predictions of well-conducted inquiry: real is not only what it is actually believed true as of now, but also what *would be* believed after sufficient inquiry. If regularities are salient then hope is warranted. Hookway explains that Peirce realised that some seemingly innate ideas like space, time and force are habits and consequences of natural selection as well as predispositions to inquiry (guides to scientific inquiry). Hereby, logic and metaphysics seem to be cross-fertilised by the evolutionary aspect of our most fundamental assumptions. The mixed character of metaphysical inquiry is such because for Peirce, as it was for Berkeley, the otherwise considered axiomatic principles of metaphysics are inferred. These principles are of the nature of true continua (reviewed extensively in Chapter Five): a principle is understood as a universal that given certain conditions ‘ought to’ be instantiated. The distinction between what *would* occur and what *will* happen calls for a realist conception of laws and modalities. Here, as elsewhere, Peirce shows that not all apparent regularities are real laws: there are accidental generalisations also dubbed as ‘degenerated’ laws. In *The Order of Nature* these ‘degenerated laws’ were still neglected, because Peirce found himself following De Morgan’s account of laws. According to Peirce’s interpretation of De Morgan, “every event has an explanation” (EP1: 218). The evolutionary explanation mediates as an explanation between laws and events. This way of explaining does not take for granted that all events have a real explanation, this is a consequence of acknowledging real Chance.

If we proceed in this understanding of Peirce’s development, then the short essay *One, Two, Three: Kantian Categories* seems to be in the midway of raising awareness of the insufficiency of the Kantian a priori approach. Thus, this essay starts to consider that some form of innateness helps to give a longer list of categories:

The whole organism of logic maybe mentally evolved from the three conceptions of first, second and third (W5: 245).

This new account of consciousness converges with the need to extend the scope of the Categories. In *A Guess at the Riddle* (EP 1:258), the Categories of logic were matched with the Categories of consciousness in the following order:

1. Consciousness of quality or *Feeling*: it is a logical first; it develops the sheer sense of an un-compared experience.
2. Consciousness of interruption of consciousness or *Knowledge*: it is a category of seconds; the resistance to consciousness generates consciousness too.
3. Synthetic consciousness, or *Willing*: it is a logical third because it completes the triadic relation, but mainly because generates the possibility of meaning by giving an interpretant to an interpreter of a term, hence all synthetic thinking is Thirdness, in a like manner of Hegel’s account of dialectics. (see EP 1: 258)

In Peirce’s mind, the logical connotations of the Categories constitute a semeiotic relation. The semeiotic relation works in parallelism with the psychological qualities of consciousness, as can be appreciated above. The doubting of axioms mentioned above, that could have appeared as some sort of sceptic stance, was a call to judge a priori metaphysics, a way to push forward the way of inquiry. This constitutes recognition that metaphysics ought to be supported in observation and experimentation.

In *Design and Chance* and *One, Two, Three* the doubting of the axioms seems to be related with consequences in the reception of the works of Darwin: Peirce’s feels related with Darwin’s challenge to an established static view. Another important feature of the developments of the epoch is given in the suspicion in the normally accepted Euclidian space geometry. This coincided with the non-Euclidian developments. Peirce was aware of problems in Euclidian geometry and enthusiastic of non-Euclidian theories. He wanted to make this changes contribute to his conception of metaphysics informed by the sciences. In W4: 544 Peirce used the same narrative to introduce the need of a place for chance in the Universe. Chance is absence of Aristotelian Cause (either formal, or material, or final, or efficient), and emerges in the inductive practice. The time, therefore, seemed momentous for a new account of metaphysics that could make sense of the changing paradigm in sciences, mathematics and logic altogether.

Peirce’s view in the 1878 was that every event must have a cause in accordance to De Morgan’s principle. From 1884 onwards he changed his view and believed in absolute chance. Since, he challenged what he deemed to be a nominalistic conception of law. Peirce’s realism challenges facts with no explanation. Thus, absolute chance or *Tychism* is the best explanation for a range of phenomena of no apparent cause. This is a form of realism, accepts that our inquiries are always only approximately true. These, consequently, can only be confronted with something that does not depend on our knowledge, but in the way that mind-independent reality is.

In *The Architecture of Theories* (1891) the conception of law had evolved in the sense expressed in this sentence: “Law is what wants a reason” (W4: 547-8). This represents an especial theory of uniformity and evolution but confronted to the background of the original chance. The theory is formulated bearing the mentioned definition of law and assumed the requirements for explaining not only laws, but why do we need laws at all.

Although laws (or better said, the law-like behaviour in the world) could be considered innate Categories and innate ideas produced by our concrete evolutionary path, they need metaphysical explanation because they come from inference too. Categories are the basic attunement with reality, and by explaining reality in those terms the hope covers an explanatory demand.

The explanation of laws is an important problem that probably resonates in the whole account of Scholastic Realism during this period. Hookway presents a trilemma that needs to be sorted out once we recognised that the axiom of “every event has a cause” it is not self-evident. Peirce’s emphasis was given in the ‘why’ questions of such trilemma:

1. Why are the laws of physics not different?
2. Why are there any laws of nature at all?
3. Why the world is governed by laws to the degree that it is?

And the responses to these questions could not possibly be satisfactorily answered using the ‘logical conception of reality’ presented above. Indeed, the concepts of the logical conception could have result in one of the following responses: either these questions do not have an answer and then the axiom of cause must be rejected altogether, or the naturalistic answer will make laws seem circular (we have laws because we have laws), or a transcendental God justifies the development of design. Peirce tried to avoid a lurking nominalism of universals latent in these responses. Laws, rather, need an explanation that enables prediction. Thereby, none of the previous responses to the trilemma seem to be fit for the task. An evolutionary theory of cosmology and categories is, thus, needed. Peirce wanted to account for the steady formation of habits witnessed in an evolving universe. The tendency for ‘habit-taking’ gives a non-circular and non-nominalistic answer to regularity. Moreover, it not only gives an answer, it releases the way of inquiry towards a more complete account of Categories. The universal application of those Categories embraces all the spheres/universes of experience (if universes of experience be).

Tychism, as a scholastic realist doctrine of reality, develops from careful observation of probability. Chance is governed by probability:

Having illustrated the same point by indicating how certain laws of nature –he mentions Boyle’s Law, Charles’ Law and the second law of thermodynamics- are ‘statistical facts’ or the results of chance (Hookway 2001, 174).

If all laws are known to us ultimately as statistical facts then the laws of physics may be “habits gradually acquired by systems”. In *Methods of Reasoning* of 1881, Peirce presented a view of logic having consequences for metaphysics and psychology; Logic is continuous with metaphysics. Thus far, it seemed necessary to have a Categorial background if we want to understand how Peirce’s evolutionary metaphysics makes sense. His theory is not only cosmological, but an application of his broader project of scientific metaphysics.

## The Derivation of Categories in Phenomenology

Peirce made philosophy the most basic of the positive sciences: the one science that does not need particular instruments or concepts to inquire into the world. Philosophy, in this sense, Peirce stated:

…contends itself with a more attentive scrutiny and comparison of the facts of everyday life, such as present themselves to every adult and sane person, and for the most part in every day an hour of his waking life (EP2: 146).

Philosophy, thus conceived, aims to provide us with a way of interpreting the universe that can work as a general framework of our inquiring into the world. This includes the products of the other especial sciences. The abovementioned backdrop is given by a system of Categories that can be universal to all possible knowledge. If we want to discover what kind of Categories can be universal, then we need to inquire into some area of knowledge that informs how things would behave if singled out. Peirce formulated a phenomenology that inquires into the possibilities of purely hypothetical experience. Phaneroscopy studies the ‘phaneron’: meaning the manifestness of whatever comes to mind. Peirce defined the phaneron as:

[T]he total content of any consciousness (for any one is substantially any other), the sum of all we have in mind in any way whatever, regardless of its cognitive value. This is pretty vague: I intentionally leave it so. I will only point out that I do not limit the reference to an instantaneous state of consciousness; for the clause ‘in any way whatever’ takes in memory and all habitual cognition (EP2: 362).

Phaneroscopy is the study of the phaneron. It is a pre-logical study; this means that provides the grounds to a philosophical view intended to be previous even to the normative sciences that, in Peirce’s system, form part of philosophy. Consequently, Phaneroscopy is even previous to any special metaphysics:

…no things whatever can differ more from one another than ingredients of the phaneron may differ; since whatever we at all know we must know through the ingredients of the phaneron (MS 477: 10).

Peirce presented Phaneroscopy as “the Doctrine of Categories” (CP 2.120). The aim of Phaneroscopy is to draw up the catalogue of the most basic Categories possible. In drawing the aforementioned catalogue we need, according to Peirce, to follow three directives:

1. “make out the characteristics of each”,
2. “show the relations of each to the others”,
3. “prove its sufficiency and freedom from redundancies” (CP 5.43)

If these directives were followed, then Phaneroscopy would explain the process of the manifestation of the Phaneron. This process can be reconstructed as follows: Suppose an unrelated entity, not referred to anything else, just something that fills the requirement of being an item but unrelated and indecomposable in elements. The property of something postulated as an unrelated first constitutes the mode of being of Firstness:

[T]he mode of being of that which is such as it is, positively and without reference to anything else (CP 8.328).

However, to imagine a first is really difficult, as soon as we try to determine what that is then there is always a background of reference; perhaps another item that will serve as a point of reference to distinguish that second. This is the mode of being of Secondness:

[T]he mode of being of that which is such as it is, with respect to a second but regardless of any third (CP 8.328).

Once that those two elements are understood as different from each other, they still are integrated in the background of the medium in which we think about them. Any mediation possible is a third. Thence the mode of being of Thirdness is:

[T]he mode of being of that which is such as it is, in bringing a second and third into relation to each other (CP 8.328).

Every thought about the Phaneron must include these three elements. We cannot think of them isolated. Although we have a conceptual distinction of the first, second, and third, they entail each other in the process of our understanding of their manifestation. Can there a fourth element be? Peirce denied it: the fourth element can be decomposable on elements of the three previous modes of being. From the point of view of the Phaneron, then, the list of Categories is of three and only three irreducible Categories. Peirce thought that his Phaneroscopy means a huge advantage to other partial intents in the history of philosophy. Other systems seem to assume elements that can be decomposable in terms of further elements:

My list differs from those of Aristotle, Kant, and Hegel… in that they never really went back to examining the Phenomenon to see what was to be observed there… They simply took current conceptions and arranged them (NEM 4:19).

Now, consider some examples in which we could apply Phaneroscopy in different scenarios, it will become apparent that the process always should reveal a way of explaining reality in the triadic manner.

For example, if I am travelling, I consider my origin as a first, my destination as a second; but I still need a habit of action that can be something effectively mediating between the two, as the railway system can be. That would determine an acceptable sign relation between my signs and interpretants. If I find myself coming out of the railway station and as I come out from the public area into the outside and feel the rain upon my face I can feel a sensation and quality of a First, then I find myself getting an increasing feeling of wetness as I get drenched. I finally understand I need to either use an umbrella or cover myself with something: the habit of using an umbrella, for instance. Consciousness is pervaded by a plurality of Phanerons: the point of the list of Categories is to provide us with an effective method for decomposing all the processes possible, including the purely hypothetical ones. This makes the list of Categories a substantive metaphysical insight. I will, therefore, apply the list as a principle operative to any conceivable and real scenario.

## The Derivation of Categories in the logic of Relatives: ‘the remarkable theorem’

Peirce showed how there is a theorem that works for conceptions as basic as a purely hypothetical item. These items are of an indecomposable nature. He achieved this through the use of his existential graphs establishing a derivation. The process of this derivation relies in what Peirce called pure mathematics and the logic of relations. He was talking about norms that are expected to be parts of the *Logica Utens*; these are normative to all thought and framed within the hypothetical freedom of mathematics. The results of Peirce’s efforts in this direction are collected in what he called ‘the remarkable theorem’. This theorem demonstrates that the only indecomposable Categories must be numerically three. In talking about the goal of the theorem Hookway mentions:

When the logic of relations is taken more seriously, then the goal should be to discover monadic characters of and relations between elements of experience; and the argument would have to be supplemented to incorporate this (Hookway 1985, 97).

Relations are usually understood as bonds shared by two or more ‘relata’. If we think about relations in terms of the possibilities of incorporate irreducible bonding then we first present a monadic relation as the possibility of one of the relata being unbounded. This state is called his ‘valency’. When one of the relata is related with another one by a bond, then the relation between them is dyadic. A third *relatum* can come into the picture as a relation between the two previous *relata* with a third; so the relation is triadic. The triadic relation behaves as a relation that assumes two. This relation cannot be reduced to dyadic because if it was, it would miss the valency assumed. Things work differently for a fourth *relatum*: a further *relatum* can be reduced to a dyadic bonding with a triad. The theorem shows that there is no more irreducible relation than the triadic, dyadic and monadic. I will spell out this using a graphical proof (Fig. 1) of Peirce’s theorem.

Figure 1. Graphical proof of Peirce’s Theorem



Suppose an isolated dot drawn in a blank sheet is a first; if it is referred to the piece of paper where is written then the paper appears as a second. The dot can also be referred to another dot. However, if I want to connect them both, then I use a line that mediates as a Third. I could also possibly think in the piece of paper as mediating in between both dots. If I think, nonetheless, in lines connecting three points, still the relation of mediation does not change. If lines connect either dots or lines then the mediation is always from a first to a second. Peirce showed this irreducibility with the method of graphs as a tool to prove the theorem (De Waal 2013, 41-2). Let three dots be connected with lines: if the lines are removed then the dots result unjointed; then substitute one of the dots with a further line: if the line was to be used to connect dots, then all the combinations present in the first figure can be achieved by using a triadic relation. This is showed in the relation of two dots and a line (the fourth figure in the diagram). It turns out that the first figure can be reconstructed or reduced in its entirety by using the two dots and a line connected. No fourth element is needed to carry out that task. The remarkable theorem is simple, but explains that the initial figure could not be reduced, however, to dyadic relations either. The theorem has consequences for the way we should understand mathematical thought and mathematics as hypothetical science. The simplest hypothesis might ever be thought is: ‘there is one thing in the universe’; then moves to the hypothesis that there are two things (dichotomic mathematics) and then to the hypothesis that there are three things or more (trichotomic mathematics).

Categories, according to the theory of bonds and relations, are similar to the ‘chemical radical’. The chemical radical has a certain number of ‘unsatisfied valencies’. In the case of chemical elements with unsatisfied valencies, any number of unsatisfied valencies above three may be built up from triads by combination.

In ‘The Nature of Meaning’, a late conference of the Harvard Lectures, Peirce saw his work on the logic of relations as a fortunate advancement that permits to appreciate the importance and centrality of Categories. Categories, in this case, are derived from the applicability of the logic of relations:

One of the many important services which the logic of relations has rendered has been that of showing that these so-called simple conceptions, notwithstanding their being unaffected by the particular kind of combination recognized in non-relative logic, are nevertheless capable of analysis in consequence of their implying various modes of relationship. For example, no conceptions are simpler than those of Firstness, Secondness, and Thirdness; but this has not prevented my defining them, and that in a most effective manner, since all the assertions I have made concerning them have been deduced from those definitions (EP2: 219).

Peirce demonstrated with his theorem that polyads of higher adicity (or arity) than three can be reduced to adicities of three or less. ‘Arity’ is the number of arguments or operands the function or operation accepts. The arity of a relation is the dimension of the domain in the corresponding function. For example, a function of arity ‘n’ thus has arity n+1 if it is considered as a relation. Peirce’s demonstration is not only an achievement of a particular version of the logic of relations. Those relata at play can be equivalent to conceptions, then the theorem manifests itself as an element of the *Logica Utens*, i.e., normative to all possible thought. We will see below that the *Logica Utens* is equivalent to Pure mathematics, and that they resume as elements of Phaneroscopy not only because they converge in the contents of the theorem, but because Phaneroscopy is itself the inquiry that could reveal purely hypothetical possible objects, as a *Logica Utens* ruling out cases.

## Realist/Scholastic derivation of Categories in the *Monist* papers

The logic of relations is a description of fundamental irreducible bonds when thinking objects in their relationships, provided that we are not making the relation an object itself. As we will see below in the chapter about continuity, there is something fundamental about a relation that makes it not a further third object, thus avoiding the third man’s logical problem. Peirce advanced a theory of relations in three self-contained ways. This theory leads to thought of other n-adic relations as reducible to these three; namely: monadic, dyadic, and triadic.

The Logic of relations is essentially connected with the theory of Categories in the sense described in the previous section; however, it is hard to say if the logic must be seen as the origin of the theory of Categories. While the theory of Categories helps to make sense of what actually happens to be necessary for the theory of inquiry, still it is not all the information needed to understand what the Categories are about: Categories are part of a broader philosophical project, Peirce’s system of scientific metaphysics. The problem, nonetheless, dissolves if is accepted that the abovementioned theorem is not restrictive to a concrete *Logica Docens* asthe logic of relations or the existential graphs could be. The theory of Categories is a universal element of pure mathematics and, because of that, it is necessary for the theory of inquiry.

Reasons as to why an evolutionary story might be important and not an eccentric creation of Peirce’s middle years have been reviewed. Now, I shall explain what the features of this evolutionary cosmology, pervaded by the use of Categories, are. Peirce explained that the evolutionary story of the universe can be understood as manifestation of the universal Categories in the process of habit-taking:

If the universe is thus progressing from a state of all but pure chance to a state of all but complete determination by law, we must suppose that there is an original elemental tendency of things to acquire determinate properties, to take habits. This is the third or mediating element between chance, which brings forth first and original events, and law which produces sequences or Seconds… (W5: 293).

Thence, the questions that propelled this metaphysical approach and were answered by this theory are, thus, the following ones:

* Is there any real possibility or impossibility?
* Is time a real thing, if not, what reality represents?
* What external reality do the qualities of sense represent?
* Are both time and space continuous?
* Is metaphysical knowledge possible at all? (Cf. Hookway 2001, 182)
* What methods of inquiry ‘scientific metaphysics’ must use?
* How the pragmatic maxim relates with these topics?

The answers to these questions are not overly difficult if science used, as Peirce claimed, special observation and controlled experiments. The role of metaphysics in his system is, then:

The study of the most general features of reality and real objects… the completing department of philosophical science (coenoscopy) which in places welds itself into idioscopy or especial science (CP. 6.6).

Metaphysics, then, holds an especial place in Peirce’s architectonic system. I will relate the system with the Categories and explain the relation in Chapter Six. Metaphysics accounts for the reality and existence of objects and their general Categories. A contemporary conception of science, hostile to metaphysics, would probably object that physics can fully carry that business without the need of an architectonic system. Peirce would disagree with that opinion: he would raise the idea that metaphysics connects the normative sciences and mathematics with physics. He would point out that it is needed an explanation of the fact that the normative continuity of one discipline supersedes the other in a continuous manner. For instance, there is continuity across physics, chemistry and biology, but there is also a priority of laws of physics over chemistry, and of chemistry over biology. Let us move on the Categories themselves and explain what exactly the Scholastic Realism of Categories involves.

Peirce’s derivation of the categories from phenomenology (Phaneroscopy) was shown as a result of a purely hypothetical exercise of possible experience. Phaneroscopy is the science of whatever appears to mind, it produces a description of anything that can or may be. Mathematics, according to Peirce, is the science of purely hypothetical propositions in like manner:

The study of pure hypotheses regardless of any analogies they may have in our universe (HL 124).

 Thus, Phaneroscopy and pure mathematics appear both grounded in what ‘may be’. Pure mathematical thought expresses the *Logica Utens* of thought in general. Consequently, it is logic with effects to all possible inquiry. From this viewpoint we could say that if the logic of relations is understood as a purely mathematical exercise of thought, then Peirce actually provides enough reasons to accept that his phaneroscopic derivation of the Categories converges with the logical derivation of Categories. In consequence, the phaneroscopic derivation and the logical derivation are one and the same study. Peirce recognised this convergence in his Harvard Lectures of 1903. In the Second Lecture he tries to demonstrate that there actually are Firstness, Secondness and Thirdness in experience, he stated the task as:

[T]o describe what is before the mind when anything is before the mind and to convince you, if I can, that my description is correct (HL 162).

## The Pervasiveness of Categories

Peirce’s Categories apply to all knowledge; they have a manifestation in all the directions inquiry might be carried out. Peirce’s realism about categories supplies the substantive character that Peirce’s realism needed in previous accounts. The realism of Categories finally binds together his theory of inquiry and his theory of meaning. Peirce deemed that his Categories can be traced out in the normative sciences, as well as in metaphysics and the idioscopic sciences (the sciences that depend of special observations and particular instruments). I shall come back to this point in Chapter Six. For now, it can be said that these Categories apply to all knowledge because they are manifested in all knowledge. Peirce called his categories ‘coenopythagorean’, meaning that they attach an especial importance to numbers in the sense that Pythagoras’ philosophy did. The coenopythagorean Categories are universal Categories because they are recalcitrant to inquiry, they also follow the norms of any possible inquiry. The realism about these Categories is a realism grounded both in observation and in *Logica Utens*, i.e., the underlying laws of all thought.

Here is a list of examples in which Categories are applied directly at different levels of knowledge:

* 1. Time: present as Firstness, past as Secondness, future as Thirdness: Categories manifest themselves in our understanding of time. Firstness is the instant that I experience. That fleeting glimpse gets a reference compared to a second, i.e., the past. Understanding regularities gives us ways of project the past and present into a future, which is a third.
	2. Experience: elements of experience are considered as manifestation of Categories: feeling as Firstness, effort as Secondness, habit as Thirdness. Experience captures Firstness as a fleeting and momentary feeling that is not even divorced from the anticipation of the future or from the past that preceded it. It is understood as possibility and immediacy. For example opening the eyes in a cloud or in the fog and feeling the immediacy of being “one with the fog”. Secondness is resistance, reaction and force. Following the same example, when I can distinguish my body from the fog then I come across the fact and the resistance of something opposed to the fog. The third referred to experience is mediation, habit-taking, growth. Thus, deciding to move about within the fog establishes a relationship of intentions and expectations.
	3. Metaphysics: elements of metaphysics are also considered as manifestations of Categories. Possibility as Firstness, actuality as Secondness, law as Thirdness. In the most general sense, Peirce’s metaphysics is Ontology; it describes what kinds of items furnish the universe. The Categories capture the most general and irreducible items of the universe in *possibilia* or possibles, facts and their existence as seconds, and mediation or law for regularities or thirds that are, as we will see in Chapter Five, true continua.
	4. Logic: For the logic of relatives, as has been shown, Peirce offered grounding in his ‘remarkable theorem’. This consideration supports the derivation of Categories in logic. It has been said that the same derivation occurs in phenomenology considered as *Logica Utens*. Peirce also sees this logic involved in his semeiotics, the developed theory of signs. Peirce affirmed that logic can be also considered as semiotics, he actually died in 1914 leaving a work thus named unfinished (see EP2: x). In this regard, the sign relationship is fundamentally triadic: a sign is the relation of an interpretant presenting an object to an interpreter. Let A, B, and C, be elements of the relationship. Thus Firstness, Secondness and Thirdness occur when A gives B to C. This involves a law in the transfer of property as a habit from a first to a second. The signing relationship is a third: for A (the sign) denotes an object, B, to some interpretant C.
	5. Philosophy: Philosophy, in the particular sense that Peirce understood it, is the general observation about general facts: “[Philosophy] contents itself with a more attentive scrutiny and comparison of the facts of everyday life, such as present themselves to every adult and sane person, and for the most part in every day and hour of his waking life” (EP 2: 146). Philosophy, in this sense, is pervaded by Categories that flood the experiences given in common sense. Philosophy is expected to offer a common *Weltanshauung* of beliefs without the use of special instruments or observations.
	6. The Idioscopic sciences: Categories, as we will see in the last chapter of this work, manifest themselves in the special sciences, also known as ‘idioscopic sciences’. Even though these sciences require special instruments or observations, their instruments are expected to identify the patterns (thirds), the facts (seconds), and the possibilities (firsts) of a particular field of research.

In the following sections I summarise the ontological aspects of a metaphysics built on Categories. I will also show that Peirce’s assumption is that each Category expresses a particular kind of reality. It will be noted that he developed a steady movement to accept the reality of each of the Categories.

## Realism of Firstness

For Peirce, the Firstness is the real category of possibility. Anything conceivable falls down into the category of Firstness. This excludes what is inconceivable: for example, self-contradictory concepts will be inconceivable and therefore they do not hold Firstness. With this trait of realism we can answer to a question: is there any real impossibility? The answer is negative, as only the possibilities could hold Firstness in the way demanded by the logic of relations. There is no mental definitive experiment able to deny the inconceivability of the impossible. Peirce carried a modal shift that not only involved logic, but metaphysics too, this was very clear in his Fourth *Harvard Lecture* in which he defends the reality of Thirdness (EP 2: 181) Secondness and the reality of Firstness as necessary for science (EP 2: 186-94). I shall take on the importance of that shift for Scholastic Realism in Chapter Six. For now, however, we can appreciate that there is realism of not only of what there is, but of what “could be”. This results in a more substantive Realism. These advancements towards a substantive Realism are developments in Peirce’s idea of Scholastic Realism.

## Realism of Secondness

The category of Secondness is defined by what constitutes a fact/event of existence. Secondness is reaction or resistance of what can be a percept (an object that enacts resistance to our senses). In a previous chapter I introduced Peirce’s belief that ‘existence’ and ‘reality’ are not coextensive terms: On the one hand existence means reaction to our perceptual capacity or anything that offers resistance to action. Our endeavours to discover if something ‘exists’ depend on how we can witness the resistance offered to an experimental action. Reality, on the other hand, holds a broader significance: it is, following the Scotistic definition, whatever is the way it is independently of our opinions and turns out to be pervasive and necessary for inquiry. Realism about Secondness means that the existence of seconds testifies the reality of seconds. Once more, we find an important testimony of Peirce’s realism of Secondness in his fourth *Harvard Lecture* (EP 2: 194-5). Realism of Secondness is a regulative hope about existent objects: we act under the hope that our senses interacting with existing objects reacting to them, after careful experimentation, will not deceive us, unless we have reasons to hope otherwise.

## Realism of Thirdness

Peirce accepted the realism of Thirdness in different ways. He accepted, first and foremost, that universals or real generals are thirds. This does not mean that all regularity is a genuine law. Realism of chance (Tychism) makes us discriminate between apparent realities and real ones (pun not intended). Thirdness involves triadic relations; realism of Thirdness implies that there are real relations. In the developed theory of signs or Semeiotics we can find a convenient way of approaching the logic of Categories and the realism about relations. When we say that a relation is real we are talking of something that constitutes the mediation given in signhood as a necessary and recalcitrant mediation. The relevance of realism about Thirdness is the capacity to have realism of generals and relations of continuity and mediation. This realism of real relations that are ‘necessary signs’ is integrated in a complete account of Scholastic Realism in the context of Categories. Peirce held Scholastic Realism about generals from early on in his life. Hence, his thought has a continuity that makes him a consistent philosopher and logician who believe in the reality of generals. This, however, does not entail that he would not perfect and develop the system. He also developed the architectonic aspect that the realism about categories provides (this will be studied in Chapter Six). Generals/universals are the more important features of the Scholastic Realist account thus far. They are the consequences of a pragmatic theory of meaning based on the priority of reality. Inquiry, then, not only presupposes the reality of generals, but reveals their variety and reality. This is proved consistently when the tendency of habit-taking is confirmed. In conclusion, Tychism, or realism about chance, ultimately converges with Agapism, the realism about the evolutionary end of the universe.

## Interpretations of Category Realism

In my interpretation, Peirce would consider that a nominalist response for all the mentioned aspects of his complex realism blocks the way of inquiry. Nominalism of universals will ultimately imply denying our best-warranted hopes, especially the ones that involves habits like thirds. Category Realism, opposing the latter, will guarantee that our best habits of inquiry are genuine thirds that we legitimately hold as warranted regulative hopes. In this section I shall review the literature that makes an interpretation about Peirce’s realism of Categories. I will show that I disagree with Murphey’s (1993) reading of Peirce’s development, while I have several points of agreement with Karl Otto Apel (1980; 1981) and Christopher Hookway (1985; 1994; 2001).

Murphey (1993, 20; 97; 296; 355) wrote that Peirce did several changes in his views. So much so, the he described Peirce formulating four different systems. Murphey concealed the idea that those systems were unrelated to each other. For Murphey (1993, 2-3), the passing from one system to the other was a natural result of the irreconcilable differences that make one Peircean system inconsistent with the other:

As a result, in each revision Peirce preserves as much of the preceding system as possible, only altering those doctrines which conflict with the conclusions he drew from the new logical discoveries or which proved unsatisfactory on other grounds. In particular, Peirce preserves the terminology and over-all formal outline, even in cases where the con- tent of the doctrines has been radically changed. What Peirce meant by "First", "Second" and "Third" in the early 1860s has little or nothing in common with their meaning in 1890, but Peirce never states explicitly that he has altered their meaning, (Murphey 1993, 3).

 Murphey argued that Peirce's philosophy "went through four major phases," each of them was a "major reformulation" (Murphey 1993, 3). According to him this was due in each case to a "major discovery in logic." Peirce saw his philosophy unified, his changes, according to his own opinion, were "revisions of a single overall architectonic system." Murphey, contra Peirce, identified a series of distinct systems. Murphey (1993, 4-5) believed that Peirce changed across his four systems due to his interpretation of Peirce’s philosophy based in these premises: (1) For Murphey (1993, 151-3), Peirce held pre-eminence of logic over philosophy, a system of logic will therefore precede the philosophical questions. Murphey also understood Peirce as (2) unaware of the inconsistencies and changed across the systems without noticing what he was doing. All these led Murphey to conclude the following:

[Peirce's] grand design was never fulfilled. The reason is that Peirce was never able to find a way to utilize the continuum concept effectively. The magnificent synthesis that the theory of continuity seemed to promise somehow always eluded him, and the shining vision of the great system always remained a castle in the air. (Murphey 1993, 407)

 As Hookway (1994, 670) explains, Murphey emphasis on logic within the architectonic can mislead the interpreter to think Peirce as trying to answer metaphysically what he could not deal with logically. This emphasis, though truly present in Peirce’s thought, can overshadow other of Peirce’s concerns, as his formulations of a theory of inquiry, a theory of meaning, and a scientific metaphysics. Murphey’s belief could be rejected: after in this Chapter we realised that the relations of logic and metaphysics were not presented at some of foundation of the latter upon the former, but of mutual discovery. I also disagree with the second of Murphey’s claims: Peirce was conscious of his own development, and my description of his development of the realism of Categories in this Chapter reveals that he was bearing in mind anxieties generated by his previous works that he did not jettisoned but considered in this more mature and substantive version of his Scholastic realism.

Karl Otto Apel (1980; 1981) believed that the reason explaining the changes in Peirce’s realistic stance on the Categories in these years and in the papers of *The Monist* series were not begotten by a fault in the logical background. For Apel (1981, 191-6), different strands of Peirce’s thought always evolved in different paths all along, but his different views found unity in Peirce’s controversy against nominalism. Apel (1981, 80-190) showed that Peirce’s Scholastic Realism was at the bottom of the changes he carried out, and, furthermore, that all those changes were entirely conscious. Apel (1981, 54-75; 99-108) stressed Peirce’s realism as a theory of meaning. He believed that *the Monist* papers must be read from the point of view of a transcendental semeiotic. Apel (1981, 1-14; 191) placed the importance of ‘Scientific Metaphysics’ in the search of a way out of the dilemma of transcendental logic. For him, Peirce effort can be named ‘transcendental semeiotic’. This vocabulary, however, is unfortunate for the Peircean philosopher: Peirce wanted metaphysics to be the easier of sciences, to name his effort a ‘transcendental semeiotic’ conception will position ‘Scientific metaphysics’ out of the grounds of simplicity.

However, as Chris Hookway (2001) has stressed, there is enough reason to believe that Peirce’s papers themselves testify for a struggle for an ever more-substantive metaphysics. This metaphysics initiated by Kant’s inspiration:

Like Kant, Peirce aimed to explain the possibility of empirical scientific inquiry and to explain the legitimacy of the rules we use in subjecting our inquiries to rational self-control (Hookway 2001, 184-5).

Peirce, however, criticised Kant’s transcendental philosophy. He rejected its overpopulation of ‘indispensable postulates’ (CP 2.113) and said:

I do not admit that indispensability is any ground for belief (CP 2.113, 1903).

Presuppositions for inquiry of an indispensable nature do not legitimate beliefs; these might explain, however, a warrant for hope. Hookway remarked on this:

The Kantian believed that showing that something is a precondition of experience or of inquiry somehow (and sometimes) legitimates our assurance of its truth. Peirce denied that *belief* in fundamental commitments can ever be legitimate in this fashion: at best we are warranted in hoping that they are true (Hookway 2001, 186).

Peirce believed, thus, that all justification and legitimation must occur within consciousness or within experience. Apel’s emphasis in the transcendental aspect of semeiotics can mislead the interpretation of Scholastic Realism. We could reduce it to a Kantian strategy for finding semeiotics, as opposed to a more general logic which grounds metaphysics. As said above, Peirce did not want such kind of limited strategy. Apel (1992, iv-v), however, rectified with a precision to refine his understanding of Peirce’s strategy in later works[[14]](#footnote-14). Apel explained that he meant his commentaries to be understood as a *quasi-transcendental* move. Apel meant that a theory can be both metaphysical and logical at once. I find this rectification acceptable. Whatever the case, what it has been stressed here is the need to avoid the circularity in talking about the methods of science. Peirce believed that Realism must receive a vindication that does not thwart the method of inquiry. Do we need metaphysics of a transcendental self instead? If so, that would lead, again, to the kind of circularity Peirce was avoiding. It can be rather said that Kantian principles can be inferred and therefore they count as common-sense certainties. For Peirce, logic places certain requirements upon an adequate metaphysical theory, but only by thereby acknowledging that metaphysical investigations do not need to be carried out before logic can be completed. The task of the metaphysical inquiry described here is to get a precise and testable version of the common-sense certainties: they become plausible in the required sense after considering them from an evolutionary point of view. Peirce’s claims about the different sciences do not eliminate the possibility of describing the common-sense certainties as testable hypothesis. The theory of Categories, on its part, offers us with the classifications of the modes of being that different kinds of truths have. Peirce suggested that the relationship between logic and metaphysics is analogous to the relationships of other sciences, for example between physics and chemistry. The theory of Categories, interpreted here as a development of a Scholastic Realist doctrine, renders logical as well as metaphysical elements: these have value in constructing the rest of hypothesis for science. The doctrine becomes ‘Scientific metaphysics’ itself.

I shall conclude these considerations by returning to the remarks mentioned above on the Theory of Inquiry: Scholastic Realism may well be another name for Peirce’s plan of considering his pragmatism as a method and as a theory of clarifying our conceptions. The theory of inquiry should include a story of how we acquire beliefs that are real thirds. This is an important shift in the meaning of a belief as a ‘habits of action’; opposed to the simplistic idea that understands a ‘habit’ as a ‘disposition’. A refined theory of habit-taking completes the account; it helps to understand how reality impinges in inquiry in different modes of being or Categories. The substantive metaphysics reviewed in this chapter fulfils, therefore, the aims set in previous versions of Peirce’s realism. This Realism extends the scope and directions in which the way of inquiry can be carried out. Peirce’s system is not backfired by a gratuitous metaphysics that drifts away from the achievements of pragmatism. Peirce’s aim was the opposite: he aimed to articulate the questions that prompted the theory of inquiry in the first place, then potentiated the original intuition of Scholastic Realism. This reconstruction of Peirce’s effort, in my opinion, gives a remarkable unity to Peirce’s ideas over time and particularly in the period studied in this Chapter.

## Peirce’s Realism of Categories and Scotus’ Realism

The discussion on Categories changes the panorama in the understanding of how Peirce conceived universals and individuation. In this section I pursue a core aim of this thesis: I show that Category realism brings Peirce closer to Scotus’ Realism. They both develop a strategy that accounts both for the generality of the universals and their instantiation as well as for the principle of individuation via an account of Secondness. Let us reconsider some comments of Peirce on Scotus:

In the North American Review for October, 1871, (in a notice of Fraser’s edition of Berkeley), I undertook to formulate Scotus’ conception of Reality… In that notice I explained approvingly the qualified Realism of Duns. At present, however, I am an unqualified realist (MS 641, 1909).

Peirce recognised himself as unqualified in his earlier years: he could not find any other philosopher with an extreme view of universals that matched his. Due to this he wrote:

Even Duns Scotus is too nominalistic when he says that universals are contracted to the mode of individuality in singulars, meaning, as he does by singulars, ordinary existing things (CP 8.208, 1905).

Scholars like Rosa Mayorga (2009) denied that Peirce believed that singulars have reality. For Mayorga, Peirce’s and Scotus’ positions are irreconcilable, as Scotus affirmed the reality of individuals. I disagree, after considering he following reasons: Peirce indeed expressed dissatisfaction in Scotus’ notion of contraction, he chides him of being too dangerously close to nominalism by giving to universals the individuality in singulars. Nonetheless, if we reconsider the arguments that Scotus used for demonstrating that the contraction in haecceity does not alter the unity of the common nature (which will be Peirce’s universal or general), we realise that Peirce’s account is actually closer to Scotus’ than Peirce himself reckoned. Indeed, Peirce showed through the use of Categories how the Thirdness of the real general needs the “Outward Clash” of Secondness in order to offer us the resistance of individuality. This does not nullify the Thirdness: Thirdness governs future instantiations of individuals in the form of habits. I believe that Scotus’ concept of contraction is equivalent to Peirce’s in this regard. Furthermore, I claim that Peirce himself followed the need to establish Secondness as much as Scotus established *haecceity*. Peirce complaint of Hegel not paying enough attention to the outward clash of resistance. Yet, resistance is the particular instantiation of a thing resulting in our report of the existence of an individual. The reality of a third is more pronounced than the reality of a second, but this does not nullify the reality of the second. We should not forget, however, that the reality of the habit or Third is always more prominent in Peirce’s ontology.

…reality means a certain kind of non-dependence upon thought, and so is a cognitionary character, while existence means reaction with the environment, and so is a dynamic character; and accordingly the two meanings… are clearly not the same (CP 5.503, 1905).

Every real item has a cognitive character. Peirce’s objective idealism is grounded on the principle expressed in this early explanation about real items:

What idea can be attached to that of which there is no idea? For if there be an idea of such a reality, it is the object of that idea of which we are speaking, and which is not independent of thought (MS 194, 1872).

A natural question to emerge, then, is: What is the reality of singulars? The response might be found as early as 1868, when Peirce denied singulars immediate reality:

To [singulars] I have denied all immediate reality. Now the nominalistic element of my theory is certainly an admission that nothing out of cognition and signification generally, has any generality; and therefore this seems to imply that we are not affected by the external world. But this is not a correct consequence of what I sought to establish… (W2: 175-80, 1868)

I want to point out; however, that Peirce’s claim that singulars lack immediate reality does not necessarily mean that Peirce denies them reality at all. The possibility of having a mediate reality is still there, and if we were to accept the possibility as real, it would be due to the constraints of inquiry. Constraints of mind-independence show us what is real and what is not. Thence, after denying the immediate reality of singulars they are presented as mental signs or *entia rationis*. We should, however, remember that *entia rationis* have a mediate reality in thought. Their reality is derived or degenerated from the reality of actual realities and never of ‘absolute individuals’:

For I had long before declared that absolute individuals were entia rationis, and not realities… There are many other turns that may be given to this argument; and the conclusion of it is that it is only the general which we can understand. What we commonly designate by pointing at it or otherwise indicating it we assume to be singular. But so far as we can comprehend it, it will be found not to be so. We can only indicate the real universe; if we are asked to describe it, we can only say that it includes whatever there may be the really is. This is a universal, not a singular (CP 8.208, 1905).

Peirce was addressing above his early pragmatism. That pragmatism had a Pragmatic Maxim that was not specifically linked to his Categorial realism. He indeed wrote in 1878:

We say that a diamond is hard. And in what does the hardness consist? It consists merely in the fact that nothing will scratch it; therefore its hardness is entirely constituted by the fact of something rubbing against it with force without scratching it (CP 7.340, 1878).

Consequently, the reality of Thirds that manifest themselves as “would-be’s” or habits, made Peirce amend his own example of what hardness means:

I myself went too far in the direction of nominalism when I said that it was a mere question of the convenience of speech whether we say that a diamond is hard when it is not pressed upon, or whether we say that it is soft until it is pressed upon. I now say that experiment will prove that the diamond is hard, as a positive fact. That is, it is a real fact that it would resist pressure, which amounts to extreme scholastic realism… (CP 8.208, 1905)

The relationship between Peirce’s realism about categories and his doctrine of pragmatism will be reviewed and assessed in Chapter Six. It is, however, clear that he never abandoned the idea that his pragmatism, later named pragmaticism, involves Scholastic Realism as realism about Categories. Pragmaticism involves realism of the three Categories:

Another doctrine which is involved in Pragmaticism… is the scholastic doctrine of realism. But the belief in this can hardly escape being accompanied by the acknowledgment that there are, besides, real vagues, and especially real possibilities… Indeed, it is the reality of some possibilities that pragmaticism is most concerned to insist upon. The article of January 1878 endeavoured to gloss over this point as unsuited to the exoteric public addressed; or perhaps the writer wavered in his own mind. He said that if a diamond were to be formed in a bed of cotton-wool, and were to be consumed there without ever having been pressed upon by any hard edge or point, it would be merely a question of nomenclature whether that diamond should be said to have been hard or not. No doubt this is true, except for the abominable falsehood in the word MERELY, implying that symbols are unreal. Nomenclature involves classification; and classification is true or false, and the generals to which it refers are either reals in the one case, or figments in the other. For… the question is, not what did happen, but whether it would have been well to engage in any line of conduct whose successful issue depended upon whether that diamond would resist an attempt to scratch it (CP 5.454).

This long quotation reveals how he accepted the reality of generals as the reality of Thirdness manifested as *esse in futuro*, i.e., as Thirdness that reveals real “would-be’s”. This vocabulary constitutes an essential part of the meaning of a symbol in his theory of signs. The acceptance of True Thirds, therefore, supposes that a real habit is a principle operative in nature and essential to understand what the Pragmatic Maxim recognised as ‘conceivable consequences’.

# Chapter 5. The Metaphysics of Continuity: Peirce’s Scholastic Realism as Synechism

## Introduction: Can a fallibilist be a metaphysician?

Peirce dismissed ontological/a priori metaphysics as “non-sensical gibberish.” (CP, 5.423; EP2: 338-339) Some philosophers believe that, in the light of this, the later absolutely central role he gives to metaphysical matters in his architectonic system can be considered rather eccentric. Sometimes these authors just omit the metaphysical features of Peirce’s philosophy with a hint of embarrassment. Against this kind of view, the thesis I have been defending through the last chapters of this dissertation has increasingly stressed the struggle for a more substantive metaphysical version of “Scholastic Realism.” I have been defending an interpretation of Peirce’s Realism as intentionally unified and continuous. As mentioned in the last chapter, Peirce considered metaphysics to be an observational science. This belief lends Scholastic Realism the utmost importance, as it becomes vital in order to give a scientific account of metaphysics. We must understand this in order to ultimately understand Peirce’s philosophical system.

Peirce believed that ontological/a priori y metaphysics blocked the way of inquiry. In his view, inquiry becomes halted when postulates incognizable items. His efforts to formulate a scientific metaphysics, on the contrary, struggled to capture the general features that are present in experience broadly construed. His reconstruction of metaphysics as scientific metaphysics aims to use of the categories as descriptions of the universes of experience. Different universes of experience comprise the hypothesis of reality. Fallibilism, as a rational attitude, then, applies to scientific metaphysics not as scepticism, but as a context-sensitive aspect of inquiry.

## Questioning the axioms of modern ontological metaphysics

Modern traditional ontological metaphysics tried to build up a metaphysical system in the fashion of geometry, in particular in constructing it from axioms that can be *intuitive* thanks to the a priori method. The ontological metaphysicians struggled for infallible and self-evident principles. The struggle for such an account of metaphysics can be traced back mainly to Spinoza[[15]](#footnote-15) and, in an astonishing systematic effort, to Kant’s transcendental deduction of the a priori principles.

By the nineteenth century many of the traditional assumptions of geometry and mathematical inquiry were challenged. Euclidian geometry, for example, started to be considered as hypothetical, provisional, and open to revision. Riemann and other mathematicians departed from that viewpoint and advanced new systems of non-Euclidean geometry. This had a liberating effect that rendered a renewed vision of mathematics as a free enterprise. Georg Cantor, for example, says:

Mathematics is perfectly free in its development and is subject only to the obvious consideration that its concepts must be free from contradictions in themselves, as well as definitely and orderly related by means of definitions to the previously existing and established concepts. (Cantor, 1883, s.8)

Peirce thought that the same kind of revision could and should be applied to assumptions about the construction of metaphysical inquiry into traditional geometry. Traditional geometry cannot capture what is required for adequate mathematical thought, and therefore the uses of it to deduce principles applicable to metaphysics are discredited. However, his aim was not to construct metaphysics as a non-Euclidean geometry, but as an independent science that may or may not be related to the principles that govern geometry, but certainly related to mathematical thought, which was believed to be the best form of rational inquiry. Peirce says in a manuscript of his ‘Harvard Lectures on Pragmatism’:

…Mathematicians always have been the very best reasoners in the world; while metaphysicians always have been the very worst. Therein is reason enough why students of philosophy should not neglect mathematics. But during the last thirty years, there has been an extraordinary mathematical development of the general doctrine of multitude, including of course, infinity, and of continuity. Philosophers would fall short of their well earned reputation as dunces if they paid much attention to this until it begins to ring in their ears from all quarters… (MS 316a)

Peirce believed that the moderns blundered in their adoption of the paradigm of geometry. He wanted to lead us back to the kind of inquiry one can find in Aristotle and the medieval (EP1:241-7), especially Duns Scotus’s account of metaphysics. Scotus’s system included, amongst other things, an account of individuation (*Quaest.* VII, q.13; *Ord.* II, d. 3, pars I, qq. 5-6) and an account of universals (*Ord.* I., d. 8, pars I, q.3, n.114) that reconciles the first principles of Aristotle’s metaphysics (especially the principles in *Met.* III, 3; 998b 22-27), taking them not as objects of a prioriknowledge. In this regard Peirce was very loyal to the Scotistic approach.

Consequently, the principles of this new metaphysics are no more than fallible hypotheses and not metaphysically necessary axioms. Peirce considered three hypotheses (EP2: 180) as equivalent to the first principles of Aristotle’s metaphysics: these three hypotheses that comprise metaphysics are the three doctrines that integrate themselves with other philosophical doctrines advanced by Peirce:

1. Synechism (or the theory of continuity)
2. Tychism (or the theory of real chance)
3. Evolution (or the theory of the tendency to habits)

I will analyse each in turn, and thus it will become apparent that they are not exactly equivalent to Scotus’ realism, although they might be recognized as being in the same spirit. These three doctrines are not absolute theories: they have a hypothetical character that can be confirmed in fallibilist endeavours. Peirce’s doctrines are considered as products of inquiry with a fallibilistic nature. It should be stressed that they are experimental and a posteriori*:* Peirce’s cosmology is an inquiry into these three doctrines discovered by observation and experimentation.

In this chapter I will explain how Peirce's Scholastic Realism can be considered to be comprised by the three doctrines we have presented so far, but first and foremost by the doctrine of continuity, named by him ‘Synechism’. Within Peirce’s system Synechism is the most important hypothesis. Yet, it is not a hypothesis derived with an a priori method. As Peirce wrote, “Synechism is not an ultimate and absolute metaphysical doctrine; it is a regulative principle of logic, prescribing what sort of hypothesis is fit to be entertained and examined” (CP 6.173).

## The origins of the doctrine of Synechism

The doctrine of Synechism was developed over time, and can be explained in two ways. One way of making sense of Synechism is to explain how experience is continuous, so the arguments for Synechism will involve the theories of perception that had been present in Peirce since his work in the JSP papers of the 1860’s, and can also be traced in his arguments for induction. I will review those aspects of Synechism. However, the most important way of making sense of Peirce’s idea of continuity, according to Peirce himself, is to understand his idea about the mathematical continuum. That idea went through different stages of development, and I shall be following the stages proposed by Vincent Potter (1996), as I believe he best captured the development of Peirce's idea of continuity. The mathematical continuum has a direct effect on the definition of the metaphysical applications of continuity: as Peirce said, the question of whether generals are real is the same as the question of whether there are true continua (CP 6.172; NEM III, 925).

The doctrine of Synechism can be understood intuitively as a tendency and an approach of thought in general. In Baldwin’s dictionary Peirce defines it as “that tendency of philosophical thought which insists upon the idea of continuity as of prime importance in philosophy and, in particular, upon the necessity of hypotheses involving true continuity” (CP 6.169). That fundamental idea seems to be a constant in Peirce’s thought, and he gave it huge importance in his work:

“…If I were to attempt to describe to you in full all the scientific beauty and truth that I find in the principle of continuity, I might say in the simple language of Matilda the Engaged: ‘the tomb would close over me e’er the entrancing topic were exhausted…” (CP 1.171)

The core of the doctrine, nonetheless, lies in a mathematical theory. Indeed, Synechism is ultimately sustained by the belief in the reality of mathematically true continua. The story of how Peirce developed the doctrine, however, is not an easy one to tell. The mathematical nuances involved were in constant progress and not always altogether consistent with each other from a mathematical viewpoint –a fact that Peirce himself highlighted. The philosophical importance of the mathematical ideas Peirce developed is very relevant, and one can observe how philosophical and mathematical ideas merge in Peirce’s idea of the continuum.

## Continuity and collections: mathematical aspects of the continuum

It has been said that whereas the other principles of Peirce's metaphysical system are derived from evolutionary biology, the case of Synechism is peculiarly and specifically derived from the study of mathematics. The following paragraphs are a more careful description of how Peirce developed his mathematical ideas about the continuum. The different aspects of the continuum will become apparent as the developments are explained.

### Pre-Cantorian period (until 1884)

In his essay ‘The Doctrine of Chances’ (1878), Peirce described his idea of continuity as a series of members with “limitless intermediation” (CP.2.646, 1878). The mathematical concept of a series can be defined as a sequence of ‘terms’ or ‘members’. In the same paper Peirce defined “continuity” as “The passage from one form to another by insensible degrees” (CP 2.646, 1878). Peirce recognised that the idea of continuity described here could be easily mistaken for the idea of a collection, so he started to direct his studies of continuity towards a mathematical definition. Define a collection as a set of members with a common trait. Peirce was interested in showing that “ideas” are involved in the notion of continuity. However, the terminology he used did not help the cause, as it was a language of collections and discrete quantities. Should we want to express the nature of continuity then the language of collections and discrete quantities is not helpful for the following reasons: the mathematical vocabulary ofcollections uses ‘membership’ as a derived property of the members and considers the members as prior and distinguished from the collection itself.

### Cantor’s continuum and Peirce’s continuum: Cantorian Period (1884-1894)

In 1884 Peirce came across Cantor’s *Grundlagen Einer Allgemeinen Mannigfaltigkeitslehre* in the Volume II of *Acta Mathematica.* This same volume contained other interesting developments with regards to the theory of numbers, for example Dedekind’s ideas about irrational numbers. Peirce later acknowledged:

I, of course, depend much upon Cantor, although my own habits of thinking about multitudes were somewhat fixed before I ever made my first acquaintances with Cantor’s work, in Vol. II of the *Acta Mathematica*, or had so much as heard of Bolzano’s celebrated definition. By the time Whitehead’s and other works had appeared, I preferred to postpone reading those works until my own ideas were in a more satisfactory condition, so that I do not know in how much of what I have to say I may have been anticipated.” (MS 27, 1905-7)

The impact of Cantor in Peirce is clear when reading his 1889 entry in *Century Dictionary* on the term ‘continuous’:

[Continuity means] in mathematics and philosophy a connection of points (or other elements) as intimate as that of the instants or points of an interval of time: thus, the *continuity* of space consists in this, that a point can move from any position to any other so that at each instant it shall have a definite and distinct position in space. This statement is not, however, a proper definition of *continuity*, but only an exemplification drawn from time. The old definitions – the fact that the adjacent parts have their limits in common (Aristotle), infinite divisibility (Kant), the fact that between any two points there is a third (which is true of the system of rational numbers) are inadequate. The less unsatisfactory definition is that of G. Cantor, that continuity is the *perfect concatenation* of a system of points…” (CP 6.164)

Cantor’s ‘perfect concatenation’ translated the German word *zusammenhaengend*. Cantor was interested in the thought of a ‘perfect’ bonding; the German term expresses the idea of the impossibility of finding a distance so small that there are not an infinite number of points of a system on it. Soon, however, both Cantor and Peirce were dissatisfied with this definition. It assimilated perfection with closure, and infinitesimal points with linear properties. Peirce realised that a concatenated system can be “condensed-in-itself,” making the notion of perfection redundant. In order to describe the closure needed for the continuum and for infinite divisibility, Peirce introduced two properties called 'Kanticity' (CP 6.121, 1892; CP 6.166, 1903) for infinite indivisibility and 'Aristotelicity' (CP 6.166, 1903) for the property of closure. What seems to be insufficient even with the use of these two properties is the underlying notion of a series being a collection. Cantor’s response to the problem was to introduce the concept of yet another property: The property of ‘linearity’. However, Peirce was not familiar with that later work of Cantor.

### The Kantistic period (1895-1908)

The best account of Peirce’s concept of continuity and the concept of continuumin this period is contained in the ‘Cambridge Lectures’ of 1898. To illustrate this concept Peirce used the structure of a line: the line could be considered as a collection of points, however “no point in this line has any distinct identity absolutely discriminated from every other” (RLT 159). The problem of conceiving a line as a collection of actual points is that the discrimination of one point actually separates that point from other points. This pattern of thought leads to paradoxes of the kind that defined the Achilles paradox: a fundamental problem of this paradoxical thought is that it does not distinguish a collection of actual points from a collection of potential points. This lack of distinction is due to the discontinuity created by actual points speaks about the main feature of the line: its continuity. A line, thereby, is better conceived as a collection of an *infinite* number of potential points. Peirce defines the mathematical continuum as a blend where the potential points are “welded”:

Namely, a continuum is a collection of so vast a multitude that in the whole universe of possibility there is no room for them to retain their distinct identities; but they become welded into one another. Thus the continuum is all that is possible, in whatever dimension it be continuous. But the general or universal of ordinary logic also comprises whatever of a certain description is possible. And thus the *continuum* is that which the Logic or Relatives shows the *true* universal to be. I say the *true* universal; for *no* realist is so foolish as to maintain that universal is a fiction. (RLT 160)

Peirce’s idea of the continuous line can be understood better by means of a picturing of a line in which a cut is performed. Putnam (1995, 13) and others identify this as a “Dedekind Cut”: the cut divides a line into two segments; let L be the left segment and R the right segment. The cut is applied to divisions where a line that can be measured in terms of rational numbers has the four following properties:

1. L and R are not empty;
2. If a number belongs to L, then so does every smaller number;
3. If a number belongs to R, then so does every bigger number;
4. Every number belongs to exactly one of the sections.

The line presents a conflicting characteristic: if we recognize it as measurable in terms of numbers and points then the line has points in itself, but if we carry out the Dedekind cut what we obtain is two lines in each segment instead of a single line. An Aristotelian conception helped Peirce to overcome this problem:

In like manner, the potential aggregate of all the abnumerable multitudes is more multitudinous than any multitude. This potential aggregate cannot be a multitude of distinct individuals any more than the aggregate of all the whole numbers can be completely counted. But it is a distinct general conception for all that… a conception of potentiality. (RLT 160)

Peirce used the concept of potentiality to define the property which meant that the line is potentially divisible infinitesimally in different segments. This possible real quality of the line does not mean an actual division though, but a potential realisation. When the Dedekind cut is carried out what happens is that the actual line develops a discontinuity that is understood in terms of the previous continuity, i.e., the division makes sense carried out in the framework of the still not divided but potentially divisible line.

Peirce moved away from his previous support of Cantor’s idea of the continuum as “perfect concatenation.” Peirce was interested in expressing the continuum in terms of sameness of kind. I believe that this separation from Cantor’s initial theory is a step in the direction of recognising the continuum as a universal and as a kind. Pierce's definition of the continuum in these years defined the continuum as a relationship of kind-membership of a whole and its parts: “that all of whose parts have parts of the same kind” (CP 6.168, 1903). The idea of the continuum involves the concept of “multitude.” Peirce was interested in discriminating between ways of accounting for series, and so he used Bolzano’s method to construct a theory of series that discriminates between ‘postnumeral’ and ‘denumerable’ multitudes or series. Postnumeral series accept potentiation and diagonalisation in the series, differentiating them from a series of cardinals. A postnumeral series might look like this: “0, 1, 2, …, N0, N1, …, 2N0, 22 N0,...” while a series of denumerable objects looks like “N0, N1, N2, …”. The notion of multiplicity interpreted in such different ways lead Peirce to be aware of Cantor’s paradox:

I now inquire, is there any multitude larger than all of these [postnumeral multitudes]? That there is a multitude greater than any of them is very evident. For every postnumeral multitude has a next greater multitude. Now suppose collections one of each postnumeral multitude, or indeed any denumerable collection of postnumeral multitudes, all unequal. As all of these are possible their aggregate is *ipso facto* possible. For aggregation is an existential relation, and the aggregate exists… by the very fact that its aggregant part exists. But this aggregate is no longer a discrete multitude, for the formula 2n>n which I have proved holds for all discrete collections cannot hold for this. (CP 4.218)

In this Kantian stage the notion of a true continuum started to come apart from the idea of a collection of discrete points, and showed the need to go beyond it with a further property which would be able to represent the nature of the continuum. Thus in 1896 Peirce defines a true continuum as a multiplicity “greater than any discrete multitude” (CP 4.219). Peirce started using the term ‘Supermultitudinous’ to express what makes a multitude *continuous* in a proper sense:

[T]he possibility of determining more than any given multitude of points, or in other words, the fact that there is room for a multitude at every part of the line makes it *continuous.* (CP 3.568)

Peirce’s definition of the continuum in the Kantistic period aimed to go beyond “metrical” considerations of the continuous series, and when a continuity is manifested in that way every part of the continuum must be continuous. This resembled Scotus’ idea of unity, as it was expressed in the first chapter: the conception of the continuum must be prior to the operations in which it becomes discrete. Due to this approach to Scotus’ conception of unity, I believe that the Post-Cantorian period could also be understood as the Scotistic period, as will be made clear below.

### Post-Cantorian period (1908-1911)

The Post-cantorian period extended from 1908 onwards. This period was characterised by Peirce’s desire to get rid of the conception of a continuum as a collection (CP 3.568). Peirce tried to solve the problem of describing a series as having parts, and yet not being a collection. In 1906, he said:

I begin by defining these thus: the *material parts* of a thing or other object, W, that is composed of such parts, are whatever things are, firstly, each and every one of them, other than W; secondly are all of some one internal nature (for example, are all places, or all spatial realities, or all spiritual realities, or are all ideas, or are all characters, or are all relations, or are all external representations, etc.); thirdly, form together a collection of objects in which no one occurs twice over and, fourthly, are such that Being of each of them together with the modes of connexion between all subcollections of them, constitute the being of W. (CP 6.174)

What Peirce meant by ‘material parts’ was opposed to the idea of ‘elements’ in a collection: the ‘material parts’ share a particular “mode of being together as a whole”. The connection between the parts is, then, perfect:

It will be seen that the definition of Material Parts involves the concept of *Connexion*, even if there is no other connexion between them than co-being; and in case no other connexion be essential to the concept of W, this latter is called a *Collection*… (CP 6.174)

What then makes a series a true continuum? It seems to me that what defines a continuum is the fact that the being of the “material part” would be affected essentially if it was not referred back to the continuum series. An element of a collection is not affected in its concept if it is taken out of the series. The series of a collection might express a connexion among the elements, but not a perfect one. The connexion between the parts also has relevance in order to define continuity: the connexion has to be un-mediated. It is immediate and does not require a further element of bonding. The immediate connexion is a consequence of a continuum becoming dimensional, i.e., time-like. The post-Cantorian definition went, then, along these lines:

Following out this idea, we soon see that it means nothing at all to say that time is unbroken. For if we all fall into a sleeping-beauty sleep, and *time itself stops during the interruption*, the instant of going to sleep is absolutely unseparated from the instant of waking; and the interruption is merely in our way of thinking, not in time itself. There are many other curious points in my new analysis. Thus, I show that my true continuum might have room for only a denumeral multitude of points, or it might have room for just any abnumeral multitude of which the units are in themselves capable of being put in a linear relationship, or there might be room for all multitudes, supposing no multitude is contrary to a linear arrangement. (CP 4.642)

The final version of Peirce’s post-Cantorian period adopted the property of “linearity.” It seems to me quite remarkable that this is the same property that Cantor adopted in his later writings. Both mathematicians were unaware of their final convergence. Yet it is even more remarkable that this final approach coincides with the Scotistic idea of unity as prior to any particular mediation.

### Continuity and the hypothesis of reality

Peirce emphasised that the nature of the true universal/real general is of the same nature as the mathematical continuum. The interpretation introduced understands the universal/general as a collection of potentials in a given dimension that gets actualized when we discriminate one of those potentials.

Synechism, as repeatedly said above, is a doctrine of real continuity. Real continuity is expressed in different Real Continua. ‘Real Continua’ must be understood as those continua that fulfil the condition of being mind-independent in the sense of the Scotistic definition of ‘real’. These continua form the conceptual basis for Peirce’s specific realist proposal: Peirce is the first philosopher that understood universals as true continua expressible in mathematical thought through diagrammatic reasoning and other means. I shall describe the process of the mathematical idea of the continuum.

I pointed out that the definition of continuity will depend on the definition of the mathematical continuum. From the definition of a true continuum as a perfect connexion of material parts it follows that Synechism is not a viewpoint that assumes elements and then finds connections between them. Quite the contrary: with the continuum what we encounter is a process first, and then its material parts could be singled out in a second moment. The idea of continuity as active in reality depends on the mathematical continuum. Real continua are mathematical continua that occur if a property, a relation, or a Third manifests a situation in which for us to understand the material parts we also need to refer to a principle operative in nature for which the sample (a second) needs to be considered an instantiation and a token. Peirce’s “Harvard experiment” (EP2: 181) (Challenging the audience to contradict the prediction that: ‘if having a stone in hand and letting it go then the stone will fall down’) refers to a true continuum in all the events that need to be referred to the law of gravitation in order to render prediction possible, and then alludes to a real continuum: a continuum that forces its independence on our inquiry. Generals are true continua in this case: if they are essential and necessary for us to render explanation possible. They must be understood not as properties derived from collections, but as wholes. A real universal, thus, is a whole needed in order to make sense of its instantiation. This is how metaphysical continuity is essential to Peirce’s Scholastic Realism, because the reality of true continua is prior to the existence of its instantiations that must be considered not as discrete and isolated events, but as material parts of a whole.

A universal pattern in nature is equivalent to a collection of abnumeral (Peirce used this term to mean *denumerable*) members. The universal is the real relation between the infinite potentials, such relation establishes the generality. Generality means that a property defines the “one over many”; this means that a given property should be considered prior and continuous to any potential instantiation. Our knowledge, as said in Chapter Two, requires generality as an essential feature. Continuity is identified with generality and generality is the content of knowledge. Now, knowledge about members seems to imply that one could have a complete picture of every member by knowing the whole collection as though deducing from the whole collection, but that was not Peirce’s aim. He wanted to stress that knowledge is always incomplete and vague. Consider the case of the natural number series. One could potentially count all the members of the series, but that would in reality be impossible because the series is potentially infinite. However, that does not mean that our knowledge of the series is irrelevant insofar as the hypothesis of having the series as reference gives sense to the use of the particular actual numbers; that use is pretty accurate indeed. Peirce interpreted the potentiality of future instantiation as vague and surrogated to the real general property introduced by a true continuum, he expressed that the continuum manifests this vagueness to render future concrete determinations available: “…yet with such vagueness as permits of its accurate determination in regard to any particular object proposed for examination” (RLT 248).

The collection of all the numbers, then, although vague, holds a relation of continuity that becomes discontinuous when actualized:

There cannot be a distinctive quality for each individual; for these qualities would form a collection too multitudinous for them to remain distinct. It must therefore be by means of relations that the individuals are distinguishable from one another. (RLT 248)

Let us pause for a second and think about this in terms of Peirce’s system of categories: the generals are continuous relations (Thirds), and in virtue of that relation they are potential members with real Firstness which emerges as existent facts (Seconds) when the Firstness is actualised. Knowledge, although fallible, is the knowledge of that identifying relationship of continuity that emerges when it is picked up by the individualisation: we cannot recognise some items as bare “individuals,” we need to conceive of them as instantiations of the continuous universal that defines them.

### Synechism and evolutionary cosmology

The previous section pointed out how the definition of continuity needs to link to the idea of the mathematical continuum, but Peirce had other ways of eliciting ideas about continuity. In this section I will review other ways in which he made sense of his realism about continuity in the construction of metaphysics as a positive science which explains the fact that Real Chance can yield a tendency to regularity. Peirce built an ‘a posteriorimetaphysics’ with the method of science and his idea of evolution.

Scholars of Peirce like T. L. Short (2010) claim that Peirce did not succeed in establishing a theory of evolutionary cosmology. For T. L. Short, Peirce:

Peirce had no cosmology. What he had was a scientific program that he never got very far with and eventually dropped. That program was to explain the laws of nature as having evolved from chaos, so as to be able to predict forms of laws remaining to be discovered (Short 2010, 521).

Moreover, W. B. Gallie, for example, calls his metaphysical ideas in evolutionary cosmology his ‘...black sheep or white elephant of his philosophical progeny” (Gallie 1952, 216). I disagree with these views: although Peirce’s intents to build a cosmology are sketchy and fragmentary, careful scrutiny in his works through the lens of his Scholastic realist ideas reveals coherence in his metaphysical and cosmological views. Reynolds (2002) carried out such a study and highlighted the value of Peirce’s cosmological ideas. I aim to provide an understanding of those ideas against the background of his Scholastic realism. I believe this chapter highlights the coherence of Peirce’s cosmological ideas with the rest of his philosophy.

Thereby, the metaphysical structure of Peirce’s evolutionary conception of the universe moves from Tychism to Synechism to Evolution. The concept of continuity, although extracted from mathematics, gives a solution for understanding the generality in nature. The entire universe, then, can be understood as a massive evolving form. Furthermore, Peirce will eventually claim that evolution is a process of crystallisation of mind, according to his objective idealism. The shape of the evolutionary story, however, does not start off from the evolved state of habits and laws of nature, but from the state of chance where a first pattern emerges and becomes law and then becomes habit.

Peirce’s evolutionary cosmology is a philosophy of chance, law and evolution interacting as explanatory principles that ought to be considered in order to develop a scientific metaphysics[[16]](#footnote-16). Peirce was first and foremost a scientist. He was educated in experimental methods and carried out scientific inquiry during the years of his professional career. He also profusely read the scientific literature of the time, and confessed himself enthusiastic about the pace that science was acquiring (EP2: 255; CP 6.415). In his numerous reviews for the *Nation* and in some of the definitions he wrote for the *Century Dictionary* we can trace how closely he understood the state of the art scientific innovations of the time.

Peirce’s evolutionary cosmology is complex and full of details. The following summary only aims to give a sense of how it contributes to and follows from Peirce’s scientific method. Our concern will be ultimately to understand how Peirce’s Evolutionary Cosmology assumed his Scholastic Realism. Evolutionary metaphysics is thus a part of Peirce’s effort to build a scientific approach to metaphysics.

According to Peirce, evolutionary cosmology follows Scotus' steps (CP. 1.420; Reynolds 2002, 10). He claims that Scotus and other philosophers predicted the fundamental concepts central to the history of science and mathematics. Peirce says that Scotus’ metaphysical concepts “go far toward supplying the philosophy which is best to harmonize with physical science” (CP 1.06). This is a surprising claim, as it makes one wonder how the overly-theoretical approach of Scotus could possibly benefit the guiding principles of scientific inquiry. Following from the observations of the last chapters of this thesis, it seems to me that we ought to expect Peirce to make such claims. The scientific realism assumed in experimentation needs to be expressed and spelt out before continuing investigation. We need to identify what kind of objects and concepts we are dealing with, and evolutionary metaphysics, more than other philosophical disciplines, depends upon principles operative in nature. It should be noted that Scholastic Realism was defined in later years as a doctrine of principles operative in nature; these are the universals of Peirce’s realist stance.

Peirce’s cosmology also feeds on the philosophic and scientific background of the late 19th century, especially in the German *Naturphilosophie*. German science was growing at an amazing pace thanks to the rise of statistical and probabilistic thinking. Peirce praised the advancements of the time, but lamented that those discoveries were polluted by the ideologies of agnosticism, necessitarianism and particularly by a mechanistic philosophy which followed from nominalist prejudices. Peirce thought that all these doctrines were slowing down scientific progress by providing inaccurate background assumptions for the investigations that supported new discoveries and useful theories.

Mechanical philosophy, which was very popular during Peirce’s lifetime, assumed a crass materialistic interpretation of the world. In consequence, laws as explained by the mechanistic framework are viewed as gears which bond the purely materialistic interactions of individuals. Mechanistic philosophy, however, is very limited when it tries to explain how things transform by following laws. For Peirce, mechanical philosophy is a form of nominalism and should thereby be resisted. Peirce thought that instead of this nominalist mechanistic philosophy, what is needed is a set of principles that make sense of the processes in the universe as they actually are and not as they are predetermined theoretically. Peirce’s move was both naturalisation of ontological metaphysics and a proposal for a posteriori metaphysical principles. A posteriori metaphysical inquiry, according to Peirce, provides the beliefs of ‘real chance’, or the doctrine of ‘Tychism’, ‘Synechism’ or the doctrine of real continua, and a belief in a relentless development of the laws of nature, which Peirce called ‘Evolutionary Cosmology’. If there is real chance, continuity and evolution, then the discoveries of contemporary sciences will turn out to be a predictable matter of course, without forgetting, of course, that they must be considered fallible and not a priori principles.

One of the constitutive laws of physics which needs explanation at this point is Peirce’s belief that there is irreversibility of processes in physics, psychology, and biology. Peirce’s dislike of mechanical philosophy grew out of a deep understanding of the principles of mechanics. The 1892 paper “The Law of Mind” contains Peirce’s argument for irreversibility. According to this text, an irreversible flow of time results from the law of the mind completing the unexplained phenomena of the principles of mechanics. Andrew Reynolds (2002, 41;49) , for example, explains that the law of mind and the law of large numbers (otherwise known as the central limit theorem) could be understood better upon the backdrop of Peirce’s Scientific Metaphysics. The law of large numbers is a theorem that describes the result of performing the same experiment a large number of times: the average result of the theorem is the expectation of a limit value to which trials in experimentation or observation approximate. The law of large numbers is itself a stochastic tendency towards a limit that is not fixed or exact, but affected by chance. The law of large numbers would be a good example of one of the principles provided by the adoption of a Scholastic Realist stance. This law is fully explained if it is integrated to the law of Mind. The law of mind supports the tendency of large numbers to approach a crystallization of chance into order. In the next quotation we find Peirce’s opinion on how the two laws need to come together, should ‘diversification’ be explained:

It would seem as if there were an increase in variety, would it not? And yet mechanical law, which the scientific infallibilist tells us is the only agency of nature, mechanical law can never produce diversification. That is a mathematical truth—a proposition of analytical mechanics; and anybody can see without any algebraical apparatus that mechanical law out of like antecedents can only produce like consequents. It is the very idea of law. So if observed facts point to real growth, they point to another agency, to spontaneity for which infallibilism provides no pigeon-hole. (CP 1.174)

The quotation above mentions that there has to be ‘another agency’ in order to satisfactorily explain ‘real growth’. This agency is given in the ‘law of mind’: the passing from chance to continuity testified in the formation and convergence of multiple habits of nature that condense (or crystallize) in the laws of mechanics first, but is not limited to these laws. So conceived, the law of mind is a hypothesis suited to explain irreversibility in the passing of chance to continuity through a tendency towards meaning.

In order to explain irreversibility in biology, Peirce conceived a molecular theory of protoplasm, which was the object of his 1892 essay ‘Man’s Glassy Essence’ (EP1: 334)*.* The theory of protoplasm proposed an explanation of how properties of the biological can emerge from properties of the physical, as both are part of a tendency towards mind. The patterns that protoplasm offers are irreversible. These patterns understood as categories are Thirdness. Without being conceived as real Thirds, an explanation of the biological irreversibility of these patterns is left incomplete. Peirce attempted to use the theory of irreversibility in biology to demonstrate that the concept of 'protoplasm' exhibits the rudimentary features of mind and habit. The “molecular theory of protoplasm”, according to Reynolds (2002, 81s), allowed Peirce to establish a connection between the stochastic *telos* (the limit of the tendency) of the law of large numbers and the more full-blown animistic *telos* expected from the mind. The connection of the two *telos* makes sense of the tendency to evolution. Evolution is, thus, given in the irreversibility in Biology in these ways: as an element of purpose and rationality, as a force of habit and, as a directed struggle to achieve ends. Peirce recognised these claims as parts of an objective idealistic philosophy. According to Peirce this philosophy allows the community of inquirers to grow towards “concrete reasonableness”. This sounds promising, but still does not clarify how the connection expressed in the irreversibility of biological processes happens to unify the irreversibility expressed in physics by the passing of a “flow of time”. In order to solve that problem Peirce proposed his theory of ‘Agapasm’ to explain that there is a statistical element associated with the law of large numbers, as well as elements of purpose and rationality. This later aspect of the theory gives us reason to accept it as an explanation of the irreversibility in psychics.

The law of mind is manifested in a complete manner in psychics, because psychics exhibits the proper features of the mind: the irreversibility of psychics is the irreversibility of the processes of sign formation. Peirce even thought about the universe as an argument that builds up relations. This relation permits us to recognise the universe as a whole as a mental sign. Peirce’s objective idealism manifests in the idea that the nature of the mind is continuous with the nature of the universe. Therefore, cosmology shows us that the process of the universe is a psychic and irreversible process of crystallization of the mind. Our minds are part of the continuity and thus the signs and the interpretations of the signs we use are as real as the objects they present.

I propose to explain how a cosmology can be constructed in such a way. Peirce offered some ideas about this in the classification of cosmologies he wrote. According to Reynolds (2002, 124-36), Peirce distinguished three types of cosmologies:

1. Elliptic cosmology: this is the cosmology represented by Epicurus, the Stoics and those who believe in an aimlessly developing universe. Elliptic cosmology affirms that the universe is the product of relentless chance and only chance, there is not a growth of structures because only chaos governs in the universe. The problem with the elliptic approach is that it does not have its foundations in the initial chance of a chaotic initial state of affairs, and if chance leads to chance then the order and the patterns emerging in between are left out without reason.
2. Parabolic cosmology: this is the approach to cosmology in which the universe is conceived as returning to the very state from which it set out.
3. Hyperbolic cosmology: this is the approach to cosmology represented by Peirce, Hegel, and those who believe that the universe grows in a process of habit formation up to the point of the crystallization of mind. Peirce, talking about his hyperbolic approach says that “[r]eason marches from premises to conclusion; nature has [an] ideal end different from its origin.” (CP 6.582).

For Peirce, the universe is an argument (EP 2: 188): it is intelligible because it is of the nature of a sign and so are our minds. Mechanistic philosophy neglects the essential aspect of cosmology: sign reading. A 'sign' is an interpretant, and interpretants are the ultimate mediation given in a Synechistic explanation of the laws of evolution, mind and habit. Although Peirce believed in real Chance, the hypothesis of chance cannot be definitive; otherwise the problems of Elliptic cosmology arise. Instead, the doctrine of chance, or Tychism, is supported as a premise of a bigger argument about the universe and its Synechistic behaviour: “Tychism is only a part and corollary of the general principles of Synechism” (RLT 11).

The “story of evolution” as described in the “hyperbolic” fashion by Peirce is a cosmological approach proposing the growth from chance to regularity and towards reasonableness. I will propose a reckoning of these ideas about reality with a reconstruction in the following stages. This is an outshot of comparison of Peirce’s evolutionary cosmology with some recent discoveries related with his early insights:

1. Formation of the laws of physics: the fundamental laws of physics are given in the theory of particles. Thus far, we have been able to reject the idea that atoms are fundamental in the sense of not being composed of other subatomic particles. In Peirce’s time Thomson discovered the electron, and years later protons and neutrons came into the account too. One of the most interesting aspects of the discovery of the basic building blocks of particle physics lies in the steady discovery that particles are more relations than bits of matter (Peirce avowed for such metaphysical idea of particles in EP2: 186-7). Thus, when the quarks were discovered the whole paradigm about particle physics shifted into a theory of relations and association of the different quarks in the formation of all the other particles. This story is fascinating: only in 2012 one of the key particles of the contemporary theory of particles, the Higgs Boson, was discovered at CERN in the Large Hadron Collider. This is probably not the place to describe the exciting succession of breakthroughs in contemporary physics. However, the key aspect of this summary note is the idea that the laws of physics are not fixed, but they have been developing positively in what we know now as the ‘standard model’. This is extremely important in challenging the dogmas of mechanicism and determinism. Research reveals that the laws of physics *could* have been different given the delicate and random variations in the first millionths of a second after the Big Bang. The sound of the explosion of the origin of the universe has an echo that has been traced in the mapping of the Cosmic Microwave Background discovered by Penzias and Wilson; those tiny variations affected all of the further evolution of the universe, including the same laws of physics. The theory of the universe coming from a singularity that explodes in a ‘big bang’ is established, but it had to compete with theories of a stable universe such as Fred Hoyle’s. These theories did not accept the expanding universe or the original singularity.
2. Formation of the laws of chemical bonding. Once atoms were formed clouds of matter collapsed and started to ignite into stars. The first atoms were extremely simple - only the first two places of our contemporary periodic table: Hydrogen and Helium. Only after three successive generations of stars and the nuclear fusion at their cores could the periodic table became the beautiful and elegant pattern that the Russian chemist Mendeleyev identified. Mendeleyev took into account different chemical properties as valences, phenomenical qualities and atomic numbers. For Peirce, (EP2: 261) Chemistry is the science that explores all the patterns of chemical bonding; they are a whole different realm of properties that form new laws beyond the very basic laws of particle physics, so chemical laws introduce another level of complexity: such complexity requires interaction of tendencies of large numbers of particles indeed, but requires more complex patterns beyond the stochastic limits: Peirce would have seen in this the need for his ‘law of mind’.
3. Laws of Astronomy. The laws of astronomy were very scarcely explored during Peirce’s time, and they were confined to the scope of the knowledge of the solar system. The sheer scale of our galaxy necessitated a massive change of measurement in astronomy, which from astronomical units changed to light-years. Another dramatic leap was the discovery that our galaxy is just one tiny spot amongst billions of galaxies contained in millions of galaxy clusters. Peirce could not possibly predict this, but it is amazingly consistent with his belief about the provisional character of both our knowledge of the universe and its cognoscibility as a symbol (EP2: 322-3). This is nowhere more the case than for astronomy in the last few years. The realization of the size of the universe was a definite breakthrough for the reaches of our cosmological knowledge. That realization was both mathematical and observational: the results of the astronomical phenomena matched the predictions of the theories that modeled the standard physical explanations of the universe. We are lucky to live in an age in which even more breakthroughs are challenging our conception and our capacity to conceive of the size of the macro-universe. Overwhelming as it is, we can answer a question that Kant would have thought unanswerable: whether the universe is expanding or shrinking. George Lemaître (1927) and Edwin Hubble (1929) discovered that the infra-red shift of the most distant galaxies is growing and, even more bizarrely, it is speeding up. Dark matter and dark energy entered the contemporary debates as hypotheses that seem very hard to evidence. However, as recently as 2012 the ripples in the space-time continuum confirmed what is probably the most complete account of the universe to date with regards of the laws of astronomy. On top of these substantial and continuous paradigm-shifts in our astronomical knowledge the knowledge of the life of stars coincides remarkably with Peirce’s idea that laws evolve (EP 2: 343-4).
4. Laws of Biology. As amazing as the evolving character of the laws of the material universe might be, it is nothing compared to the exponential scale of evolution with regards to living beings. The chemistry of carbon, based on multiple bonding allowed by the structure of the atom makes it the element by which life has developed its patterns. Proteins, amino acids and other chemical compounds are combined in a stupendous variety of forms, but most impressively, in forms that life itself has used to develop genetic patterns. Genes are probably the most impressive complex patterns that one can come across because of their importance in determining the laws of life. The contemporary story of evolutionary biology can be an example of Peirce's conception of the interaction of law and chance: the continuous pattern of the genome changes and grows by random and unstoppable mutations due to the chance conditions of the environment.
5. Laws of zoology/psychics. Do the laws of zoology and social behaviour comprise a different level not reducible to the laws of biology? The laws of zoology and social behaviour clearly seem to be different in their symbolic content. They cannot be reduced to tendencies of basic needs of reproduction and survival. Human social behaviour is governed not only by the unconscious laws of instinct and survival, but by the decisions we make. These affect not only our lives, but also the lives of other humans living or to come in the future. The continuity of our individual behaviour with social behaviour is of no little significance. Peirce (EP2: 158) harshly criticised and warned of Spencer simplistic views of social Darwinism and Scientism. We will see in a further chapter how the normative sciences of ethics, aesthetics and logic are actually of major relevance to give unity to Peirce’s evolutionary story.

This reckoning of these accounts of evolution can ever be more detailed, but I hope this summary is enough to exemplify what Peirce might have envisaged with regards to cosmology. We need to explore the characteristics of Synechism further, and by so doing the relevance of Peirce’s realistic approach will become apparent. It is remarkable that Peirce was able to predict the dissipative structures that Ilya Prigogine would include in his theory of non-equilibrium thermodynamics (Reynolds 2002, 173-4), and to start to consider the experimental evidence that eventually would lead to the development of quantum mechanics and relativity (Reynolds 2002, 137-41). As Peirce wrote:

The evolutionary process is therefore, not a mere evolution of the existing universe, but rather the process by which the very Platonic forms themselves have become or are becoming developed (RLT 258).

I would like to highlight a trait of this theory that the reader might have considered already: there is a striking similarity between Peirce’s evolutionary cosmology and contemporary cosmology. I allowed myself to present information which was not available to Peirce but which, nonetheless, comes in relevant when considering his theory in comparison to contemporary inquiry into the universe.

The whole story is the *actuation* of the general present continuum by means of a process of ‘conditionalization’. ‘Conditionalization’ is a principle of Bayesian statistics that discriminates conditional evidence. The continuum, thereby, manifests itself in the stochastic and statistic limits forced in our inquiries, particularly in the ones that rule by and large the processes by which we identify a ‘law of nature’. We identify a ‘law of nature’ by the pervasive limit to which data collection tends: this, in turn, is rule out by the law of large numbers. Peirce addressed to Bernoulli’s law of large numbers as the key principle to identify the statistical behaviour of nature:

It was found that the kinetical theory would account, in a remarkably satisfactory way, for non-conservative phenomena. It accounts for these phenomena . . . by representing that they are results of chance; or, if you please, of the law of high numbers; for it is remarkable that chance operates in one way and not in the opposite way. (CP 7.221)

Conditionalization, therefore means, in the context of evolutionary cosmology, that the universe is still developing order. What we call ‘laws’ are likely statistical limits, true continua manifested as habits. A distinction seems pertinent here: Peirce vocabulary implies that ‘habit’ is the manifestation of a ‘continuum’ as we know it, while the ‘continuum’ might be only partially known to us through its manifestation in the habit we testify. A ‘true continuum’ is, therefore, a real universal that might or might be not immediately manifested as a ‘habit’ when we know it through processes of conditionalization. Increase in habits means increase in the continua, and the continua taken together comprise the continuum of all reality. Peirce believes that complexity is organized diversity (RLT 258).

Continuity and discontinuity interact. In the discovery of real continua as a process it could be discovered that the old continuum can be changed, killed or replaced by a new continuum. As Elizabeth Cooke says with regard to the interaction within Synechism, “[t]he interaction of continuity, Tychism, and the general tendency of events to take habit, explains the present diversity of law in nature – even at the level of consciousness.” (Cooke 2011, p. 87). I began by describing the mathematical continuum with the properties of Vagueness, Generality and Potentiality. The continuum of Real Generals is the same conception of continuity applied to reality by and large. It is, therefore, the form of all that is Real: space, time, mind, matter, ideas, laws of nature, organisms, species, systems of knowledge, and systems of nature. The continuum is the concept of generality and universality. As Peirce says: “The general conditions which permit the determination of individuals” (RLT 247). One of the consequences of the adoption of Synechism is ontological: Synechism entails that there is no static ‘Being’, but that things are becoming and their becoming determines their modes of being. Peirce is what we can call an ‘Aristotelian’ with regards to topics as Potency-act modes of being; all being is in the process of becoming and thus never static. Aristotle described the relations of matter and form diachronically in the book 9 of *Met.* (*Met.* 9, 1046a-1048b). Real things are processes of infinitesimals from potentiality to actuality. Nothing is essentially discrete or separate; Synechism is the “doctrine that all that exists is continuous” (EP 1:313).

Synechism plays a role in the explanation of phenomena: it explains how phenomena relate and how the relations mediate. Synechism is paramount in the understanding of the relationship between pragmatism and metaphysics, this will be explained with detail in Chapter Six. Peirce’s Scientific Metaphysics aims to be a fallible endeavour. Infallibilism is incompatible with continuity because variation and continuity are necessary to understand change, and infallibilism freezes a belief by preventing further change. Only ontological metaphysics aims for infallibilism, the opposite of fallibilism, for Peirce, is normally a deterministic, simplistic and mechanistic view. The demand of precision in an infallibilistic way, therefore, should not be accepted. The certainty aimed by infallibilist ontological metaphysics comports a commitment to discontinuity. Discontinuity selectively accepts only discrete determinations and discrete facts. In Peirce’s mind, Discontinuity, therefore, commits to nominalism of universals: a contentious preference for individuals. As opposed to discontinuity, the mathematical image of the continuous line illustrates the point further: if we want to actualise and fix the points, we lose the continuity by introducing a discontinuous determination. Synechism, as opposed to discontinuity and nominalism, has a close relation to fallibilism. Peirce claims it is fallibilism objectified:

“…let me call your attention to the natural affinity of [the principle of continuity] to the doctrine of fallibilism. The principle of continuity is the idea of fallibilism objectified. For fallibilism is the doctrine that our knowledge is never absolute but always swims, as it were, in a continuum of uncertainty and of indeterminacy. Now the doctrine of continuity is that all things so swim in continua” (CP 1.171)

Let us clarify the distinction a bit further: Synechism is indeterminacy at ontological level and fallibilism is indeterminacy at the epistemological level. Cooke comments:

So together [fallibilism and Synechism] we see that essential to an understanding of Peirce’s fallibilism is an understanding of growth at the continuum (Cooke 2011, 89).

## Consequences of Scholastic Realism understood as Synechism

Synechism so described shuns traditional splits of ontological metaphysics. Peirce criticised in his early works the dichotomy between phenomena and unknowable things-in-themselves. He also rejected Dualism, the absoluteness of laws, and that generals can be known with absolute clarity and without vagueness. These doctrines are consequences of ontological metaphysics and its aim for absolute ultimate foundational propositions. He finally rejected ontological metaphysics altogether by offering a positive doctrine in Synechism. The following lines recapitulate some consequences of the adoption of Synechism.

1. Anti-Dualism

One of the steady features of Peirce’s philosophy throughout the different periods I have been describing is the anti-Cartesian and anti-dualist character of Peirce’s philosophy. These criticisms, as mentioned above in Chapter Two, finally developed in a positive account with Synechism. All continua evolved from the same evolutionary process that we can identify in habits and regularities in nature. Think about the traditional dichotomies of philosophy: mind/matter, object/subject, known/knower. All of them were initially part of a continuity, and although they are different in character they make sense as part of the same continuum. How does this work? Things are different in degree in the continuum, but not in kind. Habits of mind, compared to habits of matter, are more plastic, but they have their origins in the continuum of the universe. If we consider, for example, the concept of the space-time continuum of contemporary physics, we could get an idea of what means the developing of continua. Space and time, for this case, are different aspects of something which, bottom line, is part of the same continuum.

1. Generals and Vagueness

The adoption of Synechism holds a second important consequence: no laws are absolute, laws are not infallible, and in a sense they are statistical statements and nothing beyond the affirmation of a pattern that seems pervasive and recalcitrant, and that seems to work in terms of predictions. Although nomological (law-like) statements seem relevant and necessary to inquiry, they cannot be absolute, because after being explained rationally and mathematically they do not have a priori necessity. They evidence the recalcitrant character of reality, but always come from experience. Experience itself testifies that there can be variations in laws (EP 1:274). In Peirce’s evolutionary approach to metaphysics, regularity is a presupposition for the intelligibility of the world. Thirds, as patterns, are the frame of reference to identify items as belonging to a class, a general understood as continuous: x and y are part of the same general if they are similar in such and such way, and still two numerically distinct items if they are ‘different’ in such and such way. Peirce adopted Scotus’ principles of universalization and individuation here: things are similar in sharing a common nature, but their instantiations always hold a unique specificity called haecceity, defined above in Chapter One. Cooke remarks that "Knowledge of an individual member of a class or of an individual event involves the knowledge of its continuum, the general conditions for the thing or event". (Cooke 2011, 93)

Knowledge of the continuum cannot be only knowledge of the instances of the potential members of the continuum. Continuity does not necessarily mean uniformity but the characteristic of being ‘welded’ together. Consider Wittgenstein's (1953, §65-71) ideas about family resemblance across terms that are related but cannot be uniform, they belong to a general continuum but their variations entail that they cannot always enlist the same properties, even if they hold relations all along.

A positive consequence of the adoption of Scholastic Realism in the form of Synechism is that it helps us make the universe intelligible. It is because of continuity that the universe is intelligible; the universe grows in generality and diversity and consequently in intelligibility. Peirce described it as “[e]volution from the vague to the definite” (RLT 258). Peirce explained that ‘existence’ is a moment of the evolution of ‘forms’, forms are understood as the concepts of the evolving continuum:

The evolutionary process is, therefore, not a mere evolution of the *existing universe,* but rather a process by which the very Platonic forms themselves have become or are becoming developed. We shall naturally suppose, of course, that existence is a stage of evolution. *This existence* is presumably but a *special* existence. We need not suppose that every form needs for its evolution to emerge into this world, but only that it needs to enter into *some* theatre of reactions, of which this is one. The evolution of forms begins, or at any rate, has for an early stage of it, a vague potentiality; and that either is or is followed by a continuum of forms having a multitude of dimensions too great for the individual dimensions to be distinct. It must be by contraction of the vagueness of that potentiality of everything in general but of nothing in particular that the world of forms comes about (RLT 258)

Consider the relationships amongst generals within the continuum: the proximate generals will be vague in their continuity, while the developed ones are less vague and more definite, in Cooke’s (2011, 95) words “less susceptible”.

However, these generals, as forms, are still vague. Cooke mentions that “[k]nowledge is essentially changing due to the fact the very world which inquirers aim to know is itself changing.” (Cooke 2011, 95). The fact that knowledge grows because the world itself grows in intelligibility allows for the probability that new sciences might crop up in the future, but all knowledge is provisional even in cases where it seems completely reliable.

In “The Law of Mind” (EP 1: 313), Peirce affirmed that the activity of the mind depends on the same doctrine of Synechism:

[I]deas tend to spread continuously and to affect certain others which stand to them in a peculiar relation of affectability. In this spreading they lose intensity, and especially the power of affecting others, but gain generality, and become welded with other ideas. (EP 1: 313)

The mind cannot be private, because the interaction of ideas mentioned above is always public. An idea cannot last in the stream of ideas if not in a community of sign-users and scientific inquirers. Ideas spread through language. Peirce seems to coincide with opinions of the later Wittgenstein (1953, §185-243) on the irrationality of private languages: language only develops in the continuous interaction. Some examples of the pattern formation of the mind can be given in language, but also in computer simulation, in the story of contemporary physics, and so on. All these processes are processes of revision and addition, the concept of the ‘final opinion’ that I presented in two previous chapters acquires a positive justification from this fact: the final opinion is not a fixed proposition but the infinitesimal approaching limit to reality from the point of view of inquiry. The final opinion is constrained by reality, and now that we have an account of the real as true continua, our minds form an opinion because they are extensions of the world, or rather more clearly, of the habits of reality. According to Elizabeth Cooke: Peirce is a “mind integrationist” (Cooke 2011, 98), this means that Science is an interpenetration of knower and known, a mixing of mind and world. Peirce’s view is not that which other pragmatists, like Rorty (Rorty 1991, 86), criticised in correspondentist accounts: it is not about “mirroring” or “picturing” nature, because nature is ever changing, it is more about engaging with reality by integration into it, because mind itself is a feature of reality and so there is no clash between both aspects, but a continuity. Synechism integrates metaphysics and epistemology: metaphysics because the real habits are true continua and epistemology because our cognition of them is always approximate and fallible. The doctrine of Scholastic Realism is extreme, in Peirce’s words, because it accepts all sorts of items that are independent of us, no matter if they are vague or continuous. In the following chapter I will show the differences between the properties of vagueness and generality in the context of a realism of modes of being (the last and more elaborated account of Scholastic Realism). These modes of being are manifestations of aspects of continuity that support Scholastic Realism. In this chapter I addressed the importance of Synechism in Peirce’s philosophy, so much so, that I believe that Synechism characterised Peirce’s Scholastic Realism as realism about continuity. In the following chapter I will integrate this aspect of realism with the other aspects of Scholastic Realism presented in the previous chapter, the strategy that Peirce adopted to bring together all those aspects of his Scholastic Realism is his use of the concept of ‘Modes of being.’

# Chapter 6. Scholastic Realism, Modes of Being, and the Architectonic System

The mature Peirce worked towards a realism that confronts and wipes the doubts surrounding an absolute conception of reality. Such an absolute conception implies a single and ultimate way of explaining reality through inquiry. Peirce thought that this conception, explained below, was nominalistic. He opposed his mature Scholastic Realism as his definite answer against nominalism of universals. This final endeavour to improve his realism avoided the problems of his own previous realist accounts. Peirce’s early version of realism began by setting the conditions for self-controlled inquiry. The necessity to open the path of inquiry makes the inquirer go beyond purely epistemological aspects of inquiry and accept different levels of realism; such was Peirce’s purpose when he avowed different manifestations of the Categories in *The Guess at the Riddle.* Peirce affirmed that nothing is inexplicable and that any intelligible ‘why’ question has an answer we hope to discover. The need for explanation, then, seems to open and extend the scope of what ‘metaphysics made with the method of science’ can add to knowledge. Explanations, according to Peirce:

…supply a proposition which, if it had been known to be true before the phenomenon presented itself, would have rendered that phenomenon predictable, if not with certainty, at least as something very likely to occur. It thus renders that phenomenon rational, -that is, it makes it a logical consequence, necessary or probable (CP 7.192).

I have emphasised that the core of Peirce’s realism is the recognition of the reality of universals; in this chapter, it will be shown that reality has different manifestations. We will see how this realism of universals merges with a broader system of metaphysics that includes different sorts of special metaphysics, as was also known in the medieval tradition in which he was familiar. The realist approach of Peirce’s mature writings is an Aristotelian (see *Met.* 4, 2) one in spirit; it introduces the concept of ‘Modes of Being’ to express how the above-mentioned manifestations have different modes. I will explain what ‘Modes of Being’ are and why they are relevant for Peirce’s late realism. Some questions that rise at this point are: Did Peirce always defended a realist account? I will answer that positively, because we have enough evidence to say that he was consistent in both his rejection of nominalism of universals and his defence of realism. Another question, however, would be this: When Peirce defends his ‘Scholastic Realism’, is he always talking about the same kind of realism? This question is slightly more difficult to answer; however, I will answer in the affirmative in this chapter by trying to demonstrate how his Scholastic Realism is an on-going philosophical system that comprises and embraces Peirce’s different doctrines. As Peirce himself expressed it in a different context, I believe that his Scholastic Realism is a cable of ever-so-slender fibres of true continua and modes of being. This study will reveal how intertwined his realism is and his Synechism in the production of his metaphysics.

In this chapter, I will explain how the problems we reviewed in Chapter One and Two are still considered. Amongst them, the ‘Scotistic definition of reality’ stands up as a permanent feature of Peirce’s realist system. In his later writings, Peirce wanted to integrate his different doctrines under an architectonic project. Peirce’s project, I believe, derives its unity from the different characteristics that his doctrine of Scholastic Realism requires.

Thus, the purpose of this chapter is to answer the questions that arise about what kind of realism Peirce held towards the end of his life and if this realism is consistent with his previous accounts. I will show that this realism is expressed mainly in terms of Modes of Being and ultimately in his Synechism. Peirce’s realist stance, nonetheless, is no naïve realism. His realism intended to be critical by responding to two concerns:

1. Peirce’s Scholastic Realism is a proposal for Scientific Metaphysics; his Scholastic Realism of Universals is a way to defend the possibility of self-controlled scientific inquiry that develops into an entirely a posteriori metaphysical system. In other words: working with the method of science under the premises of a scholastic realist standpoint, we are bound to develop metaphysics of a scientific character, opposed to ontological metaphysics.
2. Peirce’s realism is also a necessary presupposition of any satisfactory way to demonstrate pragmatism as a logical principle.

These two routes by which we can arrive at his Scholastic Realism are deeply intertwined; I do not prioritise either, because, following the ‘ever-so-slender strands’ metaphor, I believe that Peirce’s doctrine permits the convergence of both aspects into the system, along with the idea of different modes of being working as the axis of Peirce’s philosophy. I believe that in Peirce’s mind his Scholastic Realism gives a solution to a number of different philosophical problems at once by wiping away the nominalistic mistakes. I will start, however, by explaining why the accounts and interpretations of Scholastic Realism presented in the previous chapters are included and retained in his late account. These will take the form of different *manifestations* of reality expressed and understood on the road to finding the ultimate interpretants and present them in terms of categories and modes of being. Finally, I will explain how Peirce’s architectonic system is established through the manifestation of Categories that guide particular inquiries and thus define a discipline. This last consideration is important because it shows that Peirce saw his architectonic system as a consequence of the application of the pragmatic maxim, which, in turn, presupposes his Scholastic Realism.

## Scientific metaphysics

Peirce places metaphysics among the sciences; thus, it is not exempt from the logic of science. In Chapter 2 we saw why Peirce wanted to develop a scientific as opposed to an ontological metaphysics based in *a priori* reasoning. Scientific metaphysics is the metaphysics resulting from the application of the ‘method of science’ (EP1: 120-3). In later years, Peirce situated his ‘Scientific metaphysics’ in his architectonic classification of sciences as the third highest branch of Philosophy. Philosophy is the study of the facts of reality, and metaphysics is the first application of logic. Metaphysics is the study of what can be established independently of specific experiences but still applied to the regulative laws of the logic of the Universe. Scientific metaphysics is the aim to achieve an entirely a posteriori metaphysics that conveys a *Weltanschauung* or general account for the other sciences, provided that we agree that the universe:

…has an explanation, the function of which, like that of every other logical explanation, is to unify its observed variety (CP 1.487).

Peirce believed that a rejection of metaphysics is in itself just a denial of a metaphysics we already hold; we rather want to make it explicit in order to provide the *Weltanschauung* that becomes the basis of the special sciences. Peirce divided this metaphysics into:

1. General metaphysics or ontology: studies the problem of what reality is.
2. Physical metaphysics: concentrates on the application of the categories to questions about time, space and natural laws.
3. Psychical metaphysics: concentrates on the questions of Mind and God (EP 2: 259)

Peirce’s Scientific metaphysics presupposes the acceptance of Scholastic Realism at all its levels, but in a particular way in the case of general metaphysics, which requires an account of reality. Peirce’s metaphysics needs the theory of categories to express how reality is discovered, and because of that is helped and surrogated to Phenomenology. Peirce calls Scientific metaphysics, “a discipline that is grounded in Phaneroscopy, steeped in logic, mathematical to the core, and engaged in with the scientific attitude” (De Waal, 2013, 126).

## Truth and Reality

Peirce’s earliest account of reality in the 1860s, and possibly in the 1870s seems to assert that the concept of truth is “the opinion which is fated to be agreed by all who investigate” (EP 1: 139). Pragmatists other than Peirce, for example James and Dewey, rejected realist conceptions of truth due to apparently unsolvable problems. Peirce’s conception of truth has been criticised as an example of a constitutive account of convergence in absolute truth. Philosophers like Crispin Wright believe that Peirce’s position implies the adoption of a final definitive agreement in a proposition that will not be overthrown. I oppose that reading of Peirce’s account on the grounds that he adopted an on-going fallibilism. This does not allow consideration of any proposition as final opinion. Even in his early days, it is not entirely clear that he commits himself with the view that the ‘final opinion’ is a definite proposition, rather than the gravitation of a community of enquirers towards a limit. Consider the problem of ‘lost facts’: some questions seem to have no definitive answer available to inquiry, even self-controlled inquiry. Another problem arises from the fact that there seem to be different versions of reality answering our practical concerns in a vaguely pluralist manner. The logical conception of reality gives the impression that reality is defined as the object of truth-making and that is problematic. In a previous chapter, we established some complications that arise if Peirce’s Scholastic Realism is limited to a logical conception of reality because we are not guaranteed to hold infallible propositions from which we could take the elements of an unchanging reality. However, as mentioned above, there is more to Peirce’s realism than that, and the logical conception is a starting point in Peirce’s interest in realism.

One interesting feature of Peirce’s conception of truth, as John Boler (1963, 114-6; 138) remarked, is that the truth is not to be found in the ‘given’ propositions of the knowledge we already possess and accept; the truth of a proposition is something ideally (and regulatively) situated in future inquiries. Peirce’s doctrine of ‘Objective idealism’, which finally summarises the relations between truth and reality, consisted in:

The true idealism, the pragmatistic idealism, is that reality consists in the *future* (CP 8.284).

This doctrine implies that we should not expect to find an absolute truth in the propositions we hold, we rather expect that the approximation to a stable or indefeasible proposition guarantees the hope we have in it to be true, and that is given in the conceivable consequences of the adoption of a proposition and the manifestation of its consequences in further inquiry.

Peirce, as we saw in the second chapter, defined reality as “the object of a true proposition”, but he quickly and repeatedly amended this (EP1: 139). We will observe that he steadily moved away from the first definition if that is to be understood as a proposition that we possess and accept already, but Peirce will preserve the opinion that a true proposition is an answer to a question, that we rationally hope to have elements that are not *extraneous to the matter*, and those elements are to be considered real because they are independent of particular and idiosyncratic opinions. However, if we inquire into those elements we might be surprised and discover that many things can be real in different ways, in different modes (EP2: 485). A ‘Mode’ is a distinctive way in which something is manifested; the term was borrowed from the scholastic tradition meaning ‘a particular way of something to be’. We will try to explain and spell out what modes Peirce had in mind, and how those modes are to be considered real. Let us remember first that the Scotistic Definition of Reality argues that independence of particular opinions is a hallmark of truth and reality. Something can be real: whether real relative to the external elements independent of our minds; or relative to thought in the case where that thought shows independence of particular minds and is pervasive to all minds.

Hilary Putnam has criticised Peirce’s account of truth as based in an Absolute Conception of Reality: “the world as it is there anyway independently of our experience” (see Misak 2004, 128). The weakness of this kind of account of reality is that it may omit what we recognise as secondary qualities (see Putnam 1992b, 84). Secondary qualities are properties like colour or taste. They are called ‘secondary’ because they seem to be either relative to a subjective judgment or seem to fall into an interest-dependent judgment of their properties. Their objectivity is unlike that of a “primary” property; some properties can be identified by carrying out a chemical experiment by, for example, knowing that an element reacts to oxygen by combustion. Pragmatists believe in the need to accept the objectivity of secondary qualities to preserve the capacities of our language to refer to a wider range of events that go beyond experimental science. The fact that my taste buds are not as trained as those of an experienced chef does not make the skill of the chef necessarily alien to me, because it is a ‘real’ skill, achievable under certain conditions. Did Peirce adopt a conception of reality that rules out these phenomena? Putnam has said that Peirce’s conception of convergence commits him to an absolute conception of reality. Peirce’s realism, though, as we will see below, challenges the bivalence of some beliefs though accepting them in reality. Bivalence is a property of propositions that excludes the possibility of them being anything other than false or true for us. Bivalence is important for some kinds of realism, because if we were to accept an absolute conception of reality then that would entail the bivalence of all propositions as long as there are definitive answers about their truth or falsity. Peirce’s realism seems, thus, more close to some accounts of contemporary anti-realism, particularly in the version defended in the article ‘*Realism’,* by Michael Dummett (1978), in which he argued that we cannot always account for entities that need verification-transcendent statements about a type of entity that is true of false. We may consider that there is no fact of the matter as to whether or not ‘p’ is the case if ‘p’ relates to other minds, the past, moral categories, etc. For Dummett (Dummett, 1991, 204), in the context of mathematical objects, for example, the truth of a statement consists in our ability to prove it, and therefore, is not necessarily linked to an objective reality. Peirce’s alternative answer to this problem accepts the challenge of bivalence, but reconciles language and reality by accepting ‘real vagueness’, as will be argued below.

Peirce’s realism, thus, does not depend on the Absolute conception of reality: in his writings he emphasises the reality of secondary qualities, the reality of values and even the reality of God. As Hookway (2004, 130) has rightly pointed out, when Peirce uttered in his early writings statements like: “the opinion which is fated to agree by all who investigate”, this does not necessarily imply that the object of ‘investigates’ means the ultimate nature of reality. Furthermore, Peirce’s realism is perfectly compatible with the claim that “anyone who investigates a question is rationally justified to hope that anyone who investigates a question for long enough and well enough is fated to have a stable belief that responds to that question”. This must not be understood to imply that all that is real is real in the same sense or mode. A number of distinctions must be considered here.

First, it has been established that the concept of reality is not equivalent to the concept of existence. After considering the meaning of Peirce’s categories, we are bound to recognise that existence is a matter of resistance, reaction to a first, i.e., a second, whereas Reality is a matter of mind-independence: they are not coextensive concepts. Mind-independence can be a confusing way to describe reality if what kind of independence it refers to is not established. Independence is not the idiosyncratic particularities of minds, their vagaries and the figments of particular imaginations and opinions. Mind-independence, though, does not mean independence of mind in the broader sense: it does not mean that if a mind tries to access something real, it would not have access to it. It is quite the opposite; both reality and mind are of the same nature because there is continuity between them. Peirce’s objective idealism is the doctrine by which he supported the continuity of Mind and world, as shall be explained below. As presented in previous chapters, the definition of reality is ‘Scotistic’; that definition arises from a very general statement that needs to be clarified, especially because Peirce thinks that the definition can have nominalistic misinterpretations. Peirce moved continuously towards a doctrine of Objective idealism in his later years. He believed that his realism was a stance against nominalism, not against idealism. Objective idealism meant that what is independent of a mind in particular might not be independent of mind in general and, furthermore, that it is of the same nature of the mind, it is *effete mind* (EP1, 285-297). The Scotistic definition of reality allows a number of philosophical consequences: (1) reality and existence are not coextensive terms, and especially (2) reality can be said in different ways; ‘reality’ is a technical term meaning the pervasiveness of the manifestation of a pattern in the path of inquiry.

Secondly, it is important to clarify that the concepts of reality and truth are not coextensive either. Peirce refined the concept of reality in order to provide better explanations required by prolonged and self-controlled inquiry. As for the case of the concept of truth, he did not change his ideas substantively: instead of endorsing an account of truth based in correspondence he always remarked that experience will offer the elements to understand convergence into opinion. Convergence, as mentioned above, is not an ultimately single final proposition, ‘the final opinion’. Convergence alludes to the kind of habits, patterns, and related propositions that we want to call ‘true’ if we carried through a process of self-controlled inquiry well enough and long enough. However, as said above, there might be cases in which the truth of a proposition might be beyond our reach, and that does not mean to give up finding elements that are real, i.e., independent of our opinions. Our interest in truth is relative to our epistemological aims in the process of inquiry, but the reality of what we might come across demands a system of metaphysical distinctions, a system that Peirce recognised as ‘Scientific metaphysics’. This is a consequence of the adoption of Scholastic realism; Scholastic realism is developed to a state of maturity in an account of different modes of being. The system so conceived is an improved version that renders Scientific metaphysics reasonable. Peirce’s ‘Scientific metaphysics’ is capable of explaining the fact that experience is rich enough to contain materials that account for externality and independence of thought. The theory also explains elements that although might possibly be considered internal (or relative to thought), still have a real character as elements independent of our opinions. The above-mentioned cases of secondary qualities, values, and taste, seem relevant to guarantee the usefulness of the theory: we might happen to come across elements that make even secondary qualities agreeable to reason in the long run; we might be perfectly justified in hoping for an agreement even in these matters. It will be observed that there is a universe of discourse able to account for the features known as secondary qualities by understanding their manifestation within a categorical framework, i.e., by explaining their particular ‘mode of being’.

## The Nominalist Conception of Reality superseded

It might be thought that one problem for Peirce’s account of convergence, as said above, is the problem of ‘lost facts’. I want to argue that the problem of lost facts, along with the problem of unknowable things-in-themselves are part of a nominalist conception of reality, and furthermore, that the absolute conception of reality is in fact nominalistic. The absolute conception of reality is nominalistic because it relies on a single mode of being: that of Secondness. Therefore, the absolute conception hampers the road of inquiry in the way nominalism does, because nominalism accepts Secondness and rejects other modes of being based on dogmatism. Peirce’s criticisms to nominalism have been reviewed above, but we must remember that the problems arose because nominalists posit the possibility of unknowable elements of reality.

In previous chapters, I explained that the belief in inaccessible things-in-themselves is the gist of the nominalism of universals resisted by Peirce (see CP 8.17). In a way, nominalism is a theory of reality of an absolute character; the nominalist embraces an ultimate absolute reality that cannot be accessed. This ultimate and absolute reality is always phenomenical, i.e., of the character of Secondness. Such nominalist position also requires that the ultimate element of reality is of the nature of an individual. Individuals are discrete elements distinguished from the rest of the world, i.e., absolute elements. There is a problem in the nominalistic assumption: why would we accept that reality is comprised of individual things that are unrelated and atomic, provided that even our most basic perceptual capacities tell us that the elements of experience come in continuity? I assessed this problem above when I reviewed Peirce’s arguments against intuitions in a Cartesian sense: the Cartesian takes for granted that there are ultimate elements of experience that correspond to our intuitions. This seems to be a very poor account of experience because the elements of cognition are always related; the realities they signify are also always related. The papers of the *Journal of Speculative Philosophy* series spelled out these arguments, mentioned in Chapter Two. Moreover, the absolute conception of reality is nominalistic because it only accepts one single mode of being: existence. Therefore, as explained, nominalism is committed only to Secondness. It might be objected that there could be nominalistic accounts that provide science of an atomistic backdrop and benefit of an anti-Platonistic attitude without the need to accept anything like Peirce’s extreme realism: such is the case of the *Tractarian* view of the first Wittgenstein. For Wittgenstein “the totality of true propositions is the whole of natural sciences” (1922, 4.2.1). Wittgenstein view, however, seems to accept that the propositions of the *Tractatus*, as well as the propositions of natural sciences share what Wittgenstein called the logical form: although the logical form is not acknowledged as a platonic form it is transcendental in the same sense that platonic forms are: it is a singular entity and a universal form. Peirce would have rejected this view as an unjustified reduction to atomism and singular entities against the plurality and resistance offered by continuous experience.

 Through the lens of Peirce’s theory of Categories, nominalism of universals selectively omits elements of reality given in experience. We must remember here that the concept of experience (as Peirce conceived it) allows that all the categories are present and experienced; this is why he called categories ‘Universes of experience’ (EP 2: 434-5). Peirce’s anti-nominalistic attitude rejects that conception of reality. As previously stated, his ‘extreme’ Scholastic realism allows that inquiry forces us to accept different kinds of realities. Peirce expressed this theory using the Aristotelian and Medieval jargon of ‘modes of being’. It might be suggested that even from Peirce’s sophisticated realism of different ‘modes of being’, it is not guaranteed that reality will not outrun our abilities of knowing it. I believe this objection can be responded by explaining that Peirce’s Scholastic realism does not aim for an ultimate and complete account of reality. Peirce’s realism aims to provide an account of our best habits of inquiry: the habits and principles that leave the door for further inquiry open, particularly when reality seems to overwhelm the means we have to know it. In the following section it will be seen that the liberating rejection of nominalism, according to Peirce, allows us to find different modes of being in which we can speak about reality. The rejection of nominalism is a necessary step to move into a system of ‘Scientific metaphysics’.

## Inquiry and Explanations: Scholastic Realism understood as a theory of Modes of Being

### What are Modes of Being?

The concept of ‘Modes of Being’ will be used to understand the core of Peirce’s most developed version of realism; therefore, it seems relevant to define why this concept was used to ground Scholastic Realism. It is also required to define what ‘Modes of being’ are. Peirce’s use of the concept of ‘Modes of Being’ has an Aristotelian pedigree. Aristotle famously started his monumental books of Metaphysics with the phrase: “Being is said in different ways” (*Met* 4, 1). The received translation of Aristotle used the Latin word *“Modi”*, from which the medieval philosophers developed an interpretation of Aristotle’s work explaining and expanding the senses in which Being can be said in different ways. Peirce, nurtured directly by Duns Scotus’ tradition, developed metaphysical distinctions strikingly similar to those of the medieval philosophers. Thus, Peirce quoted Scotus saying that there are ‘modus essendi’ and ‘modus significandi’; which means that there are modes of being along with modes of meaning or signification. Peirce also formulated accounts of ‘modes of inference’ that formed part of his methodeutic and pragmatism (EP 2: 233). However, Peirce did not accept that the modes of being are said equally, regardless of the context. As reviewed in the chapter devoted to Category realism; the Categories branch in different ways depending on the requirements of the discourse. In *The Guess at the Riddle* Peirce made it clear that the Categories manifest themselves in different ways; he also established that the categories can be manifested in modes. This is a consequence of inquiry pushed through different disciplines. Thus, for example, the modes of being of the coenoscopic sciences or sciences of discovery –like philosophy- are described in a different way than those of the idioscopic sciences or positive sciences like physics. I mentioned in a previous chapter that the coenoscopic sciences are positive sciences of a general nature; and we should also remember that the idioscopic sciences are the ones that use instruments or specialised concepts:

The reasons why a natural classification so draws the line between Philosophy, as coenoscopy (and Special Science as *idioscopy* (, -to follow Jeremy Bentham’s terminology, - is that a very widely different bent of genius is required for the analytical work of philosophy and for the observational work of special science (EP2: 146).

 Peirce, as we will see in the final section of this chapter, thought that the categories can be said in different ways according to their degrees of degeneracy or immediacy with respect to the modes of being of the realities they point out.

### Modes of being in the context of Universes of discourse

The expression ‘universes of discourse’ was first introduced by Boole in his book ‘*Laws of Thought’* (1854)and also used by De Morgan (1846, 380) in his discussion of syllogism. According to Peirce in *On the Algebra of Logic* of 1880, the meaning of the expression is:

The total of all that we considered possible [in the context of an expression] is called the *universe* of discourse, and may be very limited. One mode of limiting our universe is by considering only what actually occurs, so that everything which does not occur is regarded as impossible (EP 1: 207)

Peirce used the concept of ‘universes of discourse’ in a critique of Royce called *An American Plato* (W4, 250). Peirce affirmed that when we speak about things that we can hear and touch we are picking things indexically. We are ultimately aware that these things exist independently of us, not as things-in-themselves, but as things being external (independent of us, but able to be known). This is the basis of the different ‘universes of discourse’ vocabulary. There is no restriction as to how many of the universes of discourse might be included in an ever-growing hierarchy within language. The position of a term as a ‘sign’ in a universe of discourse will depend in how directly it relates to a reference. Reference is the limiting case of meaning that will determine what universe of discourse is the context of a term. Peirce’s semeiotic permitted a staggering number of different kinds of signs in a systematic classification. Peirce’s semeiotic allows classifications that help us to situate ourselves in the universes of discourse. The concept of classification frames the successive process of explanations required by metaphysics. Metaphysical inquiry, thus, can cast new modes of being according to the needs imposed by a given required explanation. In addition, semeiotics is a threefold theory of signs: sign-object-interpretant. The threefold aspect of semeiotic explanation has important metaphysical bearings: The interpretant of a sign is of the character (nature) of mind, the element contained in our conceptions. The element, as an independent content, can be singled out as real. The reality of the interpretants, however, will be relative to the context of the sign and then the mode of being of the interpretant will emerge as Thirdness. In 1902, we find Peirce explaining reality in accordance with the Scotistic definition, but with an explicit reference to the modes of being:

Reality is that mode of being by virtue of which the real thing is as it is, irrespectively of what any mind or any definite collection of minds may represent it to be (CP 5.565-6. MS 517 out of the Syllabus for the Lowell Lectures).

In Peirce’s semeiotic approach to the reality of ‘universes of discourse’, Symbols are taken to be non-degenerate, genuine signs; indices, instead, are signs degenerate in the first degree. Icons, finally, are degenerate in the second degree. Symbols must always involve both indices and icons, and indices must always involve icons. Peirce limited his attention to this trichotomy but carried his discussion deeply into epistemology and metaphysics. We might find him even making such arresting claims as: “representations have power to cause real facts” and that “there can be no reality which has not the life of a symbol” (EP 2: xxvi) in his essay *New Elements* (EP2: 300-24). Max Fisch (1986, 194) described this period, that he calls ‘Monist period’ as Peirce's “his most decisive single step towards realism” and “best statement so far of his general theory of signs.” Thus, the universes of discourse are the contexts in which a particular manifestation of a mode of being is correct for a symbol. The symbol, then, is thus made genuine. Peirce’s realism is necessary for the theory of signs because the theory aims to provide us with the ultimate interpretants of our thoughts, the ones that manifest true aspects of reality.

###  Modes of Being: The logical conception of Reality and Truth as a mode of being

The first and more straightforward way of achieving elements independent of our opinions about them is the mode of being achieved by the logical conception of reality: in this case, the concept of truth seems to be closely related to reality. What we call ‘truth’ is usually what comes up after inquiry. Some inquiries, especially in scientific matters, seem to fulfil the conditions of this very intuitive account. Consider the cases of some truths that eventually had to come to light after prolonged inquiries: their recalcitrant character makes us accept that inquiry came to an end when we arrived at a stable belief; this process eases the irritation of doubts. Peirce’s account of Scholastic realism was initiated in a purely logical account of what it means for something to be real in virtue of being an element of a true proposition. Nonetheless, as has been argued, it is important to recognize that the logical conception of reality needs to be at least corrected when we face problems like ‘lost facts’. The logical conception of reality seems incomplete if it directs inquiry to a ‘final opinion’. The logical conception, though, has the benefit of giving a starting point before the need for further inquiry; and especially if this inquiry demands elements to explain the recalcitrant character of realities that we did not come across before. The logical conception may need further elucidation of cases in which things, as Apel says, have a *mode of being in future,* or *esse in future* (Apel 1995, 120). This case opens the door to different relations between truth and reality; the mature Peirce did not abandon, as Murphy claims, the logical conception of reality. The fact that the logical conception of reality is incomplete does not mean that it has to be rejected altogether. I offered an interpretation of the final conception as a theory that explains that truth is a limit to which inquiry should gravitate towards. Peirce assumed the particular approach of the logical conception as a part of a bigger and more inclusive theory of reality. The doctrine of the logical conception applies for cases in which convergence in truth is an aim of inquiry. The later version of Peirce’s realism includes different realities and different kinds of truths, but he did not restrict reality to what is considered true. Reality is a metaphysical concept and truth is an epistemological one, they are not coextensive. The difference between the two concepts emerges when inquiry renders the scope of realities wider than that of what can be elements of a proposition we already call true. We call a proposition a ‘true proposition’ if it approaches a limit that we acknowledge as ‘real’ (independent of us).

How can this be so? In a letter to Cantor, Peirce showed how truth and reality can be related in different ways, so although they are not equivalent, there are important salient relations given in the process of inquiry between both. Peirce is at pains to explain to Cantor that ‘truth’ is a limit towards mind-independence:

By a true proposition (if there be any such thing) I mean a proposition which at some time, past or future, emerges into thought, and has the following three characters:

1st, no direct effort of yours, mine, or anybody's, can reverse it permanently, or even permanently prevent its asserting itself;

2nd, no reasoning or discussion can permanently prevent its asserting itself;

3rd, any prediction based on the proposition, as to what ought to present itself in experience under certain conditions, will be fulfilled when those conditions are satisfied.

By a reality, I mean anything represented in a true proposition.

By a positive reality or truth, I mean one to which all three of the above criteria can be applied, - of course imperfectly, since we can never carry them out to the end.

By an ideal reality or truth, I mean one to which the first two criteria can be applied imperfectly, but the third not at all, since the proposition does not imply that any particular state of things will ever appear in experience. Such is a truth of pure mathematics.

By an ultimate reality or truth, I mean one to which the first criterion can be in some measure applied, but which can never be overthrown or rendered clearer by any reasoning, and upon which alone no predictions can be based. Thus, if you are kicked by a horse, the fact of the pain is beyond all discussion and far less can it be shaken or established by any experimentation. (Letter to Georg Cantor, NEM 3:773, 1900)

The relations between truth and reality are not simple, inquiry can always overthrow a proposition we called true before. In addition, we might want to call a proposition true if a criterion of prediction fits pervasive experience and renders experimentation intelligible. Peirce drew, then, a concrete distinction between truth and reality, all inquiries aim at the truth, but not in the same sense:

Now the different sciences deal with different kinds of truth; mathematical truth is one thing, ethical truth is another, the actually exiting state of the universe is a third; but all those different conceptions have in common something very marked and clear. We all hope that the different scientific inquiries in which we are severally engaged are going ultimately to lead to some definitely established conclusion, which conclusion we endeavour to anticipate in some measure. Agreement with the ultimate proposition that we look forward to, -agreement with that, whatever it may turn out to be, is the scientific truth. (CP 7.187, 1901)

All beliefs, then, have a fallible character. There will always be room for improvement of our concepts when they are contrasted with experience; this is why Peirce doubted the concept of ‘belief’ was fit for a scientific metaphysics. We are in a better position if we accept that the truth of a scientific hypothesis has always the character of a habit operative in nature that cannot be fixed by a definitive proposition. The logical conception is correct insofar as it explains that we should call ‘true’ any proposition that results from good enough and long enough processes of inquiry. This does not mean that the proposition is definitive. The late theory of reality allows us to consider ‘truth’ as a mode of being of a proposition that embodies a habit (tendency) gravitating around a limit given by the demands of self-controlled inquiry. This limit, however, can be vague. I will move into the topic of vagueness now, because the nature of experience seems to present us with borderline cases that challenge the fixed character of a proposition as true. Reality, as will become clear, contains elements of real vagueness.

### Modes of Being: Vagueness

Whether a proposition is true or not is relative to a universe of discourse, but the vagueness of some realities seems to challenge the belief that convergence will ultimately reveal the truth of a proposition. We seem to encounter vagueness in many contexts. Consider the definition of ‘life’, for example: we do not hesitate to describe whether a human being is alive or deceased because we have clear criteria to determine so. Exceptionally, however, there are cases where that kind of definition of life is insufficient. Suppose the case of a biologist trying to make sense of whether a virus has life or not; depending on the answer, she has also to explain how the virus is living in what particular moments, circumstances, etc. The concept of life seems to present us with some unavoidable vagueness in a number of limiting cases and we should not be so keen to dismiss those cases, provided we want to push our inquiry forward as much as we can. In observation and experimentation, there is always an amount of variation that is irreducible to the applicability of a concept. Suppose I want to say that a particular subatomic particle is meant to behave in such and such a way: my prediction presupposes that from a different range of particles, the particle I am looking for should be the one ‘closer’ to the range of expected behaviour I set out as an effective prediction. This vagueness does not overthrow the value of a theoretical prediction; it only supposes that there will always be an inevitable vagueness in which the continuity and predictability given in experimentation will manifest.

Michael Dummett (1995) proposed that the different versions of realism are unified under a principle of unification. Such a principle will be the logical principle of Bivalence mentioned above. Dummett thought that every realist theory accepts bivalence. The unification of all forms of realism under that principle might indeed apply to the absolute conception of reality, but it does not to Peirce’s realism. I shall explain why I do not believe that Peirce’s realism is affected by the objections against bivalence. First, Dummett believed that vagueness cannot be seriously accepted in any theory of reality. In ‘Wang’s Paradox’ (1975, 260) Dummett wrote:

The notion that things might actually *be* vague, as well as being vaguely described, is not properly intelligible.

One might wonder if Dummett might be animated by a nominalistic prejudice that for something to be intelligible it has to be discrete. It is not clear why we should not believe that there might be cases in which reality is not bivalent to us. Against this assumption, Crispin Wright has said:

…[to suggest that bivalence] is or should be the hallmark of realism everywhere is accordingly to be committed to claiming that there is no such thing as realism about the vague discourse, or that the vagueness of a statement, whatever exactly it is held to consist in, is a feature consistent with its possession of a determinate truth value. Neither suggestion is remotely plausible. (Wright 1987, 4)

Secondly, in opposition to Dummett, our reading of Peirce could even suppose that vagueness occupies a special place in Peirce’s realism. Tiercelin (1992), for example, thinks vagueness is the principle that unifies Peirce’s realism. We may or may not agree with Tiercelin about how essential vagueness is for Peirce’s realism; however, it is true that Peirce steadily moved towards accepting not only the vagueness of the real but the reality of vagueness as well. Peirce suggested that a real universal is general and vague. Insofar as Universals are not ultimate ‘platonic ideas’ (CP 1.27, n.1), their vagueness is a real aspect of them. Peirce explained:

One may entertain the theory that all vagueness is due to a defect of cogitation or cognition. It is a natural kind of nominalism […] (CP 4.344)

I have repeatedly said that we must understand ‘real’ as what is independent of our opinions. We can also say that some vagueness must be real because self-controlled inquiry finds it. Vagueness can be considered as Secondness resisting our desire for precision, and as we discover universals we acknowledge they are vague and continuous (their unity is prior to numerical). The mode of being of vagueness is a Second, whereas the mode of being of the continuum, as we will see with respect to Synechism, is of the nature of a habit, i.e., a Third. Peirce wrote:

In this case, as in others, we must admit that vagueness is a universal real principle, and not a deficiency of our knowledge or of our thought. (CP 4.344)

Does this mean that we have to abandon the concept of truth when there is inevitable vagueness? Not necessarily: it will perhaps mean that what we want to call true has no definite specific character instead. What we call a ‘vague’ will express what ‘mediates’ across something, if what we study manifests *continuous* patterns presented by experience. In traditional conceptions of truth, the concept of truth is usually related with the principle of bivalence: we will aim to label a proposition either true or false, but not both. However, in the broader context of Scientific Metaphysics the principle of bivalence can be challenged on the grounds of cases where reality is vague and we cannot tell for sure whether some proposition alluding to that reality is true or false. Such are the cases of the *Sorites* problems: how can we exactly tell when somebody is bald? Is there a numerical requirement of things to comprise a bunch, and so forth? Peirce’s theory tells us that the principle of bivalence is not a law of logic, but a regulative assumption of inquiry. The assumption can be gauged and used depending on the questions that prompted inquiry. If we stop inquiry because we cannot describe experience as a set of true propositions we will incur a nominalist prejudice. Our commitments to inquiry are beyond the constitutive aspects of traditional constitutive accounts of truth based on bivalence. Traditional theories of truth as correspondence or coherence fall in the scope of the principle of bivalence. For Peirce’s realism, the denial of bivalence, instead of being a problem, is positive: we want to hope that our commitments to truth are warranted hopes. Peirce’s late realism accepts that vagues can be considered as modes of being beyond bivalence and still real.

Throughout this study I have focused in how Peirce’s pragmatist philosophy aims to clarify the ‘concept of reality’ or ‘hypothesis of reality’. Peirce’s realist account vindicates the Scotistic definition of Reality: “that whose characters are independent of what anyone may think them to be” (W3, 271, 1878). A pragmatic clarification is a set of conditional sentences from which the consequences of adopting a proposition can be followed and monitored in the practical bearings of future experience, i.e., the conditional sentences will be subjunctive conditionals, not necessarily indicative ones. In 1901, he recognised this characterization of reality as:

That mode of being by virtue of which the real thing is as it is, irrespectively of what any mind or definite collection of minds may represent it to be. (CP 5.565, 1901)

Bearing these clarifications in mind, we can say that Peirce did not avow an absolute conception of reality for the following reasons: he acknowledged that convergence and ‘regulative hopes’ in the opinions of the community of inquiry are ‘modes of being’. Vagueness, thus, is a pervasive aspect of experience that needs particular responses that satisfy the irritation of a doubt. Hookway mentions:

After 1880, he [Peirce] had a new way to explain the concept of reality: we directly perceive external things as external, and (by 1903) when I perceive a red book, that independently existing book is the *immediate* object of my perception. (Hookway 2004, 129)

The mature Peirce steadily grew towards a modal shift. Peirce not only recognized the reality of Thirds and Seconds, but even Firsts. ‘Firsts’, as explained above, include *posibilia.* This means that even things that are possible might be real. Possibilities are real in the sense that they might manifest themselves in our cognition through their vague and not determined reality. The reality of Vagueness is a case of essential indeterminacy found at different levels. Different levels of vagueness surround habits and beliefs. Vagueness and generality are forms of real indeterminacy. Peirce’s realism embraces the reality of vagues. As said above, realism with regard to vagues does not imply Dummett’s objection to the principle of unification. Tiercelin writes:

Vagueness is not, therefore, a semantic notion which would correspond to the fact that a sign has no reference, since vagueness affects not the object of the sign, but its interpretant. (Tiercelin 1992, 68)

### Modes of Being: True Continua

I introduced Synechism as an achievement in Peirce’s conception of Scholastic Realism in previous discussions. Although the theory of continuity was always assumed in Peirce’s realism and relevant to his case; the mature account of continuity and Synechism comes to be the unifying element of all the versions of his realism. These different elements of the theory come finally to rest in the hypothesis of the continuity of reality. Peirce’s generals are ultimately true continua; these must be understood as real habits manifested as operative principles in nature. Indeed, Peirce’s Synechism is overarching and essential for his theory of reality; it is the ultimate ground of his account of reality. In a previous chapter ‘true continua’ were defined; we ought to remember that the characteristics of true continua are those of the mathematical continuum. Another important idea to remember is that the continuity defined is metaphysical: it refers to the essence of what is defined in the scope of the universal property. General (universal) properties constitute the ground of continuity. Peirce did not subsume all reality in true continua; there can be pseudo-continua even in things that seem to exhibit generality. Real continuity might not be the case if: for a given series we can speak of elements and individuals in the series without a necessary reference to the series before the elements. Collections, for example, are not candidates should we want to express an intrinsic essential mode of being of a necessary generality. The elements of the collections are not properly ‘welded’ in the sense required. Bearing that in mind allows the consideration that Synechism expresses the most important mode of being concerning Scholastic Realism: the mode of being of a true continuum or universal. Now, let us review the arguments for the importance of Synechism.

As early as 1893 Peirce affirmed in an essay, ‘Immortality in the light of Synechism’:

I have proposed to make Synechism mean the tendency to regard everything as continuous. (EP 2:1)

Peirce also affirms there that all further clarification about experience needs to somehow refer to a thesis of continuity. Synechism, thus, can abide neither dualism nor incognizables (EP 2: 2). However important these claims are, we need to understand the argument from which they are obtained. First, let us remember that the same Scholastic Realism presented as a fallible but warranted proposition that there are real operative principles in nature; this is the realism involved in Synechism. Second, Peirce even recognized that Synechism is “Fallibilism objectified” (see Cooke 2011). Furthermore, Peirce’s proof of pragmatism also takes Scholastic Realism as one of its premises and ascribes to it an important burden. According to Peirce, the success of abductions can only be so thanks to Scholastic Realism: propositions in the past are going to be made true in the future. The acceptance of Scholastic Realism generates propositions that Peirce called ‘would-be’s’; these propositions are acknowledged as ‘interpretants’ in his semeiotic theory. The logical interpretant that pragmatism seeks for must be of the nature of a habit (EP 2: 398, 1907)

A true would-be is as real as an actuality. (EP2: 451, 1909)

From these premises, it follows that the Modes of Being of ‘habit’ as a ‘would-be’ are the future patterns that will emerge in continued experiences. They are real Thirds manifested as habits. Before explaining further aspects of this particular mode of being, it is necessary to reconsider the argument about the reality of chance (or Tychism). Indeed, as mentioned above in the chapter devoted to Synechism, we understand the importance of metaphysics if we adopt an *a posteriori* and historical account of evolutionary cosmology. This approach comprised the metaphysics provided by the *Monist* papers. Analogue to a mathematical ordering of series, evolution goes from chance to continuity. Order achieved by evolution from chance is intelligible but not inevitable. We observe a tendency to habit by our a posteriori inquiries. Peirce’s metaphysics, therefore, is not *a priori* metaphysics. Should the hypothesis of Tychism be the case, then realism is a consequence: Peirce offers an explanation of how order came to be in a process of continuity; tendencies emerge and get stronger. Synechism tells us what realism consists in: the acceptance of continua that are operative in the real world. Continua are operative in representations too; the law or true continuum is real because it justifies and explains what happens in reality. The logical consequence of Peirce’s explanation is that we must accept realism because it is the only way to give sense to the identity between representations and laws. Laws are understood as habits, conceiving these as representations in the same way that cognitions are habits and elements of the mind. ‘Ultimately logical’ interpretants are themselves the habits they make sense of. Applying the Pragmatic Maxim leads us to see what a habit involves. Habits are manifestations of patterns and elements of nature behaving in a regular way as laws. The habits that emerge and work as ultimate interpretants are ‘true continua’, and they are also the true universals. Peirce grounded realism in the belief in true universals as ‘true continua’:

[…] Thus the continuum is that which the logic of relatives shows the *true* universal to be. I say the *true* universal; for no realist is so foolish to maintain that no universal is a fiction. (NEM IV. P. 343)

Should we adopt the Pragmatic Maxim, we will find that inference needs an interpretant. Interpretants, although they could be vague or continuous, are the elements of explanations; these are of the form of a habit or Thirdness:

The statement of the conditionals then becomes synonymous with the expression of a law (or habit) which rules experience and which constitutes the ultimate (though irreducible and endless) meaning of the proposition. (CP 5.491)

I stressed that ‘vagueness’ offers itself as resistance or ‘outward clash’ to cognition. An explanation is needed, however, for how universals express a continuous character. Regularities demand explanation. The patterns that are presented to us with a continuous character could be different from the vagueness in which they might be distinguished. We account for a range of experiences presented to us as patterns of a continuous character; those patterns are characterised by vagueness and require universal conceptions.

Peirce’s proposal for an ultimate account of universals is the theory of the true continua. Synechism is at the core of this realistic doctrine. Continua, thus, are particular modes of being emerging in the process of inquiry. True continua are possibly the utmost important elements of mind-independence:

* Continua may assume vagueness. There is a mode of being given in the following case: the manifestation of a universal differs in degree but not in kind. A true prediction of a real predicate of something that has a mode of being *in futuro*, i.e., if a habit manifests itself in a particular way we should expect such and such consequences. A true ‘would be’ is a prediction that would instantiate cases in different ways true for a number of future predictions. For example, the prediction of the descent of a stone if I let it fall from my hand will account for the true ‘would be’ of the fall. However, the infinitesimal differences between particular courses of the trajectory of the stone might vary in multiple ways.
* Continua make evolution reasonable. Evolution needs to be conceived as a continuous process. A theory of evolution would not make sense if it is comprised only of discrete series of different things succeeding one another. Minimal variations make it impossible to define, for example, when a species is detached from another exactly. Hume’s objections do not apply to continua due to the fact that cause and effect are not two separated events but one single event with two or more aspects.

Peirce’s continua can be defined in the context of multiple universes of discourse: in the context of metaphysics they correspond with ‘universal’ predicates. Continua, as stressed in Chapter One, are equivalent to universals in the sense that Duns Scotus gave to his concept of ‘Common Nature’.

Peirce’s way of explaining universals and individuation, composition and haecceity is remarkably loyal to Scotus’ philosophy. Although with an emphasis in the universal rather than in the singular Peirce was a follower of Scotus. Peirce’s theory of continua is also relevant to mathematics in several respects: it explains what is at the foundations of mathematics with its specific modes of being (the way that the objects of mathematics are real). The theory provides a way of unifying different branches of mathematics from arithmetic to topology. For example, to use modern terminology, Peirce claimed to have shown the existence of ordered fields that were non-Archimedean. It was these non-Archimedean fields that Peirce now wanted to call genuine continua.

### Modes of Being: The universes of Experience and the System of Categories as products of inquiry

Peirce’s evaluation of other metaphysical systems is based in either the positive or negative treatment they have of his Categories. He summarised his position in the *Harvard Lectures*. In these lectures, it is the dependence of Thirdness on action (Secondness) and feeling (Firstness) that distinguishes pragmaticism from the absolute idealism of Hegel.

According to Peirce (EP2: 180), his system of metaphysics has subdivisions:

1. Aristotle’s system of metaphysics
2. Scotus’ system
3. Peirce’s system

These versions of the system do not necessarily contradict themselves; it is a matter of degree, such as Peirce’s defence of the reality of Thirdness as the most important part of his system of metaphysics in which the description of the categorial character of reality comes together. The universe is a great symbol "working out its conclusions in living realities."

Peirce assessed other metaphysical systems under the criterion of how attuned to his own system of categories they are. The lecture presents a diagram (EP2: 180) explaining the already existent metaphysical systems as well as how they can be explained in accordance with the understanding of categories they have.

Fig 2. Peirce’s Diagram of classes of metaphysics (EP2: 180)



I Nihilism, so-called, and Idealistic Sensualism

II Strict individualism. The doctrine of Lutoslawski and his unpronounceable master.

III Hegelianism of all shades.

II III Cartesianism of all kinds, Leibnizianism, Spinozism and the metaphysics of the physics today.

I III Berkeleyanism

I II Ordinary Nominalism

I II III The metaphysics that recognises all the categories may need at once to be subdivided. But I shall not stop to consider its subdivision. It embraces Kantism, -Reid’s philosophy and the Platonic philosophy of which Aristotelianism is a special development (EP 2: 180)

Peirce recognised his system as the seventh correct one. He believes his system shares a common metaphysical system with Aristotle and especially with Scotus’ interpretation of Aristotle. His system, then, will be the better subsequent version available of the initially correct ideas of Aristotle and Scotus. The defence of the reality of Thirdness is, thus, the core of Peirce’s lecture. In his view, only the seventh system acknowledges the fundamental truth of Scholastic realism: the possibility of science. According to Peirce, “a principle operative in nature that accounts for the regularity of natural events”. The brute fact of those events is real prima facie, but a theory of perception needs to account for *how we* perceive the real facts. I mentioned above that percepts and perceptual judgments also hold a basic generality.

Peirce proposed a simple experiment: challenging his audience to deny the prediction that a stone would fall from his hand (after letting it drop). The point of the experiment, of course, is not the confirmation of a platitude. The intention was to show that the reactionary character of the stone dropping was “melded” (Turrisi 1992, 60) to a rule or general proposition that “all solid bodies fall in the absence of any upward force or pressure.” Now, Peirce’s intention is not to make people agree to a platitude, rather to propose that the confidence that the general proposition: ‘stones fall after dropping them’ is a proper basis for predicting events requires a realist account, particularly an account of Scholastic realism of principles operative in nature, of the nature of Thirdness.

Let us compare the two accounts of reality at play, according to Peirce: as in the above analysis of Peirce’s early account of reality, there are two formulations of the Scotistic definition of reality, one nominalist of universals and one realist of universals:

On the one hand, there is a nominalist account that asserts that regular events occur as a matter of chance alone and without connection between them, as there are no real universal principles operating in nature: real universal principles are denied due the overarching principle of ‘chance’, one that excludes the possibility of other principles. If that account is true, it follows that there is a contradiction with what we normally assume in observation, experience and induction, as well as in common sense. In all those operations we assume regularities and active principles operative in nature as well as in our minds: we act under the belief that the principles we infer are continuous with nature and hence render prediction available. The reader should notice that ‘chance’ here is unlike the doctrine of Tychism, because nominalistic chance is permanent and, consequently, determinate.

On the other hand, the realist account asserts that there is a reason, a cause of the regularity of those events said to be lawful. If that hypothesis is true, then the conditions of possibility of scientific operations are fulfilled. Peirce’s own formulations in MS 309 of the two accounts with regards to the experiment with the stone and the prediction of its falling are the following:

Nominalist Hypothesis of Chance (NH):

‘First, the uniformity with which those stones have fallen has been due to mere chance and affords no grounds whatever, not the slightest, for any expectation that the next stone that shall be let go will fall’ (MS 309).

Realist Hypothesis of real principles operative in nature (RH):

‘Second, the uniformity with which stones have fallen has been due to some active general principle, in which case it would be a strange coincidence that it should cease to act at the moment my prediction was based upon it’ (MS 309)

Comparing the two hypotheses we can observe characteristics of each:

1. A generalisation of NH cannot be falsified
2. Every regularity based on RH can be falsified
3. Should a hypothesis be of scientific value, it must be falsifiable
4. Therefore RH holds scientific value
5. Science must be made with falsifiable hypotheses
6. Therefore, science presupposes RH

Peirce affirmed that the Scientific *Weltanschauung* operates under the *Logica Utens* provided by the adoption of the realist hypothesis. Peirce believed that there is a derived hypothesis from the RH: there is some active general principle and, finally, Scholastic realism will be defined as:

“The doctrine that believes in general principles and uniformities” (EP2: 183)

What is involved in the concept of a Principle active in nature, the core of Peirce’s Scholastic Realism? Let me answer that question by introducing the context in which Peirce is concerned with a widespread nominalistic account in his time.

It will be unfair to reduce nominalism to what I called NH, as a nominalist normally would not claim that she/he adopts ‘chance’ as an explanation of phenomena. The nominalist would rather rely in the belief that there is no generalisation independent of our psychological conditions: we are used to see phenomena and we tend to generalise according to our familiar custom. A Humean account of law and causation will adopt only one aspect of NH: there are no *real* principles operative in nature. Hume wrote that ‘causation’ is the customary basis of all reasoning concerning matters of fact: “reasonings… it is constantly supposed that there is a connection between the present fact and that which is inferred from it” (EHU, 26-7). For Hume, then, the supposition is a psychological habit that does not need to have a counterpart in the real world, in which scattered events do not occur in correlation. A Humean of laws will perhaps argue that a relation just holds as a matter of fact and falsified by a single counterinstance, and therefore NH will not be a good example of her account. However, there is a presupposed premise in Hume’s account that might be highlighted by Peirce’s critique: for the Humean, facts are isolated things, they are individual and we experience them one at a time. Peirce opposed that claim. Peirce’s account of experience follows Scholastic Realism in so far as our successful endeavours in experience suppose continuity in the events of the world because if we supposed all facts (seconds) as independent, we would be unable to even know them or make them signs by knowing them. Synechism opposes a psychological Humean account of habits. Scholastic Realism is realism of thirds, principles operative in nature, but also realism of seconds, the events that allow us to elaborate perceptual judgments of facts, of the outward clash of our senses; it is also a realism of firsts because we do not believe that the qualities of experience are illusions. Peirce’s objective idealism (see the *Century Dictionary* entry on ‘idealism’ below), moreover, affirmed that the nature of the habits in our minds is continuous with the nature of habits in nature, as we are ‘made’ of the same stuff as the rest of the world (Turrisi 1992, 63). Peirce affirms two degrees of Firstness in perception and perceptual judgments; they are ‘inferences’ insofar as they are determinations from premises. The Humean nominalistic account, for Peirce, errs in supposing that our experience is uniquely the experience of the individual. These ideas of Peirce are summarised in the following definitions he wrote for the *Century Dictionary:*

Nominalism: 1. The doctrine that nothing is general but names; more specifically, the doctrine that common nouns, as man, horse, represent in their generality nothing in the real things, but are mere conveniences for speaking of many things at once, or at most necessities of human thought; individualism.

Idealism: 1. The metaphysical doctrine that the real is of the nature of thought; the doctrine that all reality is in its nature psychical.

Realist: 1. A logician who holds that the essences of natural classes have some mode of being in the real things; in this sense distinguished as a scholastic realist; opposed to nominalist. 2. A philosopher who believes in the real existence of the external world as independent of all thought about it, or, at least, of the thought of any individual or any number of individuals (EP1: xxiv)

The definitions above appear as accepted as parts of his system of metaphysics described in his *Harvard Lectures* (EP2: 280).

The lecture on the ‘Seven Systems of Metaphysics’ is not only concerned with the reality of Thirdness. In the same lecture Peirce argued for the reality of Firstness and Secondness involved in conceiving the universe as an argument (MS 309): Peirce understood any phenomena to be ‘evidence’ of premises and conclusions, in spite of not having the form of propositions[[17]](#footnote-17). Percepts (qualities) are identified as Firsts, they are the limiting cases of inference. They and other elements of experience are real if they meet the conditions of a category that includes reality, and this is especially true for thirds: even secondary qualities can be law-governed processes, and therefore real. Now, they can be external or internal to mind, and a hierarchy of different thirds needs to be unfolded: There are different kinds of thirds according to the degrees of directness in which the signs involved in referring to them can be manifested. Secondary qualities can be considered internal thirds, because from the point of view of the theory of signs, they are interpretants. They are real interpretants, though their reality is surrogated to a universe of discourse. Unlike the limiting cases of inference mentioned above, the reality of the interpretants of secondary qualities is that of a ‘degenerate’ Thirdness. ‘Degenerate Thirdness’ is mediation that is derivative of other more ‘immediate realities’, i.e., there are immediate Thirds and degenerate Thirds. The reality of secondary qualities is degenerate Thirdness, unlike the reality of external thirds. Think, for example, in natural kinds: their properties emerge provided in each of the elements that form them; yet, natural kinds are pervasive in scientific knowledge in an immediate manner. If we were to classify animals either by their appearance or DNA we could possibly obtain two real classifications. However, there is no doubt that the classification based in DNA is an ‘external Third’; it has properties that emerge strongly as universal and continuous across the different species of animals, as opposed to the mediate quality of appearance.

### Modes of Being: Perception

Peirce’s *Harvard Lectures* (HLs) of 1903 attempted to clarify what kind of Pragmatism he was aiming to achieve. In the Harvard Lectures, Peirce introduces a new theory of perception grounded in the Categories and the results from phenomenology, aesthetics and ethics. For Peirce, there is a realm of reality associated with each of the Categories; phenomenology helps us to see that by prolonging inquiry in the context of a discipline of knowledge we will eventually find a realm where Categories are manifested. With regards to the classification of disciplines, the Category that outstands is Thirdness. Theories of perception require this methodology. The reality of Thirdness, thus, is necessary to explain a mode of influence of external facts that cannot be explained by mechanical action alone. Peirce argued that pragmatism is a logical or semeiotic thesis concerning the meaning of a particular kind of symbol: the proposition. Peirce’s approach to perception reveals a ‘mode of being’ and uses his pragmatic method and semeiotic to ground perception in the Categories.

Peirce recognised propositions as signs. Signs refer to their objects in two ways: *indexically* and *iconically*. On the one hand, to refer *indexically* is to address the subjects of the proposition. Reference in an *iconic* way, on the other hand, points out the predicates of the proposition. The proposition, as a symbol, bridges reality and language. From the standpoint of Peirce’s realism, the HLs have a very important point of argumentation in explaining how the proposition connects propositional thought and perception. Peirce’s realism of Categories appears: a distinction between percepts (which are not propositional) from ‘perceptual judgments’ (which are propositional) addresses real elements of perception mediated by reference. For instance, Peirce’s example of a ‘composite photograph’ reflects how generality is given in percepts as well as perceptual judgments. A composite photograph is a complex representation. However, this representation reflects reality better than a simple photograph; a simple photograph can only account for one angle of an event or fact. Peirce rejected, as we will see below, the view that perception is composed of individual discrete impressions. Perceptual judgments are the first premises of all reasoning. The processes by which perceptual judgments arise from percepts became crucial for Peirce’s realist case. If perceptual judgments are the starting points for all intellectual development, then we must be able to perceive generality; percepts are the limiting cases of inference where there are perceptual judgments. A logical consequence of this trend of thought is that percepts are themselves general: we cannot single them out as individuals without carrying out inferential steps.

Peirce’s interest in realism converges with his constant desire to offer a proof for pragmatism. The assumption is that Scholastic Realism is one of the premises of a proof of pragmatism: should we want to carry successful abductions (and inferences in general) we need to adopt Scholastic Realism first. What mediates between all our inferential processes is a real mediation, only provided by Scholastic Realism. The proof of pragmatism did not have a definitive form; it seems that one of the things Peirce continued to believe was the fundamental assumption that realism must be a premise for correct reasoning: anything related to the science of inquiry and pragmatism as a method of right thinking, as expressed in the Harvard Lectures.

Peirce argued that abduction is latent in perception. Pragmatism, considered the logic of abduction, followed from these propositions involved in the case for perception:

1. that nothing is in the intellect that is not first in the senses;
2. that perceptual judgments contain general elements;
3. And that abductive inferences shade into perceptual judgments without any sharp line of demarcation.

These premises were christened ‘cotary’ propositions. The ‘cotary propositions’ are presented as obvious truths which can be used as premises in arguing for pragmatism. Peirce, as noted above, makes a distinction between ‘perceptual judgment’ and ‘percept’; he seems to think that all we know about the percept is drawn from the perceptual judgment. The percept is the limiting case of inference contained in the perceptual judgment. The percept, as a limiting mind independent aspect of inference, holds reality. The Scholastic Realism is assumed in the claim that generality is present in perception, not something added up by the mind in the process of cognition. This constitutes the ‘mode of being’ of perception. If we were to use the Pragmatic Maxim, we would discover what is involved in perception: a limiting case can be a habit, something general or continuous, or something vague, or both.

In the *Lowell Lectures* Peirce rejects a version of Kantian Idealism that exhibits a problem in its account of perception. Peirce’s diagnosis, unsurprisingly, finds a nominalistic prejudice at the origin of the problem. The problem lay in the denial of immediate perception. This is due to the nominalist belief that: should inquiry and cognition find incognizable aspect of things, then inquiry must stop. According to Peirce, this viewpoint “… cuts off all the possibility of ever cognizing a relation”, for what makes reasoning sound is having a right method that can take into account the tendency to guess correctly and assure progress towards the truth.

In this way, the realism involved in the new theory of perception is a premise of pragmatism. Furthermore, in spite of its limits, perception has the added guarantee of eliciting progress in further inquiries.

Secondary qualities are real though degenerate. As long as experience reveals law-governed patterns and changes in the colours or other secondary qualities that things display, then experience of percepts can reveal patterns of qualities and properties that should be included in the idealisations forming our description of reality.

By ‘reality’ is to be understood that part or ingredient of the being of anything which does not depend upon that thing's actually being represented. ('Reflexions upon Reasoning', MS 686: 1, not dated [late])

## Reality and Pragmaticism

In ‘Issues of Pragmaticism’, or as it was initially titled ‘The Consequences of Pragmaticism’, Peirce presents some clarifications of how a combination of his Scholastic Realism and his theory of Common Sense philosophy are directly related to his Pragmaticism. As in several other earlier documents, Peirce changed the title of the essay in its last draft (MS 290). Peirce began by restating his pragmatic maxim in semiotic terms: identifying the meaning that pragmaticism seeks to enunciate as a meaning of symbols rather than of conceptions. He devotes most of this article to a consideration of two long-held doctrines. The two doctrines of critical common-sensism and scholastic realism are now taken to be consequences of pragmaticism. Peirce enumerates and discusses "six distinctive characters" of critical common-sensism; amongst them he stressed the important doctrine of vague ideas. He extended his realism to include the acceptance of ‘real vagues’ and ‘real possibilities’. Finally, he pointed out that "it is the reality of some possibilities that pragmaticism is most concerned to insist upon." The information given by this document is, then, very important in considering how Peirce saw his doctrines coming together. Because of this, Max Fisch has claimed that pragmaticism is pragmatism "purged of the nominalistic dross of its original exposition."

Indeed, if we wanted to continue inquiry after stripping all nominalist prejudices, we need to follow the path of an enriched scientific metaphysics open for new entities and categories to be manifested. However, for this process to occur there is a need to understand the connection between the interpretants as realities that convey meaning to an argument. Peirce left the door open to answer the question of what kinds of Thirdness there are and then explanation of whether they are to be manifested logically or materially according to an understanding of meaning:

The ‘meaning’ of an argument, then is its conclusion, which is the interpretation of its end (Turrisi 1997, 85).

Therefore, there is a principle of meaning in context:

Thus meaning has to do with the totality of the context of a proposition, such context being expressed in the form of premises (Turrisi 1997, 86).

The logic of relations is required to reveal the ultimate meaning and the ultimate interpretant; it helps us understand that the role of real continua and Thirdness is to provide mediation. There is, therefore, an isomorphism between real continua and meanings. This isomorphism is expressed as a purpose, a reason that explains why something is the way it is independently of our opinions about it:

The ideal of meaning is such as to involve some reference to a purpose (HL 86).

In order for meaning to involve some reference to a purpose, it has to be the intended interpretant of a symbol. Peirce affirms that ‘purpose’ is the mode of being of a law (HL 229). From this, it can be understood why the pragmatic maxim is connected with meaning and real laws, which are the intended interpretants. Why does Peirce consider this relationship so important? Arguing for pragmaticism, he realised that (1) all cognition involves arguments and (2) that the Pragmatic Maxim would capture all the concepts of propositions and all the information we need to make successful inferences, especially successful abductions. We use the Pragmatic maxim to clarify predictions and give sense to the ‘ought tos’ contained in them and in the normative sciences that guide inquiry.

## Scholastic Realism and the Architectonic System

In this final section, Peirce’s efforts to develop an Architectonic System of the classification of sciences will be reviewed. I shall bear in mind that his Scholastic Realism of Categories and their Modes of being were essential in its development. I will pay particular attention to the transformation of his Architectonic list from 1903, in which Peirce still owes many of the insights in the sciences to the works of classification of Louis Agassiz, and the new list of 1905 that depends more on Peirce’s realism and the manifestations of the Categories in the different sciences. The idea of an architectonic is probably drawn from Kant’s *Critique of Pure Reason*, in which Kant argues for planning the structure of the sciences on the basis of logic. In the *Critique,* Kant regrets the lack of proper care in the structuring of sciences, as it was found in his time:

…after we have long collected relevant cognitions haphazardly like building materials and worked through them technically with only a hint from an idea lying hidden within us. (CPR A834/B862)

 Peirce always had in mind, as a follower of Kant, an emphasis on the architectonic character of the sciences. Peirce started classifying specific fields of inquiry as early as 1867 with his “On a New List of Categories”, as has been mentioned in a previous chapter. In addition, Peirce’s theory of inquiry introduced in his “Fixation of Belief” also bears consequences for the classification of sciences: establishing a demarcation on which directions inquiry can take if it is self-controlled and monitored by a community. It is not until 1889, however, that Peirce developed a detailed classification of the sciences for the *Century Dictionary*. When Peirce classified the sciences he did it grounding the classification on what he called ‘pure mathematics’. Pure mathematics is a way to understand the logical grounding of sciences, mainly as a *Logica Utens* and not as a *Logica Docens*. This fact distances Peirce’s project from Kant’s. Pure mathematics must be understood, thus, as the initial norm of inquiry -even at a hypothetical level. When articulating how phenomenology depends on pure mathematics, Peirce said:

Perhaps you will ask me whether it is possible to conceive of a science which should not aim to declare that something is positively or categorically true. I reply that it is not only possible to conceive of such a science, but that such science exists and flourishes, and phenomenology, which does not depend upon any other *positive science*, nevertheless must, if it is to be properly grounded, be made to depend upon the Conditional or Hypothetical Science of *Pure Mathematics*, whose only aim is to discover not how things actually are, but how they might be supposed to be, if not in our universe, then in some other. (EP 2: 144)

Thus, when Peirce used the concept of logic in this context it is mainly understood in this mathematical fashion, in a mannerthat refers elements of *Logica Utens*. In 1902, he defined the logic that grounds classification of sciences as:

…ascertaining methods of sound reasoning, and of proving that they are sound, not by any instinctive guarantee, but because it can be shown by the kinds of reasoning already considered, especially the mathematical, of one class of reasonings that they follow methods which, persisted in, must eventually lead to the truth in regards to those problems to which they are applicable… (CP 2.200)

These methodological prolegomena are important because the architectonic expresses a responsibility towards self-monitored inquiry, always regulated. Peirce wrote:

[By] architectonic, [I understand] the necessity of planning [science] out from the beginning (CP 1.177)

One important distinction to remark in Peirce’s classification is that between pre-logical and post-logical characters of the sciences within the architectonic. In this section, I explore how his metaphysics fits in the picture. In order to understand how Scholastic realism is assumed and developed in the architectonic system we need to understand that the different kinds of sciences (coenoscopic and idioscopic) manifest real categories. The manifestation of the Categories is not uniform; there are degrees of degeneracy between them. For example, we can accept that both my listening to somebody on the telephone constitutes genuine Secondness; but my own echo when screaming out in a canyon is also Secondness, though degenerated. ‘Degeneracy’ means that there are degrees in the manifestation of the category. For the case of Secondness, degeneracy is measured according to the nature of the fact or event. In the case of Thirdness, degeneracy is identified according to the nature of the mediations.

Peirce’s final classification of the sciences arises from the systematic application of his Categories (Atkins 2006, 483). Categories come together in different ways in the final classifications. However, as Atkins (2006, 483; 2010, 104-9) argued, the Categories manifest themselves in different ways and modes in the process of understanding the relations between sciences: relations in which categories appear and degenerate in different ways. The hypothesis here is that the Categories may be found not only in the sciences but also in the classification of sciences. Two documents are relevant to the use of categories in the classification of sciences:

1. ‘A Detailed Classification of the Sciences’ from the *Minute Logic* of 1902 and
2. ‘An Outline Classification of the Sciences’ from 1903.

Peirce’s desire to classify the sciences had a Kantian origin; Peirce recognizes Kant’s aim in the *Critique of Pure Reason:* sciences must follow a structure that rests on logic. We must handle the concept of ‘logic’ with care, insofar as the meaning of it varies in Peirce’s works. The concept of logic involved here over the years in which he worked out the architectonic is this: Peirce considered logic as semeiotic, speculative grammar and methodeutic. From the point of view of Peirce’s Methodeutic (logic of science), the discovery of Categories rests upon logic granting the characteristics of security and uberty (EP 2: 472).

Let me briefly introduce the definition of sciences involved in the Architectonic to understand why Peirce considered any classification to be affected by the content of sciences. In MS 427 Peirce characterises science as "a living thing," not the collection of "systematized knowledge on the shelves." Science is what scientists do; it "consists in actually drawing the bow upon truth with intentness in the eye, with energy in the arm." Peirce argued that there are divisions of science that have to grow from continuous practice, no matter what the cultural specific contexts of the scientists that practice them. These are natural classes, defined not necessarily by purposes, but always by final causes. Like Aristotle, Peirce affirms that the classification of sciences is a matter of relations that turn out to be substantive and metaphysical. This is clearly a realist approach to classification that goes beyond purely practical criteria of classification. Peirce recognised that there is a ‘Mind of some sort’ and something teleological underlying the hierarchy in the Architectonic System. Peirce gave an account of that teleological aspect of the Architectonic System using a science that understands experience.

Peirce made use of his Phenomenology to discover the Categories underlying the final causes of classification: He went on to clarify the nature of phenomenology (later called Phaneroscopy), whose goal is to isolate the universal Categories of experience (MS 305, 306, 1903). Peirce found these to be: first, the quality of feeling; second, the element of struggle or reaction in experience or consciousness; and third, an intellectual element that seems much like representation or a sense of learning. Peirce considered this exploration a fruit of pragmatism and the *will to learn* that animates inquiry. He believed that this third element is necessary to explain a mode of influence on external facts that cannot be explained by mechanical action alone, and he thought that the idea of evolution requires this element. His Scholastic Realism shaped the classification as of the different ways in which the Categories are manifested. Consequently, this constituted an important step in his theory of inquiry: it tells us that the system exhibits the consistency and elegance we expect from a good scientific theory.

# Conclusions

I would like to remind the reader that the trend of argumentation presented in this Thesis stresses the particular and fundamental importance of Peirce’s Scholastic Realism for his Philosophy. I recapitulate the most important conclusions of each chapter to prove this claim: the problem of reality was always present in Peirce’s continued inquiry; his Scholastic Realism was the developing answer to the question of reality. My conclusions are that stressing Peirce’s Scholastic Realism is the most feasible and plausible way to account for his Philosophy.

Peirce’s philosophical work has not yet been considered in its full insightful nature for reasons that are not necessarily philosophical. Consequently, we might get good use of it if we ask the right questions about reality. His realism leads inexorably to a system of ‘Scientific Metaphysics’. For Peirce, ‘Scientific Metaphysics’ takes the form of a consistent philosophical stance from which we can ground both science and inquiry.

The questions raised in each of the chapters show that the historical problem of universals could be reconsidered and revisited using Peirce’s philosophy. A natural result of that action would be a particular angle on the history of philosophy: Philosophy conceived in the struggle between realism and nominalism. This viewpoint supports a renewed formulation of Peirce’s Scientific Realism purified of any nominalistic assumptions of previous interpreters.

## Scholastic Realism: a pragmatist solution to the problem of Universals

Peirce’s Scholastic Realism is a version of an Aristotelian solution to the problem of universals. I have stressed that Peirce defends an *in re* version of realism about universals. In doing so, he followed Scotus’ strategy. Peirce’s proposal, however, is an original and comprehensive account of the problem of universals that not only gives a tentative solution, but reconsiders the need to pursue scientific inquiry indefinitely. Peirce’s account overcomes nominalist scruples of multiplying entities without need: he never recognised universals as individuals. Consequently, Peirce’s consideration of the problem shows a pragmatic (pragmatistic) character: it serves the purposes of developing a system that carefully avoids any halt in the process of inquiry and preserves an attitude of on-going fallibilism sustained in a self-monitored interest of inquiry.

## The Argument for Scholastic Realism

Should Scholastic Realism prove the best way to interpret Peirce’s philosophy; we need to reconstruct an argument with these or similar premises:

1. Reality is whatever shows itself independent of our idiosyncratic ways of conceiving it.
2. We need a logical conception of reality that accounts for the relation between the object of knowledge and the sign represented in a true proposition. That relation is an ‘interpretant’ and a ‘habit’ tending to a convergence of opinion of all those who investigate well enough and long enough. I want to stress that ‘habit’ must be understood as a tendency that gravitates to an ideal limit, as opposed to a ‘single final opinion’.
3. That conception, however, falls short of explaining the *nature* of that interpretant: we need a theory of Categories that explains the consistency of the interpretants present in our best hypothesis.
4. The Category of Thirdness explains the nature of the interpretant.
5. The theory of Synechism explains how the nature of the interpretant has to be of a third and provides the theoretical ground to believe in the manifestation of reality.
6. Scholastic Realism provides us with all the necessary explanations of how being can be said in different modes and the elements of ontology necessary to establish complete distinctions operative in an *a posteriori* inquiry into reality.
7. Scholastic Realism is the only doctrine of reality that does not block the road of inquiry (as any nominalistic alternative does).
8. Therefore, Scholastic Realism is the only theory of reality consistent with the whole of Peirce’s pragmatist philosophy.

## The Aspects of Scholastic Realism in a comprehensive doctrine

Scholastic Realism has different aspects that formed its development. Peirce’s different versions of Scholastic Realism are assumed and reconsidered in the final version that captures different Modes of Being and includes the insights of previous versions. The different versions are consistent and contain assets in the development of the final account. Furthermore, this actually means that Peirce’s Scholastic Realism is open to improvement and further developments. The later Scholastic Realism that focused on Modes of Being included previous conceptions in the following way:

* The logical conception of reality (studied in Chapter Two) underlined the importance of conceiving reality and truth related in a process of the inquiry of a community.
* Categorial Realism offered a substantive account of reality thanks to the use of phenomenology and logic and gave Scholastic Realism the character of a positive theory that could explain the manifestation of categories in reality. Categorial Realism represents a leap from the previous treatment of the problem: it dissolves classical confusions about ontological terms like reality, existence, possibility, necessity, generality, relations, etc. by defining them in terms in the language of the Categories.
* The acceptance of Scholastic Realism is supported by Categories and their pervasive character for inquiry.
* The Synechistic interpretation of Scholastic Realism captures the nature of the reality of true continua. Synechism proposes that continuity is the grounding doctrine that renders mediation possible. Synechism supports the doctrine of Scholastic Realism by giving it the concepts needed to explain how the ultimate interpretants are real; it also gives explanations as to why reality must be conceived with priority on generals, the principles operative in nature that render science possible.
* Scholastic Realism, understood as Synechism, permits reconstruction of an evolutionary cosmology orientated to objective idealism. The more elaborated doctrines that Peirce offered become ‘warranted hopes’: they make perfect sense if the consequences of adopting Scholastic realism are pushed forward. Normative sciences developed this into the ideal of ‘concrete reasonableness’. This conclusion is crucial: Peirce’s Scholastic Realism gives a concrete principle that in its development gives unity to Peirce’s system as a developing whole.

## A Response to the problem of lost facts

There have been several allusions to complications and anxieties raised by the problem of ‘lost facts’. Indeed, this problem is taken to be an objection for Peirce’s ideas on truth, convergence and reality. From my interpretation of Peirce’s Scholastic realism I do not consider these objections as definitive against Peirce’s theories of meaning, inquiry, pragmatism, and conception of reality and convergence. This thesis has stated that the problem of ‘lost facts’ or ‘buried secrets’ can be solved if considered from the following point of view: Peirce’s Scholastic realism conceives universals as ‘true continua’. Peirce’s theories of meaning and inquiry are ruled by a realism of continua. The objects of these theories accept in their ontology more than individual entities: there are real universals (understood as true continua) and true generality. Peirce’s realism accepts that we experience these by our experience of their habits and by our capacity to represent them mathematically. Our beliefs, as they progress, acquire the character of signs of ‘continua’. This bears a consequence to the problem of ‘lost facts’: although we are unable to retrieve many facts and they are lost to us, at least we can have continuous habits that gravitate towards an objective limit. A limit is always ideal and approximations, not necessarily a singular proposition. The ‘direction’ of that gravitation is given by our best-warranted habits as inquirers: they reveal ‘true continua’ tending to a limit. We call that limit ‘the true’ reflected in a stable belief. There are no infallible beliefs indeed, but we can be content if we have indefeasible beliefs. For example: I cannot date with exactitude whether it was a Monday or a Saturday when the dinosaurs were wiped out from the face of the earth by the consequences of an asteroid shattering our planet: that is a fact that I cannot access with the (thus far) available evidence. Nevertheless, I can safely assert, due to the enormous amount of indirect evidence, that the clash of an astronomic object is the best hypothesis explaining generalised dinosaur extinction: the consistency of different ‘directions’ of continuous evidence points to that fact. This does not rule out that there are ‘lost facts’: it makes, however, one to reconsider whether is a definitive objection to convergence.

## The Rejection of Nominalism of universals

The rejection of nominalism becomes rejection of the assumption that science works with a nominalistic background. For Peirce, the reasons for rejecting nominalism are several: science seeks regularities and not individual cases, the prejudices of the nominalistic approach are ungrounded in observation, it is not consistent with the method of science, etc. However, above all, Nominalism falls short in its explanations in every case because without rational justification it rejects the reality of the utmost important principles that render science possible.

## The consequences for Peirce’s Scientific Realism

In this study, I have offered an interpretation of the principle of ‘Scholastic Realism’ as a solution for Peirce’s concerns about reality. I have also offered a reading of the doctrine of ‘Scholastic Realism’ as useful if we want to achieve a better account of reality. Contemporary metaphysics might profit from this line of thought. Some applications of Peirce’s theory are evident: the most important is it offers a consistent backdrop to a tenable scientific realism.

The Peircean Scholastic Realist can agree with many of the nominalists’ opinions, and believes, as does the nominalist, that facts that resist us are immediate as they are experienced. Laws are indeed products of our minds. However, the Scholastic Realist disagrees that acceptance of such denials implies that universals are not real. Laws, universals, vagues, possibilities, and interpretants are real because they are object of settled belief. This follows from a consistent definition of reality prescribed by the Scotistic Definition.

It could be argued that many scientists are nominalists, insofar as they seek concrete and particular applications for theories and, consequently, have to dismiss metaphysical speculation. However, for Peirce, this is a misunderstanding; metaphysics does not mean the elaboration of complicated theories that seem agreeable to reason and are alien to observation. Rather, Metaphysics provides a backdrop to general observation that is subjected to scrutiny and is fallible. Proper metaphysics values the elements of common sense that do not need to be questioned unless we have reasonable doubts to do so. As for the particular applications of sciences, it has to be said that no scientific discovery is of interest if it cannot be effectively extended to other similar cases through a process of generalisation. Generalisation, however, needs to follow norms of inquiry and correct thinking. The concreteness of those applications is the truth of the universals. De Waal quotes an important aspect of what Peirce understands as the meaning of an experiment:

Indeed, it is not in an experiment, but in *experimental phenomena*, that rational meaning is said to consist. When an experimentalist speaks of a *phenomenon*, such as ‘Hall’s phenomenon,’ ‘Zeemann’s phenomenon’ and its modification, ‘Michelson’s phenomenon,’ or the ‘chessboard phenomenon,’ he does not mean any particular event that did happen to somebody in the dead past, but what *surely will* happen to everybody in the living future who shall fulfil certain conditions. (EP2: 340)

For Peirce, indeed, scientists cannot be interested in dead particulars, they have to search for principles that can be applicable to cases of a similar nature (and they are, indeed, future concrete cases). The facts of the scientists are not particulars; they look at them expecting to draw descriptions that become future predictions. Furthermore, scientists tacitly agree that if reality was not accessible, then science could not convey a coherent conception. Peirce’s Scholastic Realism also emphasises the communitarian aspect of inquiry: inquiry is to prosper if and only if there is a community that embraces a laboratory philosophy. The community pushes its efforts with a fallibilistic spirit and is animated by the hope that reality will support the tendency to concrete reasonableness. The Peircean realist aims to get at the rational settlement of interpretants, particularly universals.

Peirce thought Scholastic Realism promising in multiple cases. The doctrine is particularly useful when the philosophical assumptions of a problem might help improve scientific inquiry. The doctrine seems promising, for example, in the field of theories about abstraction and the foundations of mathematics, in a better classification of the chemical sciences, in the unification of the two apparently contrary accounts of relativity and quantum mechanics, etc. All these subjects are worthy of exploration through application of the theory, as Peirce himself surely would have wished.

## The consequences for the Theory of Inquiry

As has been repeatedly noted above, Peirce aimed for self-controlled inquiry of a community of researchers guided by a self-less love for the truth. Scholastic Realism bears consequences for Peirce’s desire for the growth of concrete reasonableness involved in his objective idealism. The doctrine of Scholastic Realism guides a reading of Peirce’s works; in this reading, the strands of a fascinating system of pragmatist philosophy emerge in a harmonious and consistent way.

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1. I will say many things about how Peirce conceived this concept of ‘Scientific Metaphysics’ in the upcoming chapters. For now, suffices to say that ‘Scientific Metaphysics’ is metaphysics carried out with the methods of scientific inquiry. [↑](#footnote-ref-1)
2. *Ficciones* by Jorge Luis Borges, edited by John Sturrock (original publication 1942; English translation, Grove Press, 1962; rpt. by Alfred A. Knopf/Everyman, 1993), 83-91. [↑](#footnote-ref-2)
3. From the latin “haecceitas”, and this from “haec”, the demonstrative ‘this’. [↑](#footnote-ref-3)
4. ST Ia Iae [↑](#footnote-ref-4)
5. This does not mean that this conception of ‘haecceity’ cannot be paired with Scotus’ conception. However, I ilustrate that in order to pair the two notions it would be necessary a careful and different study to this. [↑](#footnote-ref-5)
6. If any, the resemblance with medieval philosophy is to be found in Aquinas, for whom the relation “potency-act” Works as the foundation of a principle of individuation (ST *Ia IIae,* q. 1) [↑](#footnote-ref-6)
7. It has been said that Peirce’s credit to Scotus should be reconsidered as some texts thought to be from Scotus in the past (in L. Wadding classic edition of his *Opera Omnia*) like *Grammatica Speculativa,* which is actually written by Thomas of Erfurt (c.1300). It is true that pieces like *Grammatica Speculativa* were important for Peirce but in the grounds of his Semiotics where some *Modus Significandi* helped Peirce to develop important distinctions about signs. Peirce quotes verbatim the first six chapters of De modis significandis in an 1869 lecture comparing the views of (what he took to be) Duns Scotus and William of Ockham on names and signification. The lecture, however, is introductory in character and left uncertain whether Peirce fully appreciated what was at stake in *Modistic* grammar, rather than viewing it, say, as some linguistic addendum to Scotus' metaphysics that was not essential for his views about Scotus. The use of the term “Mode” cannot be due to the *Grammatica Speculativa* either, because he uses is in talking about Aristotle as well as many other medieval commentators of Aristotle and thus seems to point out to Aristotle’s jargon primarily. With regards to his Scholastic Realism, though, Peirce fed in Scotus’ genuine works, especially from the important ones *Ordinatio, Reportata Parisiensis* and *Questiones in Aristotelis Liber Metaphysicorum.*  [↑](#footnote-ref-7)
8. ‘Synechism’ from the Greek preposition ‘syn’ (across) is the doctrine that explains how the concept of continuity applies to epistemological and metaphysical problems. [↑](#footnote-ref-8)
9. The technique of the ‘Questiones Disputatae’ is part of the Medieval Scholastic Realism tradition, at least methodologically speaking, so this is going to be one of the cases in which we can called Peirce’s strategy ‘Scholastic Realism’. Scholastic philosophers used to exercise reason by a process of developing questions, a process that happened publically in a controlled debate. [↑](#footnote-ref-9)
10. We ought not to confuse two senses of intuitions here: there might be judgments that are intuitive, but they are not intuitions in the Cartesian sense, intuitions in the common sense seem rather close to habits and expectations, or otherwise the product of reflective equilibrium in our beliefs. [↑](#footnote-ref-10)
11. Descartes, Rene. *Rules for the direction of our native intelligence.* In: *The Philosophical Writings of Descartes* (1988, 1:14) [↑](#footnote-ref-11)
12. The word ‘Realitas’ in Latin is a diminutive, standing for something like ‘a little chunk of what causes something else’. [↑](#footnote-ref-12)
13. I will devout an entire chapter of this thesis to Synechism and the tendency of habit-taking understood as a Third. [↑](#footnote-ref-13)
14. This can be found in the ‘Introduction to the Paperback Edition’ of the reprinted edition of 1992 of his 1981 book. [↑](#footnote-ref-14)
15. Although there is evidence that Peirce thought of Spinoza as a philosopher very close to himself, even in spite of Spinoza’s commitment to the “More Geometrico,” Peirce believed that Spinoza reasoned as a pragmatist and did not really follow Euclid’s postulated method of deduction. Shannon Dea (2008) explores Peirce’s relationship with Spinoza as an important one in the conception of the categories, especially the category of Firstness. [↑](#footnote-ref-15)
16. In Chapter 6 I will explain how the term “Scientific Metaphysics” must be understood, suffice for now to say that we are comparing/contrasting? Peirce’s metaphysics with ontological metaphysics. [↑](#footnote-ref-16)
17. This claims make sense when conceived from the viewpoint of his third *Harvard Lecture* (HL 167-88), where a ‘symbol’ is defined as a genuine form of a Third, a real representation. [↑](#footnote-ref-17)