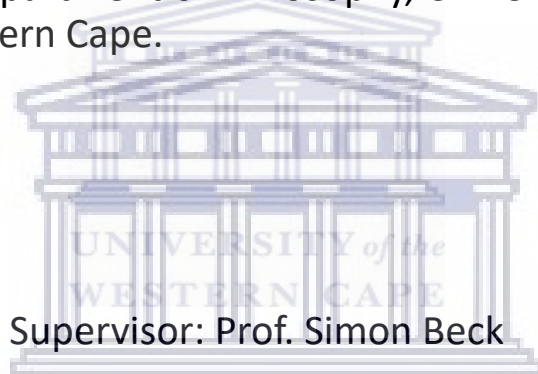


Exploring the Philosophical Mind: An empirical investigation of the process of philosophizing using the protocol analysis methodology

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A thesis submitted in partial fulfilment of the requirements for the degree of Master of Arts, in the Department of Philosophy, University of the Western Cape.



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Cognitive science

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ABSTRACT

Many empirically supported versions of stage and componential models of the cognitive processing underlying the completion of various tasks spanning a wide range of domains have been developed by cognitive scientists of various kinds. These include models of scientific (e.g. Dunbar 1999), mathematical (e.g. Schoenfeld 1985), artistic (e.g. Getzels and Csikszentmihalyi 1976), engineering (e.g. Purzer et al 2018), legal (e.g. Ronkainen 2011), medical (e.g. Vimla et al 2012) and even culinary cognition (e.g. Stierand and Dörfler 2015) (and this list is nowhere near exhaustive). Yet, despite the existence of fields such as experimental and metaphilosophy which take philosophy as their object, often by using methods from the cognitive sciences, a stage or componential model of philosophizing is conspicuously missing from even an exhaustive list of the kind just produced. This thesis helps remedy this oversight by answering two questions: 1) What are the cognitive/psychological stages/components of the process of (analytic) philosophizing? And 2) What are the mechanisms by which (analytic) philosophical idea-generation takes place?

The way that I do this is by testing the two most detailed existing attempts to answer these questions, the model I set forth in Seakgwa (2017) and the model developed by Nenad Miscevic (2012, 2013, 2018). Thus far neither of these has any direct empirical support.

In order to provide the empirical testing that these models have lacked up to this point, I conduct an observational study of two trained philosophers, using the protocol analysis methodology, as they read and wrote a response to a philosophical article which I assigned them. I find that both models are mixed in their predictive success. The best attempts to answer the questions above are thus both in need of revision in multiple respects, such as needing to be modified to include a heretofore unrecognized kind of intuitive processing which I call *initial intuition*.


This investigation is intended primarily as a contribution to a field I call the meta-inquiry of philosophy, which as I define it is the scientific investigation of philosophy and (trained) philosophers. This field is part of a more general field I call meta-inquiry which is concerned with scientific investigation of the knowledge production professions more generally. I thus end by sketching the contours of these areas of study and making clear why they are needed.

DECLARATION

I declare that *Exploring the Philosophical Mind: An empirical investigation of the process of philosophizing using the protocol analysis methodology*, is my own work, that it has not been submitted for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged by complete references.

Kyle Vuyani Tiiso Seakgwa

14 November 2019

Signed..........



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Chapter 1: Introduction

Since its inception, cognitive science, the interdisciplinary study of the mind, has made great strides in mapping cognition in various settings. One way this is done, is by building psychological models of the stages (or components) minds pass through in the process of completing a task. Many empirically supported versions of stage and componential models of the cognitive processing underlying the completion of various tasks spanning a wide range of domains have been developed by cognitive scientists of various kinds. These include models of scientific (e.g. Dunbar 1999), mathematical (e.g. Schoenfeld 1985), artistic (e.g. Getzels and Csikszentmihalyi, 1976), engineering (e.g. Purzer, Moore and Dringenberg, 2018), legal (e.g. Ronkainen, 2011), medical (e.g. Patel, Arocha and Zhang, 2012) and even culinary cognition (e.g. Stierand, Dörfler and MacBryde, 2014) (and this list is nowhere near exhaustive).

Yet, despite the existence of fields such as meta and experimental philosophy which take philosophy as their object, often using methods from the cognitive sciences, a stage or componential model of philosophizing is conspicuously missing from even an exhaustive list of the kind just produced. This thesis aims to help remedy this oversight by answering two questions:

- 1) What are the cognitive/psychological stages/components of the process of (analytic) philosophizing?
- 2) What are the mechanisms by which (analytic) philosophical idea-generation takes place?

The way that I will proceed to do this is by testing the two most detailed existing attempts to answer these questions, the model I set out in Seakgwa (2017)¹ and the model developed by Nenad Miscevic (2012, 2018; 2013). Thus far neither of these has been provided with any direct empirical support; it is therefore unclear if either of them correctly answers these questions and hence if either would make an acceptable addition to the aforementioned list.

In order to provide the empirical testing that these models have lacked up to this point, I have conducted an observational study of two trained philosophers as they read and wrote a response to a philosophical article which I assigned them. In order to facilitate the observation of the cognitive processes/structures which enable the completion of this task, or at least to facilitate the collection of data from which these processes/structures can be inferred, each participant was instructed to verbalize all their thoughts while they were reading, thinking about or writing their essay. These verbalizations were recorded (using Open Broadcasting Studio (OBS) software and participants' own webcam enabled computers) and then transcribed (this is known as the protocol analysis or "think-aloud methodology", as described by Ericsson and Simon, 1984; Ericsson, 2006). These transcripts, along with those of the interviews conducted before the process (and in one case after), along with the notes and essays produced by the participants, served as the data against which predictions derived from Seakgwa and Miscevic's were tested in order to see how accurate the answers provided to the questions above are.

Given the small sample size employed and the other limitations of this investigations, the results presented here should be regarded as preliminary; at least until procedures like the checking of the intercoder reliability can be run on the coding schemes used. This study is nonetheless informative,

¹ Throughout this thesis I will refer to my earlier model as 'Seakgwa 2017'. I acknowledge that this third-person reference may sometimes sound odd, but it makes comparisons and discussion simpler, and it should be read as the name of the model.

not only because of the results it produced, but also because of the methodological innovations made in order to obtain these results. This innovation includes not just the first use of OBS software and Google Drive to allow unsupervised task completion to be remotely carried out, but also the first application of what I call the “descriptive model testing approach” to qualitative/mixed methods research as the philosophical undergirding of this project, since a comparable explication of the philosophical rationale of the use of qualitative and/or mixed methods was sorely lacking in the literature.

This project can thus be seen as making contributions to the neglected philosophy of qualitative and mixed methods research, metaphilosophy (which relies on models of the philosophical process even if tacitly), and the psychology of argumentation and reasoning, as well as that of creativity (since the phenomenon it studies involves the creative generation and evaluation of arguments, and thus the models tested and results produced make use of work in these areas). Despite this, it is intended primarily as a contribution to a field I call the meta-inquiry of philosophy, which is the scientific investigation of philosophy and (trained) philosophers. This field is part of a more general field I call meta-inquiry which is concerned with scientific investigation of the knowledge production professions more generally. I thus end by sketching the contours of these areas of study and making clear why they are needed.

Below a summary of what occurs in the chapters to come:

In chapter 2 I review the existing literature relevant to the investigation undertaken here, including work in experimental philosophy (e.g. Knobe 2016 and Fischer et al 2019), metaphilosophy (e.g. Nado 2016), the psychology of argumentation and reasoning (e.g. Voss et al 1993 and Thompson 2011), and the psychology of creativity (e.g. Petevari et al 2016 and Bowers et al 1990). I also discuss the two models to be tested. This chapter, following Nado 2016, emphasizes the deficiency of what I call the standard model of the philosophical process, which focuses solely on the role of thought experimentation. Although Miscevic shares this focus (to a point) his model is much more detailed than the version of the standard model which drives much of the current metaphilosophical debate. However, by including phenomena often discussed in the creative cognition literature but not usually included by those attempting to model the philosophical process, such as creative intuition Seakgwa (2017) aims to move beyond other existing models by mapping both the philosophical context of discovery and of justification.

In chapter 3, I detail the methods used in the study. Since a part of the contribution I intend to make is methodological and, as Geisler puts it, “methodology is the argument too often left covert” (1994, p. xv), in this chapter I am as explicit as possible about methods I used. This includes a section detailing what protocol analysis is and its theoretical assumptions, as well as replies to some of the worries one might have in employing it to study the phenomena of interest here.

In chapter 4, I start by explaining the logic of the descriptive model testing approach taken here. I then proceed to derive predictions from Seakgwa and Miscevic’s models, present the operationalizations used to test them (as codified in what is known as a “coding scheme”) and then present the outcomes of these tests. The analyses focused on here concern the models’ predictions about intuition and thought experimentation in the process of philosophizing as well as the stages of this process and the mechanisms of idea production posited by each model.

In chapter 5, I summarize the findings of the analysis, concluding that both models need revision. I also point out a number of limitations with the study conducted here, as well as some factors which mitigate the worries these limitations introduce.

Finally, in chapter 6, I situate this investigation as a contribution to interdisciplinary of meta-inquiry and the branch of it called meta-inquiry of philosophy. Since these fields do not formally exist (at least in the unified state I envision), I spend the chapter defining them, showing how they can bring together disciplines such as the psychology of science, science and technology studies and expertise research despite some philosophical obstacles, how they relate to other existing fields such as experimental philosophy and what they have to offer that these fields currently do not.



Chapter 2: What is Known about the Philosophical and Related Cognition

2.1. Brief Overview of Experimental and Metaphilosophical Discussion Regarding Intuition

Much of 21st century metaphilosophy has been focused on the role played by intuition (though what “intuition” is remains a contentious point) in philosophical methodology (where what exactly constitutes “philosophical methodology” is also contentious) (Ichikawa, 2014)². Despite the lack of explicit consensus on what philosophical methodology amounts to, Nado (2016) provides compelling evidence that it is taken for granted by many, if not all, participants in the metaphilosophical debate that philosophical methodology (or at least the metaphilosophically interesting parts of it) can be reduced to what has been called the “method of cases” (p.1). She characterizes this method as the process by which: “a theory’s implications about some phenomenon p are tested against the ‘intuition-data’ which results from consideration of the presence or absence of p over a number of ‘cases’” (p 6). For example, Gettier’s procedure used in his famous refutation of the then-standard analysis of knowledge in his 1963 paper would count as a token of the type of method Nado characterizes here. This refutation proceeds by providing us with a characterization of the theory it will take issue with (the necessary and sufficient criteria for the ascription of knowledge as justified, true, belief), and then goes on to describe cases (also known as thought experiments) where this theory would require that we ascribe knowledge to some imaginary agent (and thus affirm that knowledge is present), but our intuition would urge us not to (and thus affirm the absence of knowledge).

Much of this discussion regarding philosophical methodology and intuition’s role in it was catalyzed by experimental philosophers, who are often seen and equally see themselves (rightly or wrongly) as providing evidence that the philosopher's use of intuition in her method of seeking truth is flawed because intuitions are not reliable sources of evidence on which to base philosophical judgements (*ibid.*)³. Among the evidence that experimentalists cite as showing intuition to be unreliable are studies showing that the intuitions of lay people, when presented with various thought experiments, differ from those of philosophers (Weinberg, Nichols and Stich, 2001; Machery et al., 2004). There is also evidence which suggests that lay intuitions, when presented with various thought experiments, are vulnerable to order-effects and framing effects (which are kinds of cognitive biases) (Wiegmann, Okan and Nagel, 2012). In addition to this evidence, there has also been research which shows that differences in personality traits strongly predict differences in philosophical position across a number of philosophical domains (Feltz and Cokely, 2009, 2016; Bartels and Pizarro, 2011). According to this anti-intuitionistic camp who have come to be called restrictionists (e.g. Feltz and Cokely, 2009, 2016; Nado, 2016) these results show that intuition is affected by irrelevant factors and are therefore not a reliable guide to truth, hence the reliance on intuitions in philosophical methodology should be heavily restricted if not abandoned (Ichikawa, 2014, 2012; Feltz and Cokely, 2016).

Opposing these restrictionists are the anti restrictionists such as George Bealer (1992, 1998) , Ernest Sosa (2007, 2011) and David Chalmers (2014) among many others⁴. These anti-restrictionists argue that the restrictionists fail to establish that intuition, as it is utilized in philosophical practice, is

²For more overviews of the contemporary debate regarding intuition and its place in philosophical practice see Szabo-Gendler, 2010; Ichikawa, 2012; Collins and Fischer, 2015; Daly, 2015.

³This critique of philosophical methodology is, however a small part of the experimental enterprise, which seeks to shed light on the philosophical cognition of academic philosophers, but also non-philosophers thinking regarding morality, phenomenal experience etc. in everyday life, for a discussion of experimental philosophy which goes beyond the narrow focus on academic philosophical practice which I have adopted here see Knobe, 2016.

⁴ For a more thorough overview of the anti-restrictionist response see Ichikiwa (2014).

unreliable. A wide variety of arguments have been employed by the anti-restrictionists in defense of intuition and its reliability⁵.

The third group in this debate can be understood as rejecting the debate between the pro and anti-restrictionist camps. This third camp of so-called “Intuition deniers”, such as Herman Cappelen (2012, 2014b, 2014a), Max Deutsch (2009, 2010, 2015) and Timothy Williamson (2008), reject the central assumption shared by both the pro and anti-restrictionist, which is the assumption that intuitions play a central evidential role in much of traditional philosophical methodology.

For our purposes, an important thing to note about this mainstream metaphilosophical discussion, is its focus on the use of intuition as evidence or a source of evidence in philosophical debate—for convenience, I will call these “justificatory intuitions” (which are usually thought to occur in the context of the method of cases).

Another feature of this literature that is important to note is the lacuna of stage or componential models of the process of philosophizing, of the kind often found in psychology⁶. These provide a broad overview of what the elements of a process are and how they are related. It seems to me that the lack of this “big” picture kind of a view of the phenomenon of interest has caused the metaphilosophical literature to overly fixate on only a few particularly salient components of the philosophical process (i.e. thought experiments and intuitions as they occur when employing the method of cases), and almost completely neglect everything beside these few privileged pieces of philosophical practice. Recognition of this bias in the experimental and metaphilosophical discussion has some recent work calling for (and some heeding these calls for) research which goes beyond the method of cases model of philosophy, which I will call the “standard model” so prevalent in the current debate (Nado, 2016; Fischer et al., 2019). This broadening of focus beyond the phenomena included in the standard model is one of the components of what Nado proposes as “experimental philosophy 2.0” (2016, p. 1)⁷. There have also been related calls for the use of a more diverse methodological palette than the vignette-based surveys which have been the experimental philosopher’s main tool (Andow, 2016). I too hope to contribute to these corrective aims by providing an empirical evaluation of the few stage models of the philosophical process available based on comprehensive descriptive data of the entire philosophical process using the protocol analysis methodology, which has yet to be used by contributors to the contemporary experimental and metaphilosophical literature⁸. Although these aims do align with much of those that Nado claims for experimental philosophy 2.0, as I will spell out in a later chapter, I view the present research as a contribution to a separate but overlapping project.

2.2 Existing Models of the Philosophical Process

Much like those cited above who are urging that we expand our conception of the philosophical process beyond the method of cases model, in Seakgwa (2017) I argued that, while the debate

⁵For more on the anti-restrictionist defense of intuition see Sosa (2007, 2011) and Ichikawa (2012, 2014). For the latest salvos from each side of this ongoing battle see Machery (2017) and Strevens (2019).

⁶Runco (2017), provides an informative overview of the various stage and componential models of creativity psychologists have developed, and discusses the differences between these two kinds of models.

⁷The other modifications she suggests as part of Experimental philosophy 2.0, are: 1) that its practitioners target more specific classes of mental state than broad and probably heterogeneous category of “intuition”; 2) that they do not critique these mental states as unreliable or as leading to unjustified beliefs, without specifying that these deficiencies are only relative to the hyper-demanding standards of academic analytic philosophy.

⁸But see Hartmann and colleagues (Hartmann *et al.*, 2015; Hartmann and McLaughlin, 2018) for recent applications of this methodology to the study of moral psychology.

regarding justificatory intuitions is important, it is not the only component of the process of philosophizing. Nor is it the only aspect worthy of empirical and philosophical attention. In the current project I continue and expand the efforts begun in my honours thesis, to bring some much-needed attention to what I have called the “context of philosophical discovery” -- the process of conceiving a philosophical idea, which remains under-investigated, save for a few researchers such as Paul Thagard (2014) and Hajek (2014, 2016, 2018), with Nado (2016) making a brief gesture toward it.

Drawing heavily on the above mentioned theorists, in Seakgwa 2017 I started the development of a qualitative model of this phase of the philosophical process based on sparse interview data (Garvey, 2012) as well as analysis of published philosophical articles (chiefly Thagard 2014 and Mehta, 2016) in addition to theoretical and empirical work in philosophy of science (e.g. Schikore and Steinle, 2006), the cognitive science of creativity (e.g. Boden, 2004; Pétervári, Osman and Bhattacharya, 2016), reasoning (Taber and Lodge, 2006; Evans and Ball, 2010; Mercier and Sperber, 2011; Thompson, Turner and Pennycook, 2011) and problem solving (Newell and Simon, 1972); Novick and Bassok, 2005; Bassok and Novick, 2012).

As can be gleaned from the above, I relied on the discovery/justification distinction imported from philosophy of science, which Schikore characterizes as; “most commonly... interpreted as a distinction between the process of conceiving a theory and the validation of that theory, that is, the determination of the theory's epistemic support” (Schikore, 2014, n.pag). Though this conceptual schema is usually used to understand the natural and social sciences, I have built on Herman Cappelen's suggestive but underdeveloped reference to the distinction as useful for thinking about philosophical practice as well (see 2012, p. 230).

Within this theoretical “context of philosophical discovery” I have followed Hajek in conceptualizing the philosopher's task as that of solving what he calls “The ‘hard problem’ of *doing philosophy*” (2014, p. 292) (Hajek's emphasis) which he characterizes as:

Actually, a set of hard problems: trying to come up with an original philosophical position, or analysis, or argument, or puzzle, or paradox; or trying to come up with a counterexample to someone else's philosophical position or analysis, or trouble for an argument of theirs, or solving a puzzle, or resolving a paradox. (*ibid*)

On Hajek's picture⁹, the philosopher's goal is to generate what he calls “philosophical products” which he defines broadly to include: “philosophical positions, arguments, analyses, counterexamples, puzzles, paradoxes, and so on”. Hajek defines a creative philosophical product as one which is novel and valuable (2014, p. 288), in this he follows the consensus in the creative cognition and philosophical literature (e.g. Smith and Ward, 2012; Thagard, 2012). For Hajek philosophical products are valuable: “to the extent that they advance philosophical understanding” (2014, p. 289).

I have built on Hajek's framework by conceptualizing the philosopher's goal as producing creative philosophical products, where philosophical products are philosophical ideas and philosophical texts. In Seakgwa (2017) I use the term “philosophical idea” (p. 20) to refer to the purely mental versions of the various counter examples, arguments, paradoxes, etc and the term “philosophical text” (*ibid.*) to refer to an artefact (e.g. a philosophical article or book) composed of orthographically represented philosophical counter examples, arguments, paradoxes etc. Philosophical ideas can in turn be creative in two ways, based on an influential distinction first made by Boden (2004) between “*H*-creativity”

⁹ Hajek (2018) extends his conception by explicitly naming the various stages of the philosophical project, since these stages are essentially less detailed versions of the components of the processes identified by Seakgwa (2017), I do not dwell on them here.

(p. 121), short for *Historical* creativity (nobody else has produced the idea before), and “*P*-creativity” (*ibid.*), short for *Psychological* creativity (the idea is new to a particular individual, although it may have been produced previously by someone else, unbeknownst to the individual).

Thus, the process of philosophizing can be thought of as a progression through a problem space (see Bassok and Novick, 2012) with the generation of an H-creative philosophical idea or ideas as a sub-goal and the production of a publishable philosophical text as its terminus (the goal state). While the philosopher’s initial position in problem space would vary according to the specific context —I focus on the reading of a particular philosophical text with the goal of replying to it as the philosopher’s initial state.

Despite the long history of the discovery/justification (DJ) distinction so integral to the conceptual framework explicated above (see Schickore, 2014), it has also had many historical and contemporary critics. The critique which I find most potentially devastating for my model of philosophical practice is that made by Steinle who point out, on the basis of historical data, that the distinction is empirically inadequate since it seems inapplicable to episodes in the history of science such as Charles Dufay’s discovery of positive and negative electricity (Steinle, 2006). Among the chief reasons for my focus on this sort of attack on the DJ distinction is that, unlike the numerous other conceptual objections levelled at the distinction and its proponents, it brings into focus that upon a close examination of the research process, one may find that the DJ distinction may not be helpful for allowing us to understand that process as it actually happens.

In Seakgwa (2017) I also attempted to synthesize the domain general model of creative intuition (also known insight problem-solving) with the conceptual framework provided by the DJ distinction. In the creative cognition literature these processes (sometimes collectively called the insight sequence) are usually characterized as beginning with a period of initial solution attempts. After these attempts fail, the solver then reaches a point known as an impasse, where solution attempts are abandoned or suspended, and the solver shifts attention away from the problem. This impasse phase is then followed by a period of incubation wherein it is thought that unconscious operations are executed on the mental representations constructed thus far in the solution process. These unconscious operations are then thought to result in the “restructuring” (Scheerer, 1963 as cited in Fleck and Weisberg, 2004, p. 990) of the problem representation (which includes a representation of the initial state, available operators and goal state) possessed by the solver. As a result of this restructuring the solver “comes to perceive the problem in a way that was not obvious upon initial consideration” (*ibid.*). And finally, this restructuring is followed by creative intuition, where a novel and valuable output of the unconscious operations executed during incubation suddenly enter conscious awareness. Although this general framework accurately describes the creative intuition-based solution process in number of domains, it has not been directly empirically tested in the context of the philosophical process, which at least *prima facie* is much more cognitively complex than the insight problems used to build the framework. An example of such a problem is “The Candle Problem” (first used by Duncker and Lees, 1945) in which participants are given a book of matches and a box of tacks, and are asked to use these items to attach a candle to a door so that it can burn properly. Here the solution, which is usually found after a number of failures (which involve strategies like trying to use the tacks to attach the candle to the door), is to use the box from the tacks as a candleholder or shelf. As can be seen here, although the solution to this problem is initially non-obvious, its solution is easier to generate than say, a satisfactory solution to the Gettier problem. This is evidenced by the fact that no consensus solution to the Gettier problem has yet been found, but many participants in studies of creative intuition have solved the candle problem. Thus, this stage model might not be optimal for allowing us to understand the nature of creative intuition in as it occurs in the process of philosophizing.

Despite the limitations of the model of philosophizing developed in Seakgwa 2017, I believe that the conceptual choices made in the construction of that model remain defensible, especially given the dialectical context in which they were embedded. Given the lack of observational data of the philosophical process (of a sort similar to that which we have, for example, of biomedical research thanks to Dunbar, 1997), in thinking about the philosophical process, although some information about the process could be gleaned from publicly available interviews and brief first-hand accounts given in published philosophical articles, it was necessary to lean (more heavily than I would have liked) on conceptual schemata drawn from the investigation of fields of intellectual inquiry and/or the solution processes and/or attempts of agents confronted with relatively mundane tasks. Thus, although the conceptual apparatus of the DJ distinction and stage model of creative intuition-based problem solving may not be the sharpest tools (for the reasons stated in the preceding paragraph), they were the sharpest tools available. These conceptual tools were also sufficient for my dialectical objectives at the time which were to bring attention to the before then largely unacknowledged potential importance of “creative” cognitive processes in philosophical practice (even if one’s concern is the reliability of the evidence or sources of evidence) for claims made in published philosophical texts. Thus, I couched my model of the philosophical process as based on largely untested yet plausible hypotheses that, if correct, point to unjustified under-investigation of creative intuition and other philosophical idea generation processes in the metaphilosophical debate briefly surveyed in the preceding section with its exclusive focus on justificatory intuitions.

The overarching theoretical lineage from which I approached the model construction in Seakgwa (2017) and which is also the basis of the current project is the information processing approach to the mind which is currently ascendant (and indeed forms the basis of) much of cognitive psychology and the cognitive sciences more generally. From this point of view the mind-brain is taken to be an information processing system much like the digital computer, where, roughly, what we in folk-psychological terms refer to as the “mind” is analogous to computer software and the brain is analogous to the computer hardware (see, Searle, 1990 for a critique of this analogy, and Marr, 1982 for a more nuanced unpacking of the analogy).

More specifically, I, like many theorists in the cognitive and behavioural sciences (e.g. Gigerenzer, 2000; Gigerenzer and Brighton, 2009; Kahneman, 2011), will be approaching the study of the mind through the lens of dual process cognitive architecture. “Dual process” theories of cognition, though not identical, are generally taken to be broadly similar to each other in that they posit types of processes (sometimes said to result from two distinct “systems”) (Evans and Stanovich, 2013; Thompson, Evans and Campbell, 2013). According to most dual process theorists, type 1 processes are characterized by unconsciousness, automaticity, immediacy, effortlessness which are rapidly and involuntarily triggered by cues in one’s environment and run to completion without access to working memory; the short-term memory store in which all the items currently attended to are held and able to be manipulated to accomplish tasks. While type 2 processes are conscious, deliberate, slowly executed, and effortful and reliant on working memory for execution (Evans, 2007, 2012; Evans and Stanovich, 2013; Thompson, 2013). Within this framework “intuition” has been characterized in terms of judgements, beliefs or inclinations to believe resulting from type 1 processes and thus are taken to be the result of rapid processing (Evans, 2012).

In Seakgwa (2017) I also placed emphasis on the role that automatically generated metacognitive phenomena such as Feelings of Rightness (FOR) play in the context of dual process cognitive architecture (first studied by Valerie Thompson and colleagues e.g. Thompson, 2009; Thompson, Turner and Pennycook, 2011). FOR are basically automatically generated feelings of confidence which accompany intuitively generated judgements and hypotheses, *inter alia*. FOR, and other

phenomena like them¹⁰, are increasingly gaining attention in the dual process community as providing a mechanism which acts as a switch trigger type 2 process to inspect the products of type 1 processing (De Neys, 2014). Thus, the dual process theory I employ posits FOR as the monitoring mechanism which, while itself a product of type 1 processing, determines whether type 2 processing will be deployed.

To further both the goals first pursued in Seakgwa 2017, and take the first steps toward achieving the pedagogical and other goals highlighted earlier as the *raison d'être* for this project, with the extra time/resources afforded me, as well as the conceptual foundation laid in Seakgwa 2017 (despite its shortcomings), I am well placed to provide a more accurate empirically grounded description of the phenomenon of philosophizing. In order to do this, in addition to gathering richer empirical data upon which to draw (about which more will be said in the methodology section), I have drawn on (both theoretically and methodologically) the most thoroughly empirically grounded model of philosophizing I know of - that which is presented in Cheryl Geisler's work (e.g. 1991 and 1994). Geisler's model focuses on the literacy practices of philosophers during the process of philosophizing, and what these practices can tell us about the socio-cognitive underpinnings of philosophical practice with an eye to what the literacy practices of philosophers can tell us about academic literacy more generally. In Geisler (1991) she identifies 5 stages of the process of producing a philosophical text; these are: reading, reflecting, organizing, drafting, and revising. Since Geisler is interested in what investigating the reading and writing behaviour of philosophers can offer those interested in nature of literacy practice among experts in academia more generally, she used criteria such as "(a) the materials consulted, (b) the materials produced, and (c) the sequencing principle guiding attention" (p.176) to define the above mentioned stages. In her analysis of the expert protocols produced, she found that the philosophers encode and store mental representations of what she calls "approaches" (p. 179). This is a way of mentally representing philosophical argumentation where one uses the name of an author of an argument or set of arguments as a kind of label for a representation that is not strictly reducible to the arguments as forwarded by the author. This enables such operations as imagining what the response of the author would be to a particular objection, even if the objection was not explicitly considered by the author. By analysing the philosophical texts produced by her participants she also found that the approaches in the texts were organized such that faulty approaches were presented first and eliminated by critique, with each successive faulty approach being eliminated until only the main approach (which the writer endorsed) was left standing (p.180). Geisler took this to be the structure of the philosopher's mental representation of the goal state as well¹¹. Ultimately, she uses these and other findings to argue that academic cognition is best viewed as employing a dual problem space, where one space concerns the rhetorical conventions of the discipline of the academic and the other deals with the actual content of the discipline.

Although Geisler does draw on the cognitive science literature about mental representation to give an account of cognitive mechanisms underlying her socio-cognitive model of philosophical and academic literacy, because she is primarily concerned with issues of literacy. Thus, Geisler's model does not attempt to address the metaphilosophically interesting aspects of philosophical methodology I am proposing to investigate (viz. the role of intuition, thought experiments and argumentation in philosophizing).

¹⁰ Such as logical intuition, investigated by Wim De Neys and others (see De Neys, 2012, 2014).

¹¹ These findings are all embedded in her broader thesis about the social forces which have given academic cognition this shape, which I will not be dealing with in this project. For a short overview of her argument see Geisler (1991).

Steven Bartlett's 1978 "The Use of Protocol Analysis in Philosophy" provides the nearest example of what I aim to produce in the proposed study, both in the kind of raw data collected, and the focus of the analysis of that data. Bartlett also offers a stage model of the philosophical process, but unlike Geisler, focuses primarily on the cognitive operations employed in the answering of a philosophical question, in this case "Is there a metaphysical self?". For instance, he describes the first two stages of the answer production process as:

1. Reflection on the original question; try to make it specific, easily handled.
2. Realization that there are numerous possible ways of interpreting the question, and perhaps recognizing that I can't effectively deal with all at once, so I exercise an option to deal with one that I single out, perhaps at random. (1978, p. 333)

Here Bartlett gives us an example of an informal analysis of a kind of philosophical product generation process. Thus Bartlett's 11 stage account provides an approximation of the sort of model I aim to produce in the proposed study, and his focus on the pedagogical use of this model and the data on which it is based also exemplifies a modest achievement of the pedagogical goals I highlighted in the preceding section. Despite these similarities, his study still has serious limitations (partly due to Bartlett 1978 not being written as a conventional empirical research report) that I have avoided. For instance, although Bartlett's stage model does provide us with some empirical data regarding the nature of philosophizing, it is of somewhat doubtful reliability since we are given very little information about the methodology employed and the data was drawn from only one philosopher (presumably Bartlett himself). In addition to this, Bartlett only conducts an informal analysis (i.e. he does not make his analytical methodology explicit and did not employ blind coders or other reliability assurance measures) and this analysis did not delve deeply into the nature of the cognitive process underlying the stages he identifies (such as which parts of the process are conscious or unconscious).

While the preceding researchers each focused on the features of philosophical thought and practice in general, Nenad Miscevic (e.g. 2012, 2013, 2018) has produced a similarly cognitively focused account of reasoning in political philosophy, focusing specifically on the use of thought experiments (TEs) in political philosophical discourse. Given this focus on TEs (and thus the method of cases in which they are used), the model can be thought of as a detailing and extension of the standard model. He gives the following account of the process of using a political philosophical thought experiment (PTE). According to Miscevic (2013), the political thought experimentation process starts with stage 0 in which the experimenter designs the experiment. Stage 1 of political thought experimentation (which Miscevic claims is exemplified in canonical works of philosophy such as Plato's Republic) is then the asking of a question about a particular (political and/or social) arrangement; as an example, Miscevic refers us to the Republic where Socrates asks Adeimantos if the community of children is just. Miscevic describes stage 2 as the stage in which the question is understood by the interlocutor. At stage 3 Miscevic places the attempt of the thinker (represented by Adeimantos in Miscevic's example) to actually produce a (conscious) mental representation of the arrangement he was prompted in step 1 to consider. According to Miscevic the 4th stage is the one in which an answer is produced which, he asserts, involves generating an intuition as to whether the arrangement under consideration is just or unjust. Miscevic suggests this "probably involves reasoning at the unconscious level" (p. 55). More recently Miscevic (2018) has given a more detailed account of the cognitive mechanisms underlying political thought experimentation which posits that that two sorts of mental representations make PTEs possible, mental models (for third person PTEs, where one is simply asked to imagine an socio-political arrangement) and mental simulations (which enable perspective taking in first person PTEs, where you are asked to imagine what you yourself would do in some imaginary situation). Interestingly, Miscevic's hypotheses about the role of simulation in political philosophical thought

experimentation share striking affinities with the empirical and theoretical work of John Clement who investigated the thought experiments generated by trained physicists facing a novel physics problem not amenable to solution by existing algorithms known by the participant (1994, 2006). Using the protocol analysis method, Clement found that the scientists in his sample seemed to be using imagistic simulations which involved somatic components (such as hand movements which imitated the twisting of a rod referred to in the task prompt). Given that Clement used the same methodology used in the present study, his operationalizations of concepts such as thought experiment and mental simulation could prove useful in analysis of occurrences of political philosophical thought experimentation recorded in the data collected.

The current project provides empirical data about the process of political philosophizing as it happens, against which I will evaluate Miscevic's model (which was based on the analysis of published philosophical texts and not on empirical data). Given that the task which I assigned the participants in this study involves having philosophers reading and replying to an article concerned with the legitimacy of claims for compensation based on historical injustice, the study also extends the cognitive analysis of political philosophical thought, pioneered by Miscevic, to the analysis of the analytic debate surrounding historical injustice, which has not yet been done.

2.3 Relevant Psychological Stage and Componential Models

Besides the philosophy specific stage models just reviewed, of which I will be testing hypotheses derived from Seakgwa (2017) and Miscevic (2013, 2018) (since they have yet to be empirically tested), more empirically well-grounded psychological stage and componential models are also relevant to the investigation undertaken here. It is the discussion of these models of a select few cognitive/psychological processes (and combinations of processes), as well as existing empirical studies of these processes in samples of trained philosophers, to which I now turn. I include the process models I do because there is prior reason (primarily existing metaphilosophical interest these phenomena have garnered) to believe that the phenomena they seek to describe play an important part of the process of philosophizing.

2.3.1 Stage Models of Argumentation

The first of these important phenomena is argumentation. Although the model in Seakgwa (2017) does have to acknowledge the centrality of argumentation in the philosophical process by counting arguments as a kind of philosophical product, because of the emphasis it places on philosophizing as a creative process, it does not offer much explicit account of the role played by argumentative reasoning in the philosophical process. This nonetheless points toward the fact that studying the process of philosophizing provides a promising context in which to bring together literature in the psychology of argumentation and in creative cognition, since in philosophy creativity will often be aimed at argument production. A particularly helpful text in this regard for our purposes is Iordanou, Kendeou and Beker (2016) which provides a review of the literature on argumentative reason in psychology (particularly within educational and developmental psychology). Iordanou et al provide an overview from which a stage model of reading-based argumentative reasoning can easily be derived. At the most coarse-grained level these stages are argument comprehension, evaluation and production. Iordanou et al cite research which suggests that argument comprehension in the context of reading requires the construction of a situation model which is a kind of mental representation that represents the text being read as a collection of nodes and links and that is then stored in semantic memory (p. 42). According to them one of the most important factors influencing the successful construction of such a model (at least for texts where the emphasis is argumentation), is an aspect of semantic memory called the argumentation schema (*ibid.*). The argumentation schema is a collection of expectations and beliefs regarding arguments which is theorized to be activated by claims detected in

the text. The argument schema then in turn activates knowledge, attitudes and beliefs relevant to the topic about which the claim was made. The extent to which a coherent and interconnected situation model is constructed determines the degree to which the text has been understood. Work on argument evaluation has mostly been concerned with how this understanding of text and argument comprehension can help understand the mechanisms underlying argument evaluation. For instance, it has been found that participants find claim-reason arguments more persuasive (p.47).

Voss et al., 1993 have also constructed a stage model of the processing of informal arguments which is likely to prove useful in analyzing the data gathered in the present study. Their model assumes that the claim is encountered before the reason and that this claim is then evaluated in a process which activates an attitude which they treat as the affective component of the evaluation. According to them, the claim and associated attitude then form a complex which in turn activates reasons associated with the claim. In Voss et al's final stage, the claim-attitude-reason(s) complex activates associated values. In their experimental work in which they set out to test hypotheses derived from the model just described, they also found that the speed at which each component was activated was determined by specific relations between claim-attitude, between attitude and reason, and between reasons and values. This model should be useful because it is the only explicitly empirically supported processual model dealing with the cognition underlying informal argumentation, which is often what philosophers would have to engage in when consuming and producing philosophical products.

With regards to empirical studies of argumentation by actual philosophers, De Cruz and Smedt (2013) have found some experimental evidence for confirmation bias in the way professional philosophers evaluate arguments from the philosophy of religion which aim to establish the existence or non-existence of God.

Although Fischer et al (2019) did not study trained philosophers, they claim that their findings show the unreliability of inferential processes which influence argument comprehension, evaluation and production and thus deserve a mention in the context of the current project. Fisher et al found support for a number of hypotheses about default inferential processes triggered by certain words which lead to fallacious conclusions and generate pseudo-paradoxes.

2.3.2 Existing Stage Models of Creativity

While Seakgwa (2017) drew much from the creative cognition literature, because of the voluminous and dispersed nature of that literature it did not, and possibly could not, incorporate all the pertinent insights that literature has to offer. One set of recent and interesting articles dealing with the relation between dual process theory and creativity warrants a mention; this set includes Pétervári, Osman and Bhattacharya (2016), Barr (2018) and Sowden, Pringle and Gabora (2015). All three of these texts reflect the convergence among the process models in the creativity literature (such as the Geneplore model and the Blind Variation and Selective Retention model, see Runco (2017) for an overview of these and other models). These models differ in the details, but broadly agree that creative processing happens in two stages, idea generation and idea evaluation. In the idea generation phase, a number of potentially creative ideas are formed in response to the requirements of the given task, and in the evaluation phase these ideas are explored and evaluated for how well they meet the goal the task requires one to reach and finally select the idea or ideas which meet the requirement. The set of studies mentioned above also agree that the type 1 and type 2 distinction drawn from dual process theory does not neatly map onto the generation/evaluation distinction, despite earlier ideas that seemed to associate idea generation with type 1 processes and type 2 processes with idea evaluation (such as Mednick's model of creativity as the production of remote associations as explicated in Mednick and Mednick (1971)). For instance, Petervari et al's model of the role of intuition in creativity posits two distinct pathways one can follow to a creative solution when confronted by an ill-

defined problem (as illustrated in Figure 1 below), one which relies on existing solutions and strategies, which Petervari et al call “existing paradigms” (2016, p.9), and the other which relies on more original approaches developed by way of the agent’s own judgment.

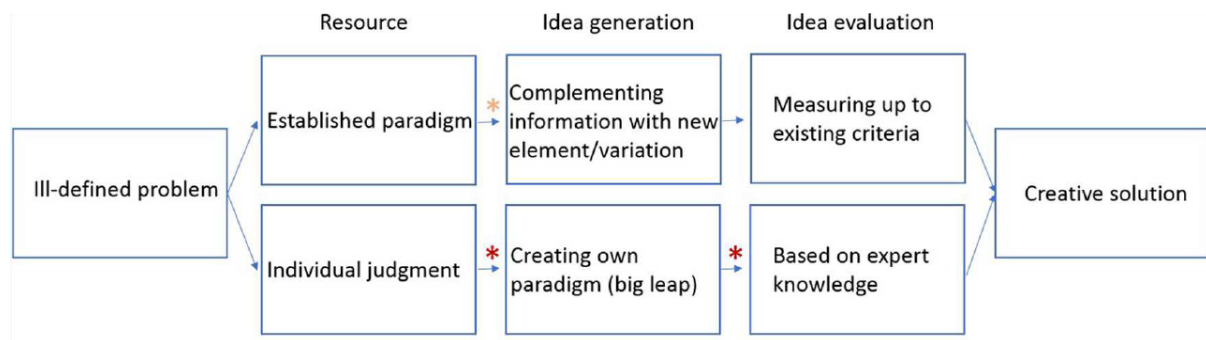


Figure 1, from Pétervári, Osman and Bhattacharya (2016, p.9)

On the first path intuition can be used in the idea generation phase to help recognize new ways in which to add to or modify the existing paradigm which yield valuable results. In pathway 2, intuition is more readily used in both the idea generation and evaluation phases. Here, due to the insufficiency of existing paradigms or the agent’s knowledge thereof, the agent utilizes her own judgment. This, for Petervari et al amounts to relying solely on intuition for the generation of new paradigm and again relying on intuition for the selection of the new and valuable ideas which constitute the solution. Interestingly Petervari et al employ a conception of intuition unlike that of creative intuition as conceptualized by Thagard (2014) and followed by Seakgwa (2017), or most other theorists working on it under the banner of insight problem solving, or the justificatory intuitions which have been the object of investigation in experimental and metaphilosophy. Unlike these conceptions of intuition, where a product abruptly appears in one’s consciousness, Petervari et al think of intuition as more of a gradual process where cues accumulatively lead the agent to a coherent solution, with the product only made accessible to consciousness at the very end of this process¹². Here they draw on Kenneth Bowers and colleagues’ work on this more gradual conception of intuition in the context of a semantic task such as what they call the Dyads of Triads (DOT) (e.g. Bowers et al., 1990; Bowers, Farvolden and Mermigis, 1995). As depicted in the sample DOT in figure 2, in this task participants were presented with two columns of 3 words each, where in one column each word was semantically associated with a fourth unstated word (this was called the coherent triad) and in the second column this was not the case (this was called the incoherent triad).

¹² This disagreement is but a latter-day iteration of a longstanding debate in psychology regarding “aha” moments (whether called creative intuition or insight), which is sometimes called the “gradual-sudden” debate, regarding whether “aha” moments are just the abrupt realizations they are often thought of as, or whether they have more temporally extended antecedents. For a brief overview of this debate see Welling (2007), and see Zander, Öllinger and Volz (2016) for a recent attempt at resolution of it.

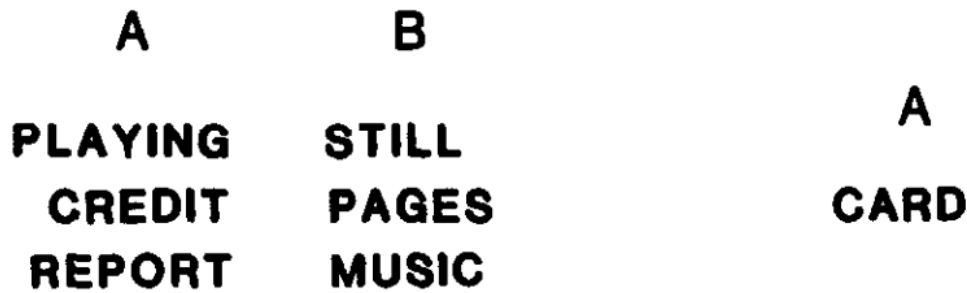


Figure 2, from Bowers et al (1990, p. 77).

In this example “A” would be the coherent column while “B” would be the incoherent one.

Participants were then asked to offer a solution (by giving the unstated word for coherent triads) and to say which triad was coherent and which was incoherent. It was found that although subjects were unable to find the solutions in the majority of cases, they were able to correctly judge which triad was coherent in most cases despite not being able to find a solution. Bowers et al (1990) take this as evidence that creative intuition involves an initial “guiding stage” (p.74) where the task automatically triggers the unconscious activation of relevant information stored in semantic memory. This activation gradually increases in response to clues present in the task until the activation has reached a level high enough to pass into consciousness, making a hunch or hypothesis consciously available. This is what Bowers et al call the “integrative stage” (*ibid.*) and what Seakgwa (2017), following Thagard (2014), called creative intuition. Where Bowers et al (1990) and Petervari et al seem to diverge is in their conception of what happens after the occurrence of creative intuition. Although Bowers et al and Petervari et al’s models both acknowledge the lack of neat mapping between the stages of creative processing and the Type 1/Type 2 distinction, they differ in how much emphasis they put on each type of processing in their respective conceptions of the idea evaluation stage (which, for Bowers et al, is the context of justification). Bowers et al (1990), in a similar vein to Seakgwa (2017), employ the DJ distinction and focus on intuition as it occurs in the context of discovery, while seeing the context of justification as involving more type 2 processing. Though Bowers et al (1990) do admit that “these two processes doubtless interpenetrate and inform each other in a manner that can be difficult to disentangle” (p.75), which I take to mean that the type 1 processing they take to be characteristic of the context of discovery can at least sometimes occur in the context of justification and vice versa. By contrast, Petervari et al see the analogous stage in their model, idea evaluation, at least when following the second path, as *dominated* by intuitive (type 1) processing. Unlike both Petervari et al and Bowers et al, however, Seakgwa (2017) does not mention a guiding stage preceding the occurrence of creative intuition, nor does it, as Petervari et al do, mention the generation of more than one idea during the idea generation process.

2.4 Mechanisms by Which Philosophical Products are Produced

While the descriptions of the stages of philosophical inquiry do help us grasp the philosophical process in a broad sense and tell us something about the mechanisms which underlie them (for instance, Miscevic’s model tells us whether the cognitive mechanisms in each stage are likely to be conscious or unconscious), they do not provide us with a detailed account of the nature of the conscious and unconscious cognitive mechanisms involved in each stage or to transition from one stage to another. Thus, we now turn to a discussion of these mechanisms.

Seakgwa, 2017 (again, drawing on and extending the work of Hajek) posited that the philosopher has three tools for moving toward her goal state: heuristics, logical analysis and creative intuition.

2.4.1 Logical Analysis and “Philosophical Heuristics”

According to Hajek, interactions and informal observations of philosophers, as well as evidence present in a number of philosophical texts¹³, have led him to discover that “good philosophers repeatedly [use] techniques, perhaps unconsciously much of the time, which *can* be easily learned” (2014, p. 291). Hajek calls these techniques “philosophical heuristics”, these are basically strategies which facilitate the transition from initial state to goal state (or at least a state nearer to the goal) by “providing some tools for breaking [the problem] down into easier subproblems” (2014, p. 282), and thus reducing the amount of searching needed in order to find a solution¹⁴. Hajek proposes that his philosophical heuristics should be seen as adding to the tools of logical analysis (both formal and informal) that philosophers have at their disposal and that can also serve to locate flaws in existing arguments and positions as well as generate new ideas (2014, p. 283). I will, when using the term, also use it to refer to other formal tools such as predicate calculus and decision theory.

Hajek classifies his heuristics into two groups, “negative”(2014, p. 305) and “positive heuristics”(ibid.) with the former being useful for locating flaws in existing philosophical products (and thus generating negative philosophical products) and the latter better suited at assisting one to discover unexplored philosophical topics, arguments etc (and thus generating creative positive philosophical products)(ibid.) An example of a negative heuristic which Hajek recommends is the “Check extreme cases” heuristic:

Start with a hard problem: someone proposes a philosophical position or analysis and you are looking for trouble for it, because you suspect that there is something wrong with it. (The ‘someone’ might be you, in which case your job is to find trouble for your own position before someone else generously does it for you.) Try this simpler problem: look for trouble among *extreme cases*—the first, or the last, or the biggest, or the smallest, or the best, or the worst, or the smelliest, or ... It is a snappy way to reduce the search space. (2014, p. 285)

Here the philosopher has heard/ read a philosophical product which triggers a “hunch” (2014, p.283) that the product is flawed. This possession of an understanding or mental representation of a philosophical product and a hunch that it is flawed can be seen as the philosopher’s initial state. The identification of a specific flaw can then be seen as the goal state. In order to transition to the goal state, the philosopher “looks for trouble in extreme cases”. This is strategy can be decomposed to yield specific operators (e.g. think of an extreme case which is relevant to the analysis/ argument/ position advanced in the existing product being evaluated, then assess whether the analysis/ argument/ position can be satisfactorily applied in the case that has been generated).¹⁵

An example of one of the positive heuristics which Hajek recommends is the following:

Take some big philosophical idea or program, and apply it to a new case. The scheme is to apply philosophical system *X* to specific problem *Y*, for suitable *X* and *Y*. (2014, p. 317)

¹³Hajek cites Lewis (1986), Sorensen (1996), Stove (1991) and Parfit (1984) among others, as examples of texts where the strategies he has identified are observable.

¹⁴ See Beaney, 2017 for a similar catalogue of strategies to those given in Hajek’s study of philosophical heuristics, but in the context of an introduction to analytic philosophy.

¹⁵This heuristic appears to be an elucidation of the thought process employed in carrying out the method of cases as described by Cappelen (2012).

2.4.1 Creative Intuition

There is an extensive literature dedicated to the investigation of the cognitive and neural underpinnings of “Eureka” moments commonly studied under the label of “insight” (Steenburgh et al 2012, p. 475) which can be defined as:

[that which] occurs when a new interpretation of a situation or the solution to a problem suddenly springs into conscious awareness, seems obviously correct, and is accompanied by a surprising and emotional experience known as the “*Aha*” phenomenon. (*ibid.*)

Thagard draws on and extends the results of this literature. Thagard calls the Eureka phenomenon “creative intuition” (2014, p.287), which he defines as a “suddenly conscious realization [resulting from unconscious processes which the experiencer cannot report] concerning something that is new and valuable” (2014, p.288). He also notes that a characteristic (but not necessary) feature of the phenomenology of creative intuition is the “highly positive emotion of excitement” (2014, p.300) which accompanies it.

Miscevic has proposed an account of the mechanism of political philosophy which he refers to as “sources of philosophical theorizing” (2013, p. 52). According to Miscevic:

one can speak of three kinds of standardly acknowledged sources of political philosophical theorizing: intuitions elicited in political TEs, principles of general ethico-political kind, and finally, the (presumed) facts together with (presumably) true descriptive explanatory theories. (*ibid.*)

Though there is some overlap between the model forwarded in Seakgwa 2017 and the above, for instance Miscevic’s characterization of the political TEs partly overlaps with the negative heuristics described by Hajek, like most metaphilosophers, Miscevic seems to focus only on justificatory intuitions and thus has also failed to consider the role played by creative intuition in political philosophizing. I plan on remedying this shortcoming in the current study by gathering detailed though limited empirical evidence based on which a more complete picture of political philosophizing can be built.

2.5 Existing Accounts of Creative Cognitive Mechanisms

Welling (2007) derives a classification of 4 mental operations implicated in the production of creative processes based on an extensive literature review. Since these operations are supposed to be domain general, I assume they are relevant to the creation of philosophical products as well. Welling’s list of creative operations includes “application: the adaptive use of existing knowledge in its habitual context” (2007, p.167). The idea here is, because according to Welling no situation is exactly identical even to others of the same kind, creativity is needed to modify previously acquired conceptual structures for dealing with a kind of situation to fit the particular situation at hand. Thus, Welling asserts that “this operation consists of the creative adaptation of existing conceptual structures to fit normally occurring variations” (*ibid.*). Welling’s second entry to his list is “analogy detection” (p. 168). According to him this is the “transposition of a conceptual structure from one habitual context to another innovative context” (*ibid.*). Here Welling largely follows others working on analogical processing (such as Dunbar, 1997 and Gentner and Maravilla, 2017) in noting that such processing involves the detecting that “the abstract relationship between the elements of one situation is similar to those found in the innovative context” (*ibid.*). The third process he singles out is “combination generation” (p. 169), which is also an oft noted operation in the literature (for instance, Thagard 2014 gives us a personal example of this). According to Welling, “combination is the merging of two or more concepts into one new idea” (*ibid.*). He notes that in contrast to analogy detection, combination

involves the creation of a new conceptual structure. The final cognitive operation Welling adds to his list is one he is the first to view as important for creative cognition, “abstraction discovery” (p. 170). He defines this as “the discovery of any structure, regularity, pattern, or organization that is present in a number of different perceptions that can be either physical or mental in nature” (*ibid.*), he then goes on to define “abstraction” (*ibid.*) which is the product of the process just described, as “a conceptual entity, which defines the relationship between the elements it refers to on a lower, more concrete, level of abstraction” (*ibid.*). To illustrate this concept, Welling, borrowing from Piaget (1972 as cited in Welling, 2007, p. 170), makes use of the example of the process by which a young child first comes to possess the notion of weight. According to Welling (relying on the work of Piaget), in the first phase of development young children only report particular experiences of objects that were difficult to lift and others that were easier to lift. From many such interactions with objects varying in the ease with which they can be lifted, the child starts to form the concept of weight. At first, given the moderate correlation between the visual appearance of size with the weight, the child will form the misconception that the size of the object dictates how easily it can be lifted. But from repeated violations of the rule that big objects are heavier than small ones, the concept of weight which is independent of size starts to take shape. This new abstraction brings together numerous different experiences of objects each varying in the difficulty with which they can be lifted, under one concept. Welling seems to think that this four mechanism taxonomy provides an exhaustive account of all the idea generating operations in the proposed in the literature up to the point of his writing¹⁶.

In addition to building a more accurate model of political philosophizing which could be used to evaluate and improve philosophical practice—a task I think is of immense importance- I think an equally important task which has thus far been neglected by many is that of analyzing philosophical thought in order to excavate heuristics and other philosophical habits of thought which may be of use to non-philosophers (see the final chapter for more detail regarding how this may be achieved). There are some examples of this, besides Hajek’s philosophical heuristics project; there is Dennett (2013) where he isolates and explicates a number of useful augmentative strategies gleaned from philosophical thought, for a general audience. Examples of projects with similar aims but not focused on philosophy or philosophers can also be found in the work of Lindley Darden (2002, 2006), who focuses on explicating useful cognitive strategies found by analyzing the thought of biologists, and Alan Schoenfeld (1985) whose work focuses on studying thought of mathematicians to improve mathematical pedagogy.

The discussion above shows that Miscevic and Seakgwa currently offer the most detailed models of the process of philosophizing (not focused on the literacy practices used), since both give detailed accounts of the stages and cognitive mechanisms involved in this process. As can also be seen above, both of these have yet to be directly empirically tested. This testing is thus the task which occupies the rest of the investigation presented here. In the next chapter, I detail the methods used to carry out this testing.

¹⁶ Although, Runco (2017) argues that “emergence”, could be added to this list, I am not sure I agree, since it is not sure this idea is distinct from creative intuition since it’s only defining feature is that it does not seem to be derived from running reportable operations on existing concepts.

Chapter 3: Methodology

In this chapter I will be detailing and explaining the sampling methods, participant information, and data collection methods used in the current study. I will then go on to outline the procedure used to process and analyze the data thus collected. First, I will start with a brief introduction to the protocol analysis methodology as it was the primary method of data used in the study to be described, but it is little known to those working outside the subset of cognitive sciences where it is regularly used.

3.1 An Introduction to Protocol Analysis

The elicitation of verbal reports from subjects regarding the contents and sequence of their thoughts has had a long and controversial history in philosophy and psychology. In more recent years Herbert Simon and Karl Ericsson (1980, 1984, 1993; Ericsson, 2006) have developed a detailed theoretical framework which justifies one such method, a method they have dubbed “protocol analysis” (Ericsson 2006, p. 223). (It is also sometimes called the “think-aloud” method.) According to Simon and Ericsson, protocol analysis is a method which could help “understand in detail the mechanisms and internal structure of cognitive processes” (Ericsson & Simon, 1993: 1) by eliciting verbal reports of thought sequences. A major motivation for the development of protocol analysis was the mounting evidence which indicated that verbal report-based methods for studying thought altered the thoughts they were designed to study, or were otherwise unreliable or invalid (Ericsson 2006). Since the cognitive revolution reignited the interest in the study of cognition and its instantiation in artificial systems, a method for eliciting valid verbal reports of thought was much needed (*ibid.*). According to Ericsson and Simon, the elicitation of verbal reports using the methods and instructions specified in Simon and Ericsson 1993 fills this need by detailing how to elicit consistently valid reports of a participant’s thoughts during completion of a given task (*ibid.*).

The literature contains many examples and guidelines detailing what executing a protocol analysis study entails (e.g. Saldana, 2009; Baldacchino et al., 2014). Research participants are told to ‘think aloud’ (i.e. to vocalize their thoughts) while performing a task (this is called concurrent protocol analysis) or after the task is completed (this variant is called retrospective protocol analysis). These think aloud elicitations can be either mediated, where the researcher asks questions and prompts the participant to provide more information while they are completing the task or shortly after they have completed the task, or non-mediated where the researcher only provides the participant with the initial instructions to verbalize their thoughts and only minimal prompts such as “keep talking” if the participant has remained silent for too long (Baldacchino et al., 2014). These think aloud sessions are video recorded and/or audiotaped then transcribed, and finally analysed (i.e. broken down into segments and coded) to provide insight into the thinking processes that mediate task performance (*ibid.*).

The theoretical underpinnings of the protocol analysis rest on the hypothesis that, as Ericsson puts it, “The closest connection between actual thoughts and verbal reports is found when people verbalize thoughts that are spontaneously attended during task completion” (2006, p. 228). On Ericsson and Simon’s picture, a large subset of these thoughts which pass through the mind of the participant and are spontaneously attended to during task performance are automatically encoded as sub-vocal verbalizations that the participant experiences as inner speech (Ericsson 2006). Since these thoughts have already undergone verbal encoding, few additional cognitive processes are needed to vocalize these thoughts and, crucially, in addition these processes do not alter the sequence of thoughts and thus avoid what is referred to by Simon and Ericsson as “reactivity”. Thus, if Simon and Ericsson are right, the verbal reports collected with their method (known as protocols) would be a faithful

recording of the participants' thoughts as they would have arisen even had they not been made audible because the process of vocalization only makes the already verbally encoded inner speech audible. The figure below illustrates this theoretical schema:

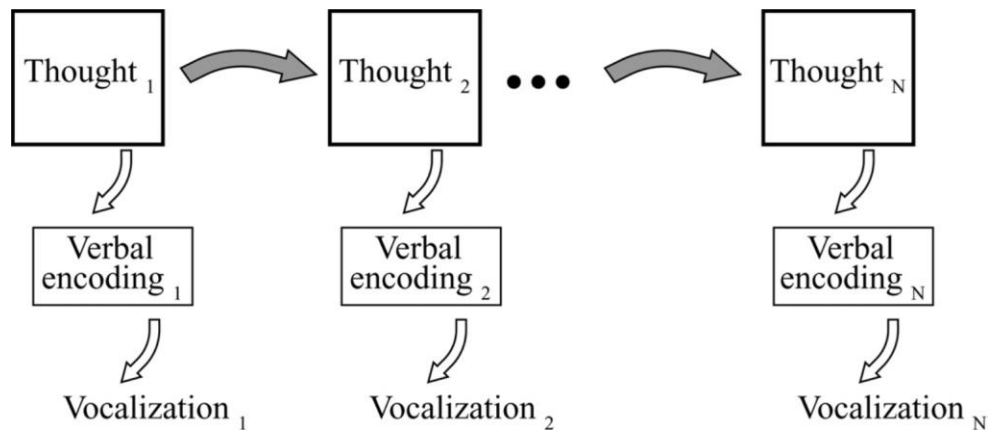


Figure 3. Pictorial representation of Simon and Ericsson's model of the cognitive processes underlying verbalization of thought (from Ericsson 2006)

Importantly, the transition processes, symbolized in the figure above by the gray arrows, are processes that are not automatically verbally encoded and thus would not ordinarily be present in experience as inner speech but can be given verbal expression (after additional processing) when thinking aloud (Ericsson 2006).

With this account of the relation between thought and vocalization of thought, Simon and Ericsson offer an explanation for the findings of studies conducted by Gagne and Smith which are widely seen as challenges to methods that rely on concurrent verbalization. Gagne and Smith showed that when asked to verbalize reasons for their moves on a task, participants' performance on an assigned task improved, in that they required fewer moves to complete the task when compared to a silent control. This was taken to indicate that the act of verbalization altered the cognitive processes which mediated performance of the task (Gagne and Smith, 1962 as cited in Ericsson 2006). Ericsson and Simon argue that in the investigations of Gagne and Smith, the method of elicitation and instructions given by the researcher to the participants are to blame for the invalidity of the reports (Ericsson 2006). Recall that, according to Simon and Ericsson, when a thought is attended to during task performance it arises as a verbally encoded segment experienced as sub-audible utterance (i.e. segment of inner speech). These can be made audible without altering the sequence or content of those thoughts if and only if they are elicited either concurrently with completion of a task and the participant is instructed to verbalize the thoughts that arise spontaneously as they attempt complete the task (providing practice on test tasks if necessary), and not instructed to provide any reasons or further information for the thought verbalized during the task performance (*ibid.*). They postulate that by asking the participants for reasons explaining their thinking while completing a task the researcher is prompting the participant to carry out further cognitive processing/thinking (e.g. metacognitive and inferential processes) to generate those reasons in addition to the thoughts that would have arisen spontaneously during non-mediated task completion (*ibid.*). It is these additional processes responsible for the change in performance observed by Gagne and Smith (*ibid.*).

Simon and Ericsson's model also allows them to account for studies such as those conducted by Nisbett and Wilson (1977 as cited in Ericsson 2006), which find that participants' retrospective verbal reports of their thought process during a particular task after they have completed that task do not correspond with the data gathered from observation of them completing the task. These investigations

have thus been taken by some to establish the invalidity of methods which make use of retrospective verbal reports. According to Simon and Ericsson (1993 as cited in Ericsson 2006), although protocol analysis can yield valid reports when verbal reports of the sequence of thoughts during a task are elicited shortly after the completion of the task, but only for tasks that require responses in a very short time. This limits the length of the chain of thoughts that mediated the response, thus keeping within the capacity of short-term memory (Ericsson 2006). The interval between completion of the task and elicitation of the report also needs to be kept to a minimum for reasons concerning the length of time a representation of that thought can be kept in short-term memory (*ibid.*). Thus studies such as those of Nisbett and Wilson (1977), which found discrepancies between post-task completion interviews and the observational data available regarding task performance, actually show that once the representation of the sequence of thoughts that were present in attention during task completion exits short-term memory the participants' capacity for accurate retrieval is dubious and thus their reports reflect confabulation and flawed inferential reconstruction of the initial thought sequence (Ericsson 2006).

Empirical support for Simon and Ericsson's hypotheses come from a number of sources. Firstly, Simon and Ericsson (1993) systematically reviewed the studies conducted on the validity of verbal reports up to that time and showed that those studies in which the researcher used the methods and instructions recommended by Simon and Ericsson were shown to have elicited valid verbal reports when compared to a silent control. By contrast, those studies which violated Simon and Ericsson's recommendations were found to have elicited invalid verbal reports (Ericsson 2006). Support for Ericsson and Simon's method also comes from many studies which use other methods such as neural imaging (principally fMRI) to assess the validity of protocol analysis (Klasen et al., 2008; Durning et al., 2013). Though there have been those who have questioned the validity of think-aloud protocols as representations of peoples' actual thought processes (Hayes, 1986; Russo, Johnson and Stephens, 1989), protocol analysis is regarded by most with relevant expertise as providing at least a fairly accurate record of the cognitive processes which mediate the subjects' performance of a task (Wyatt et al., 1993; Baldacchino et al., 2014).

In this context, Cheryl Geisler's worries about protocol analysis should be attended to, since she was the first to employ the method to study philosophers and was thus influential in the conceptualization of the current research. Despite her use of the method, she argues against the classical theoretical framework developed Simon and Ericsson as explicated above. She instead suggests replacing this theoretical framework, which postulates one working memory unit and direct access to its contents in concurrent protocol analysis, with a theory which assumes modularity, like Jackendoff's (1987) intermediate level theory. Jackendoff's theoretical cognitive architecture postulates multiple working memory units corresponding to the multiple distinct modules which deal with processing in distinct domains. According Jackendoff, only "intermediate level" (1987 as cited in Geisler 1994, p. 111) representations stored in working and long-term memory are consciously accessible. In the case of the module which carries out verbal and linguistic processing, Jackendoff hypothesized that the intermediate level representations that were accessible were of a phonological nature, hence the phenomenology of hearing yourself which accompanies inner speech. If this model is correct, then concurrent protocols could only provide us with access to the intermediate level contents of one of the many working memory units—the one which stores representations processed by the language module.

However, Geisler does not offer any evidence-based or principled reason why we should replace the Simon and Ericsson's model with Jackendoff's, or any other. This is important, given the many different sources of supporting evidence found for the original theory cited above. I am also sceptical of the insinuation that Simon and Ericsson did not predict that only linguistic information would be

directly accessible by consciousness, as Geisler herself notes that they merely also think that information which is not originally linguistically encoded can be so encoded with the help of additional processing, although they admit that this may lead to reactivity. Now, Geisler may reply that modularity has become an increasingly widely accepted postulate, and thus a methodology which claims to offer access to the contents of the mind should take heed of its ramifications. Yet it is unclear to me that Simon and Ericsson's original theoretical framework is incompatible with all or even most cognitive architectures which take on board the modularity assumption, especially since most of them, such as Jerry Fodor's (1983), do not follow Jackendoff in positing multiple working memory units.

3.2 Protocol Analysis and Intuition

As noted, protocol analysis is designed to "allow investigation of cognitive processes mediating task performance in order to help researchers 'understand in detail the mechanisms and internal structure of cognitive processes'" (Baldachinno et al 2014, p. 165). We have also noted that on the creative intuition it is a cognitive phenomenon preceded by cognitive processes. It thus seems that protocol analysis would be well suited to an investigation of creative intuition since this is a cognitive event/process. Given that intuition in the context of justification is also conceptualized by many philosophers as a mental state, which is presumably also brought about by cognitive processes, protocol analysis should help us investigate these intuitions as well. A similar line of reasoning has explicitly been endorsed by Loenie Baldachinno and colleagues who detail a procedure for conducting think-aloud investigations of intuition (Baldacchino et al., 2014). According to Baldachinno et al:

Since intuition is a type of cognitive processing, it lends itself to protocol analysis that is designed to explore and understand 'the mechanisms and internal structure of cognitive processes' (Ericsson & Simon, 1993: 1). (2014, p. 250)

The basic idea is that when the researcher gives participants a task which the researcher suspects will require intuitive processing to complete and instructs the participants to verbalize all the thoughts which are attended to during task performance, the resulting verbalizations will be an accurate representation of the conscious sequence of thoughts that mediated task completion. Because on most accounts of creative and justificatory intuition, the cognitive processes which result in the conscious intuition that p is true are not themselves attended to, the verbal reports of the participants would not contain the details of these processes but participants will be able to report its products, namely the judgement that p and the accompanying feeling that p is true. From the content of the verbal reports which represents the content of working memory over the time taken to complete the task, the researcher can then draw inferences about the nature of the unconscious intuitive cognitive processes which produced the thoughts represented in those reports.

I hope that by showing how protocol analysis can be utilized to further metaphilosophical debate, others will be encouraged to use this method in studies with different designs which also attempt to answer questions pertinent to metaphilosophers (and philosophers more generally) thus expanding the methodological repertoire of experimental philosophers who have thus far predominately used survey methods.

3.3 Verbal Overshadowing and Protocol Analysis

Since this study uses the protocol analysis methodology to try and non-reactively study a process in which creative intuition is thought to play a significant role, I feel it necessary to address a long standing empirically based objection to the use of protocol analysis in the study of creative intuition/insight in problem solving. First to raise this objection were Schooler et al whose 1993 findings provided evidence of what they called "the verbal overshadowing of insight", which is a kind

of reactivity that interferes with the reporting and occurrence of insight/creative intuition (Schooler et al 1993 as cited in Fleck and Weisberg 2004, p. 993). They argue that differences exist between insight and non-insight problems in their vulnerability to this overshadowing, and they suggested that the processing involved in solving insight problems is not easily verbalizable (*ibid.*). According to Schooler et al, when participants are asked to think aloud while solving an insight problem, it is likely that they will attend to processes which are more readily verbalized, but which are not necessarily doing much work in moving the participant closer to his/her goal-state (*ibid.*). Based on their experimental work, Schooler et al. reported that solution rates for insight problems decreased when participants were instructed to think aloud (*ibid.*). This effect has also since been found when participants were asked to think aloud in many different domains, such as memory for taste (Melcher & Schooler, 1996), colours (Schooler & Engstler-Schooler, 1990), visual imagery (Brandimonte, Schooler, & Gabbino, 1997) and faces (Fallshore & Schooler, 1995), domains affected by verbal overshadowing tend to be nonverbal in nature. If these findings are replicable and widely generalizable they could disqualify protocol analysis as a method suitable for use in the investigation of the cognitive processes needed to complete tasks where creative intuition is likely to occur, since the verbal overshadowing would then be likely to cause reactivity which would make creative intuition less likely to occur.

Fleck and Weisberg (2004), however, argue that the actual extent to which Schooler et al's (1993) results are damaging to protocol analysis's prospects as a tool for investigating creative intuition cannot be simply uncritically inferred from their work alone, due to a number of methodological flaws. Firstly, according to Fleck and Weisberg, the tasks chosen for the experiments reported in Schooler et al. (1993) were explicitly chosen because they were believed to be particularly susceptible to interference by verbalization. Thus, the generalizability of Schooler et al's findings to tasks which do not share this susceptibility is unclear. Fleck and Weisberg's second worry stems from the fact that the participants in the experiments in Schooler et al (1993) were only given minimal explicit instruction regarding how to go about verbalizing their thoughts and were only given one practice task. Fleck and Weisberg argue that previous work by Ericsson and others (e.g. Ericsson 2002 and Meissner, Brigham and Kelley, 2001) suggests that this might not have provided enough familiarity with the verbalization process to get participants to only verbalize their thoughts as they would occur internally as in inner speech instead of attempting to explain their thought process which, as noted earlier, is the chief source of reactivity. Thus, Fleck and Weisberg suggest that the nature of the tasks chosen by Schooler et al (1993) and/or the lack of instruction or practice they offered participants, could account for their findings, rather than some inherent interference between verbalization and creative intuition.

Fleck and Weisberg (2004) thus reinvestigated the effect of overshadowing on creative intuition, with different tasks which were accompanied by more comprehensive instructions and practice. They found that with these modifications, concurrent verbalization did not impact the solution process on tasks that require the occurrence of creative intuition. I thus see no impediment to the application of protocol analysis to the study of creative intuition in the context of the process of philosophizing, as was undertaken the research reported here. In fact, since philosophical activity mainly consists in discourse consumption and production (which includes reporting on intuitions), the protocol analysis method is particularly suited to this investigation given that it is unlikely to introduce the interference seen in research on activities which are largely non-verbal/discursive.

3.4 Data Collection

First, participants underwent a semi-structured interview regarding their training, research interests, familiarity with Morris's article and the problem it raises and their opinion on the question of whether

descendants of victims of historical injustices are owed rectification by descendants of the perpetrator(s) of that injustice.

Following the interview, the participants were asked to read Christopher Morris's attack on the legitimacy of claims for compensation based on a charge of historical injustice in his "Existential Limits to the Rectification of past Wrongs" (1984).

Morris's article has sparked a sizeable literature within political philosophy, regarding what has come to be called the "non-identity problem" (Spinner-Halev, 2012, p. 323)¹⁷. The problem is that according to Morris, by trying to rectify a historical injustice, particularly for those descendants of the victim born after the perpetration of the injustice, we forget that, given the vast number of contingent events that lead to the birth of any one person but could have gone differently and thus have led to the birth of a different person, it is likely that the descendants of the victims of the injustice would not exist as they do today in a world where the injustice had not occurred. Thus, Morris argues, that descendants of victims of a historical injustice are not entitled to rectification from the descendants of the perpetrator(s) of that injustice, since without the occurrence of that injustice it is likely that the descendants to which are supposedly owed rectification would not exist in the first place.

The participants were then asked to write a 1500-word essay, in which they defend or criticise Morris's claim that incidences of historical injustice do not warrant compensation of the descendants of victims by the descendants of the perpetrators. Here are the exact task instructions given to the participants:

Imagine you are approached by a colleague to write a short article about the redress of historical injustices in reply Christopher Morris' article on the subject (which I have provided you with) arguing for or against his conclusion that we ought not try to rectify historical injustices. Imagine that your essay is for a special issue of a leading journal of political/social philosophy and thus your audience will consist of experts. Your essay should be no shorter than 1500 words and include at least 4 relevant references. You are required to think aloud throughout your completion of the task.

As can be seen from the last line of the instructions above, drawing on the work of Cheryl Geisler (1991; 1994), in order to facilitate the observation of the cognitive processes/ structures which enable the completion of this task, or at least to facilitate the collection of data from which these processes/structures can be inferred, each participant was asked to verbalize their thoughts while they were reading, thinking about or writing their essay. This was done in line with the requirements for non-mediated concurrent protocol analysis as recommended in Ericsson and Simon (1984, 1993) Ericsson (2006) and Fox, Ericsson and Best (2011). These verbalizations were then recorded using the OBS software and participants' own webcam enabled computers. These videos captured audio, the participant's face, and what was on the participant's display throughout the process. This made it possible follow what the participant was attending to on their screen while completing the task. This data collection process took 3 months (June to September 2019), and yielded 11 hours 42 mins of video in total. These recordings were then transcribed.

3.5 Participants

I selected a sample of 2 participants using purposive sampling (making use of contacts in the philosophical community). Participant 1 was a coloured male PhD student whose research interests lie outside political philosophy (in the metaphysics of personhood as well as metaethics), and who was

¹⁷ See Spinner-Halev 2012 for an overview

unaware of the existence of the non-identity problem. He nonetheless believed that historical injustices ought to be rectified.

Participant 2 was a white male PhD holder and an associate professor of philosophy, whose interests were also not in political philosophy (but in philosophy of language)¹⁸. He too was unaware of the existence of the non-identity problem before the commencement of the study, and believed that historical injustice ought to be rectified.

While small, this sample size is common in published research using the protocol analysis methodology, due to the volume and richness of the data collected (see e.g. Schoenfeld, 1985; Wineburg, 1998). Although some protocol analysis studies (e.g. Baldacchino et al., 2014) do utilize larger sample sizes, the time and other resource constraints to which the present study was subject, did not allow the use of a larger sample size. Also, my aim is only to provide initial testing of two descriptive models of philosophizing which claim to be able to describe all instances of the philosophical process, or at least the political philosophical process (if in an idealized fashion). Thus, even one occurrence of an aspect of this process that is not captured by these models (either separately or jointly) would constitute evidence that they need to be revised or replaced. The sample size I have chosen should thus be sufficient.

The process with Participant 1 went almost exactly as planned. First, I supervised two rounds of practice readings of a philosophical article unrelated to Morris's, in order to familiarize the participant with the concurrent verbalization of his thoughts, providing prompts such as "keep talking" when he kept silent for 5 seconds or more. He then started his first reading of Morris's article, while still under my supervision. After this first supervised session, participant 1 then completed the rest of the task unsupervised at home over a number of separate sessions which took place over period of the next 2 months, uploading each video to a shared Google drive as he progressed. In total, participant 1 recorded 9 hours and 55 minutes of video throughout the process. Unfortunately, his first unsupervised reading of the article failed to record. Despite this, he managed to provide voice recordings of his thought processes which took place shortly after this unrecorded reading. Because these voice recordings showed signs of the occurrence of creative intuition, I conducted a semi-structured phone interview with him shortly after receiving them to learn more about the thought processes reported in them and the timing and circumstances of their recording.

With Participant 2, I also supervised two practice readings of a philosophical article unrelated to Morris's, to familiarize him with the concurrent verbalizations of his thoughts while completing the task. He then completed his first reading of Morris's article while still under my supervision. Unfortunately, personal and professional obligations kept him from completing the rest of the task unsupervised and on his own time. Thus, he eventually completed the task (after doing two additional practice readings), again under my supervision, in one afternoon 3 months after the initial reading. Due to the factors just mentioned, Participant 2's task completion was rushed, which is reflected in the fact that he recorded only 1 hour and 47 minutes of video. I, nonetheless, think that the data this provides is still useful, if one keeps in mind that the process simulated therein more closely approximates the production of a first draft rather than a publishable article.

¹⁸ I am aware that the 100% male sample used here is not representative of the population of professional philosophers more generally. Although a number of female philosophers were approached, all of them declined to participate.

3.6 Transcription and Segmentation

The videos collected were then fully transcribed by two transcriptionists. I then segmented the transcribed protocols into units of complete thoughts, for example:

Morris's use of VN.// Urm, I realise that it's his formula but you know, the initial formulation because he uses VN and V //but urm I'll go back later and see later on if there's an issue with that.// If I'm being unfair or if I'm not using his um his own, his own formula correctly, okay.// What does this... What does and does not follow from this conclusion?// Okay but before I go there, I think I must go back to... here.// So I've established that I've got an issue with his//, let's see here//, it's this conception stuff now: "As long as they occurred prior to VN's conception, then virtually all cases of conception resting on the principle of rectification such as as ours, failed".// Urm, if VN would not have existed in the absence of the original misdeed, A, then it simply not true that VN would be better off in the absence of A.// ja, so relying on VN now again in this very narrow sense... urm in terms of the specific ur, manifestation of VN.//

It is important to note that the existing literature is vague regarding what actually constitutes a single thought unit, but does contain various examples from previous studies (e.g. Geisler, 1991; Clement, 1994; Dunbar, 1997; Baldacchino et al., 2014). Given this reliance on only ostensive definition, the segmentation applied here cannot claim to perfectly reflect where one thought ends and another begins. Nonetheless, the segmentation I have carried out does provide units of analysis which are practical given the nature of the analytical procedures to which they were to be subjected.

3.7 Analysis

With the help of the Atlas.ti software for qualitative data analysis, these transcripts, along with the interview data, notes and essays produced by the participants, will serve as the data to be analysed. These will be used in to test predictions I will derive from the models of the process of philosophizing presented in Seakwa 2017 and Miscevic (2013 and 2018) in the next chapter.

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Chapter 4: Data Analysis and Results

In this chapter I will detail the analytical procedures carried out on the data to provide answers to the research questions introduced at the outset of this project. This will be done by testing my earlier and Miscevic's models of the process of philosophizing. I will start by saying a bit about the logic of my approach.

4.1 On the Logic of a Descriptive Model Testing Approach

Recall that the questions to be answered by the current research are:

- What are the cognitive/psychological stages/components of the process of philosophizing?
- What are the mechanisms by which philosophical idea-generation takes place?

One way to go about answering these questions with the data collected in this study would be by a detailed qualitative inductive analysis, where the data is first sifted through without the help of predefined categories. The categories then emerge as the output of the analytical process¹⁹. While this would produce a detailed, empirically-grounded model of the process, it would require a time-consuming iterative analytical procedure that would not be feasible given the constraints imposed on this project.

I have thus opted for a deductive analytical procedure where the categories determining what will be looked for in the data will be derived from the models of the philosophical process provided by Seakgwa (2017) and Miscevic (2012, 2013 and 2018). If these categories are not able to capture what can be observed in the data, this would constitute a falsification of the aspect of the model from which those categories were derived. This method thus constitutes a testing of the two models which are the two most rigorous attempts that have been made thus far to answer the two questions above²⁰. This, however, will not be a purely deductive analysis, since I will flag ways in which the models and the coding schemes they generate could be expanded to capture aspects of the phenomena they currently do not.

Since it is unusual to speak of hypothesis or prediction testing in the context of descriptive qualitative models, I will offer a brief sketch of the philosophical undergirding of this way of speaking and thinking about the procedure used here.

An important distinction to keep in mind here is between predictive and descriptive models. Predictive/explanatory models produce predictions based on a conjectured understanding of the causal mechanisms which give rise to the phenomenon of interest or set(s) of phenomena of interest (e.g. a physiological description of the brain which can be used to predict the average response to various psychopharmacological or surgical interventions). These can also be based on a catalogue of statistical information regarding various relevant variables on the basis of which inferences about the phenomena can be made²¹. Descriptive models, which are aimed at describing the phenomenon or

¹⁹ Well known versions of this procedures are Grounded Theory, see Glasser and Strauss (1967), and thematic content analysis, see Anderson (2007). For a more generic variant with less theoretical baggage, see Thomas (2003).

²⁰ But also see Gendler (2011) and Hajek (2018) for comparable, but less detail and/or comprehensive accounts of some aspects of the philosophical process.

²¹ Note that the use of terms such as "predictive models" or "hypotheses" here do not necessary perfectly map on to more quantitatively focused use of these terms. For instance, "predictive model" as used here includes causal models such as those developed in Judea Pearl's work (e.g. Pearl 2009), which emphasize the role of causal understanding, and not just successful prediction based on theoretically unguided data-mining, which is

phenomena of interest (e.g. a purely anatomical description of the brain). Although a model can also incorporate elements of both (e.g. a description of some neural phenomenon in terms of functional neuroanatomy).

Despite the fact that it is unusual to talk of testing predictions derived from qualitative descriptive models, such models aim to describe a phenomenon or system as it is now and (barring some unforeseen change) will be in the future. Thus, they can be thought of as making a prediction about what properties the phenomena it seeks to model will have upon observation. Think, for instance, of a small-scale physical model of the solar system (one which might be made for a project in primary school using papiér-maché and clothing hangers to construct a mobile). This model can be thought of as predicting that, if one observes the solar system (at least from a certain vantage point), what one would perceive would correspond with the representation given in the model (e.g. the model and system observed would have the same number of elements of interest, which will be in the same order, and the elements in the model would have properties which correspond to the properties of the elements of the system observed).

This correspondence between model and system modelled could fail to hold for two reasons. The first would be the introduction of some change in the system after it was modelled that is not accounted for by the model. And secondly, the correspondence could fail to hold because of the inaccuracy of the model as it was constructed, even barring such unforeseen changes. This second kind of reason for the lack of correspondence between model and system modelled will be of interest for our purposes, at least if we assume, as I think is plausible, that no radical changes have occurred to the cognitive dimension of the process of philosophizing since the models tested here were constructed.

Since Miscevic and Seakgwa's models constitute the two most sophisticated answers to the two research questions I have posed, the contribution of the current study will take one of a few possible forms. Either the contribution made will be the finding that that both models do not accurately answer the questions, or one does and one doesn't, or both do, or some aspects of each do and some don't (etc). Thus, this study will make either a negative contribution to the literature, or a positive one, or some mix of both.

4.2 Testing Miscevic and Seakgwa on Intuitive and Analytical Processing in Philosophizing

Both Seakgwa's and Miscevic's models can be understood within a dual process framework, with intuition playing a central role in each (for Miscevic this comes indirectly through his focus on the method of cases) and each offering an indication of which parts of the process are conscious and which are unconscious. Given this shared reliance on the resources of dual process theory, it would be interesting to start with an analysis of the data in terms of the distribution of intuitive and analytical processing throughout the task completion process.

Both models, while vague on what percentage of the process can be accounted for by either of these kinds of processing, do seem to predict that the process will be dominated by type 2 processes, with only a select few processes being carried out by type 1 processing. On Miscevic's model, only 2 of the 8 stages of thought experimenting are (or might be) intuitive. This can be seen when he says, of stage 3 of the 2018 iteration of the model²², that "this [stage] probably involves reasoning at the unconscious level" (2018, p. 168), and when he says something similar of stage 6 (at least in the 2013

what the term is usually applied to. For a philosopher-friendly introduction to quantitative predictive modelling, see Trout and Bishop (2002).

²² There seem to be some unacknowledged changes to the model first presented in his 2012 and 2013 papers in his 2018 paper, I will draw on both models but focus mainly on its latest (2018) iteration, and only draw on earlier versions for areas in which the latest incarnation is unclear.

rendition of the model). Hence, I will treat 12.5% as the maximum expected percentage of intuitive processing (that is, 25% of the 50% of the process occupied by the context of justification, in which the TE would be used, and assuming an entirely analytically dominated context of discovery). This figure only considers the thought-experiment based procedure, which is the only intuition-involving one of the 3 “sources of political philosophical theorizing” (2013, p.52) which Miscevic mentions, and he notes that most contemporary philosophers draw on a mixture of these resources. Thus, 12.5% is probably an overestimate, but since there is no principled a priori way to know the distribution of “sources” throughout the process it is what I will opt for. This assumes that, at least in the extreme case, the method of cases will occupy the entire context of justification, that the thought units produced throughout the process will be equally distributed between the context of discovery and the context of justification, and that they will be equally distributed across each substage within these contexts. The minimum expected percentage of intuitive processing on Miscevic’s model is 0%, since it is possible to produce a philosophical product only drawing on the 2 sources (viz. general ethico-political principles, and facts along with causal explanations) which do not involve intuitive processing. Therefore, the expected range of the percentage of intuitive processing throughout the philosophical process is 0 – 12.5 %.

Seakgwa (2017) recognizes and emphasizes the occurrence of (creative) intuition, as well as the possibility of unconscious philosophical heuristics in the context of discovery. Evidence of this latter recognition can be seen in the approving quotation of Hajek’s claim that: “good philosophers repeatedly [use] techniques, *perhaps unconsciously much of the time*, which *can* be easily learned” (emphasis added) (Hajek 2014, p. 291 as cited by Seakgwa 2017, p. 16). Despite this innovation, Seakgwa still accepts, without modification, the standard model’s conception of intuition in the context of justification. This can be seen in the attempt to provide more detail about the cognition underlying the method of cases, rather than a revision of it, for instance, in the claim that “[the ‘Check extreme cases’] heuristic appears to be an elucidation of the thought process employed in carrying out the method of cases as described by Cappelen” (p.17). Although Seakgwa recognizes the possibility of the occurrence of creative intuition and unconscious philosophical heuristics in the context of discovery, this context also allows for the occurrence of conscious philosophical heuristics. This is evidenced by the endorsement of Hajek’s claim that “the heuristics are useful while you are waiting for inspiration to strike” (Hajek 2014, p 283 as cited by Seakgwa 2017, p. 17). This remark indicates that conscious use of the heuristics is anticipated and encouraged, even if creative intuition is also expected to occur. Even in a case where this conscious heuristic use does not occur, the insight sequence, of which this context would then consist, would be equally split between by type 2 processing (in the solution attempts/failures impasse) and type 1 processing (in incubation/restructuring, and illumination). Thus, let us place the expected range of the percentage of intuitive processing on Seakgwa’s model from 0% (for philosophizing without creative intuition, unconscious heuristics or the method of cases) to 37.5% (for philosophizing relying only on creative intuition in the context of discovery and relying solely on the method of cases in the context of justification)²³. All this assumes that the thought units produced throughout the process will be equally distributed between the context of discovery and the context of justification, and that they will be equally distributed across each substage within these contexts. The expected range of the percentage of intuitive processing on Seakgwa’s model would thus be 0 - 37.5%.

²³ this maximum value was arrived by assuming that in the case of creative intuition 50% of the context of discovery would be occupied by intuitive process and that this context in turn represents 50% of the total process, with 25% of the remaining 50% occupied by the context of justification, accounted for by intuition in the method of cases.

I will test these predictions with a modified version of Baldacchino et al’s scheme, originally used to code protocols representing the thought of entrepreneurs. I modified this scheme by adjusting the entrepreneurship-specific aspects of the existing codes and associated criteria to fit the present philosophical task (e.g. removing some codes and adding some codes)²⁴. I chose this coding scheme as it required the least revision of the few dual process coding schemes for protocol data presently available²⁵. Since the scheme was not directly drawn from Miscevic or Seakgwa, it includes codes for intuition that a scheme derived purely from these models would not include. However, given that these codes are consistent with the dual process theoretical framework both Miscevic and Seakgwa are based on, there would not be any straightforward reason which can be drawn from these models to reject the intuitive status of these additional features. One possible objection may be that these models are only meant to capture the metaphilosophically interesting kinds of intuition which occur throughout the process, and are thus justified in their exclusion of these additional kinds of intuition. In reply to this I would point to an insight that one can draw from the central argument in Seakgwa (2017) - the argument being that there is empirical reason to believe that some kinds of intuition which occur in the context of discovery which have not garnered any metaphilosophical attention thus far, are nonetheless worthy of such attention due to the effects they have on subsequent processing in the context of justification. This shows that judgements about the metaphilosophical interest of a particular kind of intuition which occurs in philosophical practice cannot always be made a priori, or by simply surveying which kinds of intuition are currently of interest to experimental and metaphilosophers. The potential metaphilosophical interest of the additional codes in the scheme below can, therefore, not be ruled out on these grounds.

Below, in Table 1, I will present a sample of the codes included in the scheme, with the entire scheme being provided as an addendum. I will do the same for all the analyses to come (except where the scheme used contains 4 items or less) in order to maintain the readability of the report.

Table 1: Coding scheme for intuitive processing

Coding criteria	Sources	Examples from protocol
It is an initial reaction or automatic response	Epstein (2011 as cited in Baldachinno et al 2014)	“that's funny...” “Ya, that's kind of <i>conceptually</i> interesting.”
It represents recognition of patterns (largely based on experience, expertise and knowledge): ● The argument seems familiar, similar to others the participant has seen (despite the fact that the participant has never	Dutta & Crossan (2005 as cited in Baldachinno et al 2014) Hodgkinson et al. (2008 as cited in Baldachinno et al 2014)	“Okay, so it's going to be <i>that</i> kind of an argument’ “Good luck trying to convince or persuade social justice warriors of reasonable principles of personal identity.” “Okay cool, the problem with this principle is it doesn't sound

²⁴ For example, I removed the code for “intuitive projection” (Baldacchino et al 2014, p. 169), an example of which is from the protocols they collected is: ‘This is going to be huge” (ibid.). I also added codes derived from metaphilosophical authors such Cappelen (2012) and Mizrahi and Ashton (2017), to capture philosophically unique occurrences of intuition.

²⁵ See, for comparison, Durning et al (2015) on dual process theory in the context of medical diagnosis and Moore et al (2014) on dual process theory in idea generation in engineering.

<p>read the Christopher Morris article or heard about the non-identity problem)</p> <ul style="list-style-type: none"> • Detection of problems, anomalies 	<p>Klein (2004 as cited in Baldachinno et al 2014)</p> <p>Miller & Ireland (2005 as cited in Baldachinno et al 2014)</p> <p>Simon (1995 as cited in Baldachinno et al 2014)</p> <p>Witteman & van Geenen (2010 as cited in Baldachinno et al 2014)</p>	<p>nearly as intuitive.”</p> <p>“Isn’t there like a kind of a category mistake here man?”</p>
<p>Seem True/special phenomenology: participant either says is accompanied by special phenomenology or uses the word seems or cognates</p>	<p>Cappelen (2012)</p> <p>Mizrahi and Ashton (2017)</p>	<p>“And that seems to be the first issue to me here. Because, it seems odd to think of like, it seems really weird to think that, um, that the existence of my son who we know retrospectively can say has come about, that... that he was somehow, that existence is somehow affected by a climate policy, um China's climate policy in the 70's”</p> <p>“Um I can just expound on this a little bit. On one hand, it seems an intuitive idea that we should always act to make the world a better place, and that the past no longer exists, i.e. does not count in ethics.”</p>
<p>Rock (As used by Cappelen 2012):</p> <p>If in a context <i>C</i>, evidence and arguments are given for <i>p</i> and those arguments evidence plays a significant argumentative role in <i>C</i>, that is evidence that <i>p</i> is not Rock relative to <i>C</i>. The existence of a context <i>C</i> 0 in</p>	<p>Cappelen (2012)</p>	<p>“My intuition says yes.”</p>

which you can get away with claiming p without providing argument or other evidence is irrelevant to p 's status in C , unless there is some clear evidence in C that what goes on in C matters for p 's status in C .		
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Table 2: Coding scheme for analytical processing

Coding criteria	Sources	examples from protocol
It represents what Klein describes as 'the process of trying to understand a problem by breaking it down into its components and then performing logical and/or mathematical operations on these components' (2004: 74)	Klein (2004 as cited in Baldachinno et al 2014)	<p>"So, Morris gives us a definition of rectification, urm, of rectification of past wrongs, urm, and then gives an example of, urm, land claims of various North American Indians."</p> <p>"(Speaking) So there's a more immediate problem and until we understand what's going on there, arguing about the ...problem"</p>
It involves a deliberate effort at what Sadler-smith describes as 'reasoning the decision through by a process of analysis' (2008: 35)	Sadler-smith (2008 as cited in Baldachinno et al 2014)	<p>"I was just reproducing a thought in head again"</p> <p>"Okay cool, that's the principle that in my response, I will have to somehow attack"</p>
It is characterized by attention to objective data such as market trends and statistics, prices and other information that is relevant to the task at hand	<p>Dane & Pratt (2007 as cited in Baldachinno et al 2014)</p> <p>Dean & Sharfman (1993 as cited in Baldachinno et al 2014)</p> <p>Gustafsson (2006 as cited in Baldachinno et al 2014)</p> <p>Sadler-smith (2008 as cited in</p>	<p>"Ya, okay, that seems about right, urm, because receiving stolen goods IS kind of a crime, if I buy stolen stuff, they would lock me up"</p> <p>"Law's not bad actually, law insists on damages for there to be a delict."</p>

	Baldachinno et al 2014)	
Reference is made to the lack of information available, or respondent seeks more information (including re-reading/closer examination of the text provided)	Dean & Sharfman (1993 as cited in Baldachinno et al 2014)	“Okay, gotta go to Parfit for that.” “Okay but before I go there, I think I must go back to... here.”

4.2.1 Issues with the Coding Schemes Above

Given the importance of the validity of the codes (about which more will be said in the limitations section), it would be remiss of me not to include some important caveats about the issues with the above coding schemes (as I will for all the coding schemes to follow which face known or foreseeable issues):

- It is problematic only having all high confidence judgements coded as intuitive. One could, for instance, have high confidence in a judgement for logical reasons (that are accessible to type 2 processes).
- Cappelen (2012) argues that “seems” is a generic evidential (a word which indicates that the speaker/author has some evidence for an asserted belief/judgement but does not specify what that evidence is), and thus cannot automatically be taken as referring to intuitive evidence, without some further evidence which is independent of the use of the word “seems” itself. Despite presumably being aware of this, Mizrahi and Ashton (2017) use the occurrence of the word “seems” as their sole indicator of the presence of intuition in their text-mining based approach to testing the claim that philosophers rely on intuition as evidence in philosophical practice (among other hypotheses). Among their most convincing evidence for this methodological move, are instances where philosophers use the term in a context where they make a claim but do not offer further argument for that claim. For instance, they cite a letter by Anscombe to the journal *Analysis*, in which she says:

The nerve of Mr. Bennett’s argument is that if A results from your not doing B, then A results from whatever you do instead of doing B. While there may be much to be said for this view, still it does not *seem* right on the face of it. (Mizrahi and Ashton’s emphasis added) (1966, p. 208 as cited in 2017, p. 10)

According to Mizrahi and Ashton, instances like this show that in a philosophical context at least, “seems” is an indicator of reliance on intuition as evidence, since no other candidate for the nature of the evidence referred to is produced. Seakgwa (2017) then argued that although this does establish that Cappelen was wrong in claiming that philosophers never rely on intuition, Mizrahi and Ashton do not successfully show how often this happens, because they fail to show that other occurrences of “seems” are also, at least more often than not, not accompanied by argumentation or reference to evidence other than intuition.

- Cappelen (2012) also argues that the mention of the term “intuition” and cognates by a philosopher are simply a kind of verbal tick and not actually representative of the speaker’s actual methodology.
- Nado (2016), has in turn, criticised Cappelen’s (2012) coding criteria which guided his case studies of various famous thought experiments (as they appear in the texts in which they were first published). According to her, they rely on unrealistic expectations regarding the explicitness of reportage of the phenomenology accompanying the author/speaker’s claims. She also claims that although he claims that such explicitness is not the only indicator he’ll be relying on, in practice he leans on it too heavily.

4.2.2. Results

Before presenting the results, however, I’d like to say more about the lack of conventional (frequentist) statistical techniques in what follows. Since one of the aims of the current project is to provide a basis for improvement of philosophical practice, it is important to maintain the accessibility of this work to political philosophers who are not statistically informed. For instance, an interested political philosopher could easily read this and implement personal reforms based on these findings, such as by purposely implementing type 2 processes to deploy negative heuristics quickly after the occurrence of a creative intuition to temper the FOR accompanying it, if they know they are prone to high confidence in ideas so generated. On top of this congruence with the aims of this investigation, is a purely methodological/statistical consideration which also motivates against relying on conventional statistical techniques. Although $n=2$ doesn’t violate the assumptions of many of the descriptive statistical measures, such as measures of dispersion about the mean (e.g. variance and standard deviation), these measures were simply unnecessary given the sample size²⁶.

Bearing this in mind, the results of the analysis for each participant are summarized in Tables 3 and 4 below:

Table 3: Frequency counts of intuitive and analytic processing for participant 1

	Session 1 (27/06/2019)	Session 2 (31/07/2019)	Session 3 (3/08/2019)	Session 4 (17/08/2019)	Session 5 (23/08/2019)	Session 6 (8/09/2019)	TOTALS:
Analytical (type 2) Processing	19	134	320	58	354	221	1106
Intuitive (type 1) processing	12	17	59	7	71	33	199
TOTALS:	31	151	379	65	425	254	1305

Table 4: Frequency counts of intuitive and analytic processing for participant 2

²⁶ I also don’t think that the data can be treated as many successive trials with the same participant (which can sometimes compensate for small sample size), because, despite its multi-session nature, the conditions for each “trial” were different (for instance the increase of task relevant information in the participants semantic memory over time) and thus the results cannot be treated as if they were drawn from a larger sample where the measurements of one is independent of the measurements of another, thus one can still not make generalizations of overall probability of the occurrence of various phenomena to the whole population based on the current data (Siva, Deepayan and Steve, 2016)

	Session 1 (13/06/2019)	Session 2 (11/9/2019)	TOTALS:
Analytical (type 2) Processing	120	229	349
Intuitive (type 1) processing	107	57	164
TOTALS:	227	286	513

The findings summarized above provide support to the overall picture of philosophizing endorsed by Seakgwa and Miscevic as detailed above, in that type 2 processes dominate the process, accounting for over 60% of the processing of each of the participants. The exact percentages of intuitive processing, with only 15.25% of participant 1 and 31.97% of participant 2's being intuitive, fall within the range predicted by Seakgwa, but not Miscevic²⁷. This is even without factoring in the occurrence of creative intuition (addressed below), since this was not captured in the protocols. Factoring this in yields a 17.89% total percentage of intuitive processing for participant 1²⁸, which still supports Seakgwa's prediction.

Although these findings place intuitive processing within the range predicted by Seakgwa (2017), the fact that this is so, even without counting the occurrence of creative intuition, suggests that Seakgwa (2017) underestimates the percentage of the total intuitive processing accounted for by non-creative intuitive processes of various sorts. Another unexpected finding is that despite the lack of reliance on creative intuition and the minimal reliance on TE, participant 2 employed almost double the intuitive processing than participant 1 did (factoring in the occurrence of creative intuition), even though participant 1 did experience creative intuition and relied much more heavily on the TE. This anomaly might be at least partially accounted for by differences in amount of rapid reading (which was coded as intuitive processing), possibly due to the time constraints on Participant 2.

Interestingly, session 1 of both participants involved a much higher proportion of intuitive processing, more than double the percentage than the average percentage of such processing found when viewing the rest of process in its entirety. Since this session was the one in which both participants first encountered and read the assigned article, it is reasonable to assume much of what was taking place cognitively concerned the construction of a coherent situation model. These findings would thus suggest that much of this construction process relies on type 1 processes. This is not a completely novel finding²⁹ but it is among the only empirical work, to my knowledge, which explicitly contributes to the integration of the situation-modelling and dual-process literatures.

One instance of creative intuition was not included in the protocols as it occurred while the participant was not actively engaged in the assigned task. Evidence of its possible antecedents were also lost, due to the mishap with Participant 1's data collection mentioned in the preceding chapter. Data that will be reported in what follows was gathered because I had reason to suspect a creative intuition had occurred because participant 1 mentioned, in his second recorded session, that after the reading which

²⁷ These calculations, however, lack a measure of or analogous to the estimation of standard error of a population statistic used in more conventional quantitative analyses, thus it's not clear how far the data has to deviate from it to be certainly unexplainable by error in the derivation of the percentage itself.

²⁸ In order to add the thoughts reported in the voice recording of the products of creative intuition, the recordings were transcribed and the parts of them containing the products of interest (the rest of the transcripts were not were not coded).

²⁹ See Zwaan and Radvansky (1998).

was not recorded (which was his second time reading the article and the first reading it in its entirety), that:

... like I say, I thought I was recording it and then I checked it and it wasn't recorded, so, I was sitting somewhere, without my computer and I had some ideas, reproduced the ideas and then I recorded those on WhatsApp voice notes, which I will include in the, the submission of the data.

Since the occurrence of solutions/ideas for a task while one is taking a break from the task is the hallmark of the incubation stage of the creative intuition sequence, this information was intriguing. Therefore, after receiving and reviewing this recording, I conducted a telephonic semi-structured interview, to ascertain whether the generation of the ideas reported therein matched the criteria set out by Thagard (2014) for the ascription of the occurrence of creative intuition. Thus, the questions I asked were derived from Thagard's definition as presented in that article. The questions were as follows:

- 1) Can you remember what you were doing when you had the ideas relayed in your voice notes (what was it)?
- 2) Can you remember what you were thinking about just before they occurred?
- 3) Can you remember what the experience of them first occurring was like?
- 4) Was there an affective component to the experience of the occurrence of these ideas?
- 5) Can you remember how confident you were in those ideas when they occurred?³⁰

It should however be kept in mind that this interview data shares all the pitfalls of other retrospective verbal report data not collected shortly after completion of task completion, which were rehearsed when I discussed Weisberg and Fleck (2004) above, which result in confabulation and thus compromise the validity of the data. But I would argue that the data is not compromised to such an extent that nothing can be gleaned from it. This is because besides question 2, the questions asked were not about the content of the working memory during task completion, but about phenomenological features which are associated with long-lasting retention in long-term memory (Ludmer, Dudai and Rubin, 2011).

Participant 1's answers for 1 to 3 confirmed that he was in fact not engaged in the task before the occurrence of the ideas and that he experienced the ideas as a sudden occurrence not produced by a reportable rational procedure. Up until this point he thus met the criteria for the ascription of the occurrence of creative intuition. His answer to the two final questions, regarding the affect and level of confidence accompanying the occurrence of the ideas, however, deviated from what would be expected on Thagard's definition of creative intuition (and most definitions of insight). He reported the experience being affectively neutral and not accompanied by high confidence.

Although the occurrence of these ideas would not qualify as creative intuition if one strictly adhered to all the criteria of the phenomenon, I am inclined to still view it as such since the criteria which justify the use of the words "creative" and "intuition" were met. That is, the ideas produced were novel (in the p-creative sense) and valuable in that they appeared in his final essay and were thus integral to the completion of the task; and they were intuitive in the sense that they occurred from processes out-

³⁰ I did not specifically ask if he could report the procedure used to reach the ideas, which is another of Thagard's criteria, because I took his characterization of the occurrence of the ideas as "sudden" to mean that they were not preceded by a reportable procedure. The fact that he did not mention any deliberate reasoning in his answer to question 2 also suggests that such a process did not take place.

side the control or awareness of the participant. Thus, it does indeed seem to be a case of creative intuition. What could account for the lack of intense confidence could be the nature of the task, which is considerably more complex than an average insight problem, the study of which provides the standard high-confidence-assuming definitions. For instance, in philosophy, it is always in the back of the mind of the philosopher that they might be missing a possibly devastating objection. This explanation is lent further credence by a portion of protocol data in which Participant 1 states that:

I suppose the um some philosophers or it... definitely me there it like you write this and you think it makes a hell lot of sense in fact you think it quite smart but there's this abiding concerns that you talking a lot of kak³¹, very real.

This seeming coexistence of confidence and doubt (what can be called feelings of rightness and feeling of error) would be an interesting object of future research.

This lack of confidence and affect accompanying creative intuition in the philosophical context negatively impacts the plausibility of Seakgwa's (2017) hypotheses that the supposedly necessary link between creative intuition and high feeling of rightness (as evidence by positive affect thought to accompany it) connects the occurrence of creative intuition with an increased likelihood of the philosopher displaying various kinds of confirmation bias during subsequent processing. The evidence provided by participant 2 shows that the link between creative intuition, positive affect and high feelings of rightness is not a necessary one as Seakgwa (2017) supposed.

Interestingly, despite participant 1 reporting that the ideas generated in the above-mentioned recording, there is some evidence from the protocols which suggest that there was in fact what Bower et al call a guiding stage of intuition which preceded it. This evidence can be found in the data coded under "It is an initial reaction or automatic response" above. The three thought units to which I refer are:

- Mm ya... Somehow I feel like this is not gonna end well (giggles)
- urm, ya, so, now... I'm a little sceptical of this.
- It seems like the kind of bullshit that philosophers talk in ivory towers, like logical daze...

All these represent a negative evaluation, which one would assume was based on some flaw or problem in Morris' article, but were generated before any arguments are offered regarding the nature of this problem or flaw. These judgements thus seem to be generated by way of an intuition which is neither creative nor justificatory but still plays a role in argument evaluation. The source of this intuition could be variously attributed to Bower et al's postulated accumulation of "cues to coherence", Voss et al's posited automatic attitude activation which precedes the activation of reasons, or confirmation bias which as stated in a preceding chapter De Cruz has found to influence argument evaluation in trained philosophers inter alia. Until such time as future experimental research is done to settle this causal question, I would like to remain neutral with respect to these possibilities and thus simply class the phenomenon evident in my purely descriptive data as "initial intuition" and describe it as the recognition of a flaw in or problem with x (where x can range from a claim, argument, to an action, object etc) without being able to give an account of the issue with x or a justification for categorizing x as problematic, flawed etc. This characterization is to isolate the manifestation of this kind of intuitive processing in the philosophical context, but I intend it to be viewed as a subset of a more general superset of phenomena which includes the coherence and incoherence judgements and Tip of the Tongue experiences. This phenomenon could play a role in defining the parameters for subsequent

³¹ The sentiment expressed in Afrikaans slang translates to the English expression "talking a lot of nonsense" (where "nonsense" is to be taken as referring to falsity, rather than the complete lack of semantic content).

idea search. But this hypothesis would need to account for the fact that participant 2 also seemed to share similar search parameters without experiencing initial intuition (at least some of the time).

I think it is worth adding a final gesture toward avenues for future research, this time regarding metacognitive feelings and the sense of understanding. While the coding scheme above does include codes which deal with confidence, and thus track metacognitive phenomena such as metacognitive feelings of rightness, it does leave out the sense of understanding (see Trout, 2002). This aspect of metacognition did seem to play a prominent role in what Geisler would call the reading and reflection stages of the philosophical process. Some examples include:

- I'm a little worried that I'm not getting the issues here, that I just don't get this, what the fuck they're talking about.
- Not sure I understood this argument.
- I don't understand this part.

This warrants attention because what the philosopher takes the argument of his opponent to be largely determines what arguments he forwards himself; thus a deeper understanding of when the sense of understanding (or lack thereof) prompts further attempts at gaining such understanding, and when it does not (and difficulty in understanding is taking as reflective of a flaw in the text, for example), will be important in a comprehensive description of the philosophical process.

4.3 Testing Seakgwa (2017) on the Stages of the Philosophical Process

I will now be testing the predictions which can be derived from Seakgwa (2017) about the stages of the philosophical process. For Seakgwa (2017) these stages differ depending on the mechanism by which philosophical ideas are produced, as explicated in the literature review section. Ideas generated by creative intuition are postulated to follow the "insight sequence" in their emergence, while ideas generated by way of heuristics and/or informal logical analysis are thought to be produced via a more methodical, science-like process³². For Seakgwa (2017), The DJ distinction provides the overarching stages for both of these pathways to the philosophical product.

In both cases, Seakgwa conceptualizes the first appearance of the claim that will be the conclusion of the main argument eventually made in the philosophical text as the end of discovery. The output of the creative intuition is posited to be a claim or a TE, which is the basic philosophical idea that is then developed with the help of information seeking in the context of justification. Here justification essentially means constructing the argument to which the philosophical idea is the conclusion, at least in the case of the intuitively generated idea being a claim. This basic structure can be discerned in the example Seakgwa treats as paradigmatic of the occurrence of creative intuition in philosophical practice. In this example, taken from Thagard (2014), in which he recounts that one day while he was watching a movie: "suddenly it occurred to [him] that the main problem of [his] PhD thesis, evaluation of scientific theories, might also be a matter of satisfying multiple constraints. That evening and the next day, [he] worked out the details" (2014, p. 287)³³. In this episode we see that the content of

³² Seakgwa says very little about the informal and/or formal logical analysis pathway, for example, he does not explicitly state ways it substantially differs from the heuristic-based pathway and does not offer enough to draw distinct predictions from. I will therefore treat them as one combined pathway for the analyses carried out in this section. But the analyses carried out to ascertain which mechanisms are employed for the participants' idea production (which will be presented shortly) does remedy this oversight somewhat.

³³ Here it is useful to use the distinction proposed by Seakgwa (2017) between occurrences of "spontaneous creativity" which is defined as the generation of a creative product which is novel and valuable without consciously aiming to do so, and "goal-directed creativity" where the creative product was deliberately sought

the representation produced by the creative intuition is a claim lacking accompanying reasons to believe it is true, and it is assumed that such reasons are supplied as part of what Thagard calls “working out the details”. Although what exactly this “working out” entails remain opaque. Seakgwa (2017) went on to hypothesize that the occurrence of a creative intuition which leads to the philosopher being inclined to believe that some proposition is true or at least probably true (i.e. is accompanied by high confidence/FOR), would bias the subsequent information search, such that information consistent with the claim is sought out, while information inconsistent with the claim is ignored³⁴. The necessary link between the occurrence of creative intuition and high FOR on which this hypothesis depends has already been disconfirmed by participant 1’s report that he did not have high confidence in his intuitively generated ideas.

Seakgwa is a bit vaguer about the heuristic-based pathway, here he relies on a hypothetical example provided by Hajek (2014):

Suppose that you have been beating your head on a problem, waiting for a lightning bolt of brilliance to strike you. I hope it does. In the meantime, some of the heuristics may help you. Or you may have a hunch that there is something wrong with a philosophical position, but you are struggling to nail what it is. Again, some of the heuristics may help. (p. 4)

He also relies on the actual process reported by Mehta (2016) regarding his idea generation procedure, which includes the following description of heuristic/informal logical analysis use:

Take the thesis that an assertion that *p* is epistemically permissible just in case one knows that *p*. I might consider several extensions of this thesis: e.g., that a *belief* that *p*, or a *treatment of the proposition that p as a reason for action*, is epistemically permissible just in case one knows that *p* ... Once I have generated a rich set of possible hypotheses, I go on to test their predictions against the evidence. (p. 1-2)

Here we can see that instead of being hit by a “sudden realization”. Mehta instead methodically entertains a number of possible creative products before initiating subsequent reading and thinking to evaluate these products, and incorporating the ones that are supported by the evidence into a philosophical text. Unlike in the case of the intuition pathway, in heuristically based philosophizing, Seakgwa (2017) recognizes the possibility of the production of more than one creative philosophical idea, as can be seen by his reliance on Mehta’s self-reports above. Thus, although Seakgwa is not explicit about what marks the end of the context of discovery on this pathway, for current purposes of testing, I also recognize that one might have a number of iterations of the idea-generation/evaluation and justification cycle. Hence, this is a case where the context of discovery and justification “interpenetrate”³⁵ such that each round of idea generation represents the context of discovery and each round of evaluation and justification counts as a portion of the context of justification. The end of this cycle is thus the moment the final claim/argument that will be included in the philosophical text is first generated. After this, if Seakgwa (2017) is right, one should only find evaluation and justification.

out/produced. Thagard’s incident provides an example of the former, while the current study focuses on the latter. Also, see Dietrich (2004) for a similar distinction.

³⁴ For Seakgwa (2017) the link between creative intuition and high confidence is meant to play the role of the link between high fluency and high confidence (and thus high FOR) in non-creative intuitive judgements, since the multiple failures which precede creative intuition (at least on most accounts) or taking to negatively impact FOR. Also see Thompson and Wang (2019) for a clarification of the link between fluency, FOR and the probability of changing one’s mind once a judgement has been made.

³⁵ To use the words of Bowers et al (1990, p. 75)

On the basis of the above, one could make a number of predictions:

- 1) Failures, impasse and restructuring will precede the occurrence creative intuition produces
- 2) The occurrence of creative intuition will produce one main idea.
- 3) The idea produced by creative intuition will just have a claim (without supporting reasons) as its content, and ideas produced by heuristics/informal logical, will have an argument, claim argument or TE as its content.
- 4) In the case of creative intuition, the content of the idea produced will become the conclusion of the main argument in the philosophical text.
- 5) After creative intuition, only idea evaluation and justification will be carried out.
- 6) In the case of a philosopher following the heuristic based pathway, a period of cycles of idea generation and justification will be followed by a period of just idea evaluation and justification.

To operationalize and test these predictions, the final texts of the participants were analysed for arguments and cases/thought experiments. Once located, the protocols and other data were analysed in search of occurrences of the premises/conclusions and scenarios which make up these final philosophical products. I start with the voice recordings of participant 1 (session 1.5) as, given the results of our previous analyses, there is reason to believe that its contents were the products of creative intuition and according to Seakgwa this creative intuition marks the end of the context of discovery. Thus everything prior to and including Session 1.5 forms part of the context of discovery and everything thereafter forms part of the context of justification. The first step was carried out using the coding scheme present in Table 5 below:

Table 5: Coding scheme for arguments and thought experiments in philosophical texts:

Code criteria	Source	Example from the texts
Argument: Participant produces a task relevant claim and at least one reason	Aristotle	<ol style="list-style-type: none"> 1) The result is an essay making conclusions about answers to moral and political questions, requiring us to abandon moral intuitions, but based purely on reasoning from the philosophy of personal identity 2) It's the very same kind of approach that would lead one to scientism, i.e. we do philosophy on the basis that all knowledge claims

		<p>must be subject to empirical verification for instance</p> <ol style="list-style-type: none"> 3) But it is only when we approach scientism as being in conversation with epistemology for instance that we are able to see that the central tenet of scientism does not meet its own standard, i.e. it is not empirically verifiable 4) Approaching the different schools of philosophy as being in conversation with each other enriches the debate <p>(premises not numbered in the original)</p>
<p>Thought experiment:</p> <ul style="list-style-type: none"> • Participant reasons about a particular set of social and/or political circumstances, which may be specified in more or less detail. <p>And</p> <ul style="list-style-type: none"> • The reasoner's mode of access to the scenario is via imagination rather than via observation. <p>And</p> <ul style="list-style-type: none"> • Contemplation of the scenario takes place with a specific purpose: forming judgment about some polit- 	<p>Miscevic (2012, 2013 and 2014)</p>	<ol style="list-style-type: none"> 1) Perhaps a different example may come to our aid. W drives his car in an 80 km/h zone at a speed of 160 km/h. W's intention is not to crash the car and injure V. W does however crash his car into V's car. 2) A is in fact not driving the car at 160 km/h – this would be perfectly acceptable on the Autobahn where there is no speed limit. 3) In the 80 km/h zone however A is <i>creating the conditions in which the risk of injury to V is significantly higher.</i>

ically relevant theoretical proposal.		<p>4) And V may be the person in the Toyota, Nissan or the Honda – so V is potentially a victim.</p> <p>5) A therefore is the situation in which the risk of injury to V, whoever V might be, is significantly higher.</p>
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4.3.1 Potential Issues with the Scheme Above

- Both of the participants grouped their arguments³⁶ (which I will identify as A1, A2 etc) in clusters under separate headings. For instance, one of the headings used by participant 1 was “On Wrongs Committed against individuals” (p. 1), under which he includes A2- A4. Since all the arguments are included under a shared heading because they have similar if not identical conclusions, this created issues with the uncontroversial differentiation of arguments under the same headings. Thus, keep in mind that some of the products that are treated as stand-alone arguments could also be defensibly viewed as establishing sub-conclusions which go on to form premises in the subsequent arguments.
- There were also issues with differentiating examples from TE’s, since these both often involve imaginative episodes aimed at clarifying a judgement. On Miscevic’s account (about which more will be said in the next section), which is the one being operationalized here, design of thought experiments is exactly to illustrate an already formed judgement. Thus, the counterfactuals which participant 1 explicitly refers to as examples would be classed as rudimentary TEs using Miscevic’s nomenclature. They were therefore coded as TEs.

4.3.2 Tracking the Development of Philosophical Ideas

As stated above, for Seakgwa, at least for intuitive generated ideas, their content cannot exceed a mere claim, which then forms the conclusion of the argument presented in the philosophical text. Thus, on this model, ideas are the mental precursors of the orthographically represented arguments presented in philosophical texts. Seakgwa is sketchier about the content of heuristically generated philosophical ideas. I will thus treat them as having either claims, TEs or arguments as their content. With this in mind I used the coding scheme presented in Table 6 below to analyse the protocols to track the development of philosophical ideas into the arguments they form part of in the final texts. (Note that the notion of similarity used included lexical similarity and similarity in the conclusion being made or supported.)

³⁶ For analytical convenience all the products, even those which include TE’s, were treated as arguments, which could thus be decomposed into their constituent premises and conclusions. This was only done in order to allow tracking of these individual statements and their relations in the data. This should not be interpreted as a commitment to a thesis about the nature of thought experiments, such as Norton’s (1996, 2002, 2004) contention that thought experiments just are elaborately presented arguments.

Table 6: Coding scheme for tracking the development of philosophical ideas

Coding criteria	Source	Example
<ul style="list-style-type: none"> Participant generates a statement or set of statements identical or similar to those which form part of the arguments in philosophical texts. <p>Or</p> <ul style="list-style-type: none"> Participant generates a scenario which appears in the text, or similar to that which appears in the text. 	Seakgwa (2017)	<p>The example of a TE provided in the preceding section formed the product which was labelled A4. Using the criteria present here the segment of the protocol which reads:</p> <p>“Furthermore, it is perhaps more accurate to describe A as Morris has used it as creating injurious conditions rather than enactment of a specific act.”</p> <p>This would count as part of the development of A4 because it expresses the conclusion that TE was used to support.</p>


4.3.4. Insight sequence coding scheme:

The insight problems usually studied have required only a problem representation which includes the problem situation itself. The problem facing the participants in this investigation is production of text, and this requires understanding (i.e. building a representation of) and responding to the philosophical problem and answer to this problem provided by Morris. So, their problem representation must include a representation of the problem as presented in the task instructions, as well as an evolving representation of Morris’s text, along with the initial state, goal state and operators. Thus, in what follows I treat restructuring of the representation of Morris’s text form by the participant as subject to failure, impasse and restructuring as well and thus subject to the coding scheme below:

Table 7: Coding scheme for identifying insight sequence

Coding criteria	Source	Example
<p>Failure:</p> <ul style="list-style-type: none"> Inadequacy of idea/attempt: <p>Participant rejects an idea before actually carrying it out, because he or she finds fault in the construction or idea and believes it would not result in the successful solution of the problem.</p>	<p>Fleck and Weisberg (2004)</p> <p>Ohlsson (1992)</p>	<p>“Ok wait. I’m talking kak here man.”</p>
<p>Impasse:</p>	Fleck and Weisberg (2004)	No examples of this were

<p>Participant displays any one of the following:</p> <ul style="list-style-type: none"> • Generating the same solution two or more times. (does this apply here?) <p>Or</p> <ul style="list-style-type: none"> • Rereading the problem three or more times in succession. <p>Or</p> <ul style="list-style-type: none"> • Indicating that his or her mind is blank. <p>Or</p> <ul style="list-style-type: none"> • Indicating that he or she is out of ideas. <p>Or</p> <ul style="list-style-type: none"> • Indicating that he or she is confused about the problem <p>Or</p> <ul style="list-style-type: none"> • Demonstrating clear emotional frustration <p>Or.</p> <ul style="list-style-type: none"> • Demonstrating fixation <p>Or</p> <ul style="list-style-type: none"> • Discontinuing work on the problem—cessation of behaviour. <p>Or</p> <ul style="list-style-type: none"> • Discontinuing verbalization. <p>Or</p> <ul style="list-style-type: none"> • Not generating any additional solutions. 	<p>Ohlsson (1992)</p>	<p>found in the text.</p>
<p>Restructuring:</p>	<p>Fleck and Weisberg (2004)</p>	<p>“So what I would actually like</p>

<ul style="list-style-type: none"> • Elaboration: Participant adds information by studying the task instruction and/or assigned text and observing previously unnoticed features of the argument in the assigned article. <p>Or</p> <ul style="list-style-type: none"> • Reencoding: Participant must abandon or reject some component of his previously constructed situation model. <p>Or</p> <ul style="list-style-type: none"> • Constraint relaxation: A change in the mental representation of the goal rather than a change in the participant's understanding of the task or article. <p>(each of the above is to be applied to protocols of sessions following the initial read through of instructions and assigned text)</p>	<p>Ohlsson (1992)</p> 	<p>to do is to write a paper now I realize that part of the instruction is that I have four references and that is a little tricky because um Philosophy doesn't work that way if you can write a paper or let's say take an issue with logic of an author's paper um that's perfectly fine that is one way of doing Philosophy um and it's not necessary to rely on references to refer to someone else's work um".</p> <p>(the above is an example of constraint relaxation)</p>
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4.3.5 Potential issues with this coding scheme

- Here I've chosen to only count as failures those ideas the participants themselves explicitly reject as inadequate. But I suspect that defining failure in the philosophical context will prove to be quite contentious since it is an activity in which one deals with problems where the goal state is itself controversial.

4.3.6. Philosophical Idea Generation, Evaluation and Justification and Philosophical Text Production coding scheme

Table 8: Philosophical Idea Generation, Evaluation and Justification and Philosophical Text Production Coding Scheme

Coding criteria	Source	Example
Idea generation:	Seakgwa (2017)	“urm, so it's clear that he says,

<ul style="list-style-type: none"> • Appearance of p-creative ideas <p>Or</p> <ul style="list-style-type: none"> • Participant makes an attempt at p-creative idea formation. 	<p>Hajek (2014, 2018)</p> <p>Mehta (2016)</p>	<p>the first general principle that he sets out is <i>individual</i> wrongdoers. // Now... in some of these cases, like the North American Indians, Black Americans, that's institutionalised. Affirmative action is a response to an institutionalised wrong doing, or an institutionalised <i>wrong</i>.// So Apartheid is institutionalised.// I suppose you can look at <i>individual</i> wrongdoers, but that's, I don't think that, urm Black people, descendants of injured persons, back then, urm, I don't think that they ... take issue with <i>individual</i> wrongdoers, I think they take issue with the <i>system</i> and the products of the <i>system</i>".</p>
<p>Evaluation/ Justification:</p> <ul style="list-style-type: none"> • Participant makes statements about the quality of ideas/arguments already generated <p>Or</p> <ul style="list-style-type: none"> • Participant makes statements which constitute reasons in support of ideas already generated 	<p>Seakgwa (2017)</p>	<p>(The following statements are given in support of the idea above):</p> <p>“Let's us reflect on the requirement to consider only individuals for the purposes of this paper.// People rely on the specific, //no they don't.// In many cases, in most cases descendants have no clear idea as to who or what they ancestors were other than being members of the same injured, being the original members of the injured. //While the people rely on being native American yeah, people rely on being native American or being black etc in order to substantiate claims to justice by side stepping all these issues and focusing merely on the individual cases it would seem that Morris is not addressing a significantly large amount of people</p>

		to claim for rectificatory justice. //Uhm in fact one would not be asking the trivial question if one asked who exactly is Morris targeting?"
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4.3.7 Results:

Table 9: Number of philosophical products present in each participant's final text

	Arguments	Thought experiments	Total
Participant 1	6	4	10
Participant 2	7	1	8

1) Unfortunately, the data regarding the task-directed activity of participant 1 is apocryphal due to the data collection mishap already addressed. Thus, what is reported below refers to what can be observed in the data that is available:

- No evidence of failures was found before participant 1 experienced creative intuition in session 1.5. But numerous failures can be observed after this.
- No evidence of the occurrence of impasse was found either.
- There is, however, evidence of the occurrence of incubation, as the participant reports that the ideas recorded in session 1.5 occurred while he was playing with his child.
- There is no evidence of restructuring before the occurrence of creative intuition. But before text construction, one instance of constraint relaxation can be observed.

Thus, all but the prediction of the occurrence of incubation before creative intuition have been disconfirmed.

2) Neither participant indicated that one of the products was their text's main argument. In the case of participant 1 this violates the prediction of Seakgwa (2017), since creative intuition was predicted to result in only one claim. In the case of participant 2 the occurrence of more than one idea is in line with line with what Seakgwa (2017) predicts for the informal logical analysis/heuristic-based pathway.

3) The content of the creatively generated ideas was mixed, not just a claim. Participant 1 produced 4 such ideas, which became part of A3, A4(TE), A5(TE), A6 (TE) and A9, with one of the 4 ideas becoming part of A3, A4, and A5. None of them are just an isolated claim as reported by Thagard (2014) and predicted by Seakgwa (2017). The idea which evolves into A9 is generated as a question, and thus does not constitute a claim. The rest emerge with accompanying thought experiments. Thus, Seakgwa's prediction about the content of the idea when it first emerges was disconfirmed.

4) The idea which comes to form part of A3 has shed the TE that originally formed and develops to form a premise in an argument that relies on an appeal to a real historical example. The remaining ideas each shed the TEs they were already accompanied by and come to form conclusions to arguments based on other TEs. Since Seakgwa put forward a hypothesis about all products of creative intuition,

this constitutes a falsification of that prediction. But, in most cases, part of this original content does go on to form the conclusion of an argument in the final text.

5) Evidence of the occurrence of idea generation after the occurrence of creative intuition was found. This falsifies the prediction of Seakgwa or Hajek. This also points to the further development of an idea selection system, since it seems (perhaps given that the intuitive idea arises with the confidence appropriate to a sincere question and without affective accompaniment) that having been generated via creative intuition is a sufficient condition for selection for inclusion in the final text—see for instance the cost-benefit analysis in vid 9. This raises the possibility that all the main ideas were generated by creative intuition – so perhaps the only mistake was postulating one main idea—not that that would be the terminus of discovery.

6) Evidence of idea generation and reading/situation model construction cycles was found, rather than the idea-generation and justification cycles as predicted by Seakgwa. Participant 2 only started the justification phase when the writing process was initiated.³⁷

4.4 Testing Miscevic on the Stages of Political-Philosophizing

In this next round of analysis, I will be testing predictions derived from Miscevic (2012, 2013 and 2018), specifically regarding the aspect of the model which represents the stages of thought experimentation. According to Miscevic (2012) there are up to 8 stages of thought experimenting which I detailed earlier. However, in Miscevic (2018) this total shifts to 6. Despite this change, the first 4 stages, what Miscevic (2018) calls “the core TE”, remain constant. And since these are “core” in the sense that they are postulated to be essential to the thought experimenting enterprise, while the later stages are optional, these are what I will focus on in the analysis to follow. More specifically, what will be of particular interest are the two of these (stage 2 and stage 4) which are likely to be observable in the protocols, since they are posited to be completely conscious.

Before we can begin deducing predictions from the model, we need to say a word regarding the need to “translate” it into a form more readily testable against the data available. Miscevic conceives of the thought experiments as occurring in the context of a dialogue with “two persons, the experimenter and the subject” (2018, p. 168). Miscevic’s model thus needs to be “translated” into a form where the predictions derived from it can be confirmed/disconfirmed given the lack of dialogue in the task assigned in this investigation. To do this, I follow Geisler (1991, 1994) in her contention that one can look at philosophical texts as forming part of a conversation (either with other philosophical authors, or the reader), with the reading of the text by a fellow philosopher being equivalent to the author’s conversational turn. We can thus view the process of Morris’s text being read as his conversational turn, in which he plays the role of experimenter (at least in those passages where he presents thought experiments)³⁸.

³⁷ Given the rushed nature of participant 1’s task completion, this may not be a realistic representation of the process as it would naturally occur.

³⁸ This focus on dialogue is indicative of Miscevic’s focus on what Geisler would call the “virtual experience” (1994, p.19) constructed by philosophical authors for their readers. For instance, it is unlikely that Plato was actually reporting on dialogues which had occurred, rather than using a literary technique. As she puts it “one way to look this is that the necessarily crooked path of rhetorical invention becomes straightened for the purposes of presentation and persuasion” (ibid.). Thus, the virtual experience creates a false impression of the process by which the content of a philosophical text was produced. It is thus puzzling that Miscevic uncritically relies on this illusion in order to develop his model of the actual cognitive processes and stages involved in thought experimentation.

We also have to address a tension between Miscevic's characterization of the thought experimentation as quoted in the previous section and his dialogical understanding of the process. Recall that in his characterization of TEs, Miscevic stipulates that for the imagining of a scenario to count as one, the "contemplation of the scenario [must] take place with a specific purpose: forming judgement" (2013, p 52). This, however, only seems to apply to the subject and not the thought experimenter himself, although Miscevic does not explicitly clarify this point. This asymmetry seems to be confirmed by Miscevic's (2018) addition of "stage 0" (p. 168) to his model. According to Miscevic, in this stage the experimenter "[formulates] her design" (*ibid.*). To illustrate this he uses the example of a colleague who is trying to get him to stop lauding his superior expertise over the rest of his colleagues, and he describes the experimenter's thought process in stage 0 in this example as aiming to "show to [him] that [he] should not humiliate [his] colleagues, and she wants to do this by asking [him] to imagine switching the role with a colleague, call him Jack" (2018, p 168). On this model then, far from entertaining a thought experiment to form a judgement, the thought experimenter has an existing judgement that she is looking to persuade the subject to accept, and this guides the construction of the subsequent TE.

Seakgwa, following Hajek, emphasizes a different initial state of the experimenter. For them TEs can act as aids in judgement formation, even for the experimenter. Although they do not deny that it is possible for the philosopher to first form a judgement in the way Miscevic suggests. A starker contrast exists between Miscevic and Cappelen (2012) on this issue. Cappelen, on the basis of a sample of case studies (n=10), makes (admittedly preliminary) generalizations regarding TEs, including the claims that: "the function of philosophical cases is to raise a range of questions about some philosophically significant features of the world. (Contrast this with the idea that their function is to answer questions.)" (p. 188). He also claims that:

Good philosophical cases are puzzling: They are difficult and challenging and so we hardly ever conclusively settle on one answer to the various questions raised by a case. (Contrast this with the view that even though the goal of philosophy is to answer extremely hard questions, we have a relatively simple and non-theoretical starting point: judgments about cases. This is a mistake—the judgments about cases are as hard as the 'big' questions we try to answer.) (p.189).

These statements seem to suggest, contra Miscevic, that TEs precede definite judgements about them or the phenomena in the world they help us investigate, even from the point of view of the experimenter.

The final important issue to note concerns Miscevic's distinction between stage 2 and 3 of the thought experimentation process. According to Miscevic, in stage 2 of this process, "the subject, come[s] to understand the question [which was posed by the experimenter]" (2018, p. 168), and then at stage 3 "comes the tentative production, 'modelling' of the scenario" (*ibid.*). But if we follow the consensus in the discourse processing literature and the role of situation models discussed earlier, then we must accept that to understand a piece of discourse *is* just to construct a model of the situation that discourse describes. I will thus merge Miscevic's stages 2 and 3 in the analyses that follow.

From all this, we can derive the predictions that:

- 1) Thought experiments will be constructed after forming a judgement.
- 2) When TEs are constructed or attended to, this process will unfold in at least 4 stages as outlined above (with clear evidence of this for at least the 2 unambiguously conscious stages).

Although I also recognize the need to test Miscevic’s predictions regarding mental modelling and simulation in the cognitive realization of these experiments, I do not think that this can be adequately accomplished using the current methodology. This is because, despite there being a number of think-aloud studies of mental modelling and mental simulation (e.g. Jonassen 1995, Clement 1991, Baldachinno et al 2014), and thus various existing codes designed to capture these phenomena, there is considerable overlap between the codes for mental modelling and mental simulation, with some (like Clement 1997) treating them as identical. This makes it difficult to differentiate these two phenomena based on protocol data, and precisely differentiating them is exactly what would be needed to test Miscevic’s hypotheses. Thus, I think that Miscevic’s predictions incorporating these constructs should be tested by other means (although I will gesture at a few places where the analysis I do run can illuminate these issues).

To test the predictions above, I will start by identifying the TEs in Morris’s article, as well the participant constructed TEs in the final texts and the protocols. In order to test prediction 1, I will check the protocols to see if the judgements which follow the constructed TEs can be found before the construction of those TEs are actually constructed. If yes in all cases, I will deem Miscevic’s prediction supported, if not it will be treated as disconfirmed. In order to test the second prediction, I will check for signs in the protocols that indicate that Morris’s TEs prompted at least the stages Miscevic postulates are conscious (and thus should be verbalizable). Below in Tables 10 and 11 are the coding schemes that will be used:

Table 10: Coding scheme for TE in Morris and constructed by participant

Coding criteria	Source	Example
<p>Thought experiment</p> <ul style="list-style-type: none"> Participant reasons about a particular set of social and/or political circumstances, which may be specified in more or less detail. <p>And</p> <ul style="list-style-type: none"> The reasoner’s mode of access to the scenario is via imagination rather than via observation. <p>And</p> <ul style="list-style-type: none"> Contemplation of the scenario takes place with a specific purpose: forming judgment about some politically relevant theoretical proposal. <p>Note that the In the case of TEs in Morris’ article this last point means a claim being stated before or after the presentation of a counterfactual scenario.</p>	<p>Miscevic (2012, 2013 and 2018)</p>	<p>1) Perhaps a different example may come to our aid. W drives his car in an 80 km/h zone at a speed of 160 km/h. W’s intention is not to crash the car and injure V. W does however crash his car into V’s car.</p> <p>2) A is in fact not driving the car at 160 km/h – this would be perfectly acceptable on the Autobahn where there is no speed limit</p> <p>3) . In the 80 km/h zone however A is <i>creating the conditions in which the risk of injury to V is significantly higher.</i></p> <p>4) And V may be the person in the Toyota, Nissan or the Honda – so V is potentially a victim</p> <p>5) A therefore is the situation in which the risk of injury to V, whoever V might be, is</p>

		significantly higher.
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4.4.2 Table 11: Coding scheme for stages of TE

Coding criteria	Source	Example
Stage 2 (Understanding /tentative conscious production): <ul style="list-style-type: none"> • TE appears in protocol (thus evidence that it was attended to). <li style="text-align: center;">Or • Slow reading of TE <li style="text-align: center;">Or • Reflection on TE in which the elements of the TE and the relation of element are clearly stated or non-verbal evidence like slowly moving the cursor over the relevant section of text and/or repetition of the description of the situation attending to elements and the relation between them) <li style="text-align: center;">Or • Long silent pause after reading TE 	Miscevic (2012, 2013 and 2018)	“For what happens when both Wi and V are dead?” //(Reads silently)// "Vn is made worse off as a consequence of the act..." (Reads silently)// "Wi wrongly <i>harms</i> victim i", mm. //(Reads silently).
Stage 4 (immediate spontaneous answer): Participant verbalizes positive or negative reply to TE	Miscevic (2012, 2013 and 2018)	Yeah, okay...

4.4.3 Results

1) To start with, Table 10 below contains the frequency counts of all the TEs which appear in each participants protocols and final text:

Table 12: Number of TEs in the protocols and final texts of each participant

	TE in protocols	TE in final texts
Participant 1	10	4

Participant 2	2	1
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4.4.3.1 Participant 1's TE Generation

A4: The TE which is represented in statements 1-5 of A4 was first generated in session 3 (video 7). However, the second last premise and conclusion of the argument, premise 6 and 7 are first generated by creative intuition in session 1.5. Thus, this is a case where judgement precedes the TE.

A5: The TE which is represented in statements 1-2 of A5 first appear in session 5 (video 10). The conclusion, however, is a variation of an idea generated via creative intuition in session 1.5. It seems informal analysis was performed on an existing intuitively generated representation. Thus, this is a case where judgement precedes the TE.

A6: The TE which is represented in statements 1-4 first appear in session 6 (video 11). The conclusion, however, was generated by creative intuition in session 1.5 and was initially supported by a different TE. Thus, this is a case where judgement precedes the TE.

A7: The TE first appears in session 5 (video 9). The conclusion first appears in session 2 (video 3) supported by a different thought experiment. Thus, this is a case where judgement precedes the TE.

4.4.3.2 Participant 2's TE Generation

A1: The TE first generated in session 2 (video 2). The final version appears later in the same session (same TE). Thus, this is a case where judgement precedes the TE.

Since in all instances the thought experiments were only formed after the relevant judgement, these results conform to Miscevic's predictions.

It should be noted however, that all these results are not necessarily at odds with Cappelen's claims. For instance, A1 of participant 2 shows that the judgement in question can take the form of affirming that the case induces puzzlement as Cappelen describes. However, this puzzlement also precedes the actual case, which Cappelen is at least unclear about, if not flatly in disagreement with.

2) Morris's article contains 7 thought experiments in total. These were attended to 37 times (in total for both participants). The number of times each participant attended to Morris's TEs is recorded in Table 13 below:

Table 13: Frequency of attention to Morris' TEs

	Number of times Morris's TEs were attended to
Participant 1	29
Participant 2	8

4.4.3.3 Participant 1

Of the 29 times participant 1 attended to Morris's TEs, only 7 instances were accompanied by evidence of the stages predicted by Miscevic. Although, this number is low, only accounting for 31% of the total number of times the participant attended to Morris's TEs, these instances all seem to have occurred when each TE was first encountered, probably because thereafter that the models were already stored in memory.

Interestingly, participant 1 showed increasing disagreement with Morris's judgements reading the TEs over successive readings, even where he had previously expressed agreement. It is unclear that

Miscevic's model can accommodate this change in response. Since Miscevic ascribes these judgements to an automatic intuitive response to the consciously constructed model, unless there is a change in the model the response presumably remains stable.

4.4.3.4 Participant 2

Of the 8 times participant 2 attended to Morris's TEs, 5 instances were accompanied by evidence of the stages predicted by Miscevic. Some thought experiments may not have been attended to at all, and only the judgements passed by Morris on these seem to have been noted. It is possible that these may have been attended to but this was not verbalized in protocols. Ones that were attended to were accompanied by evidence of Miscevic's stages.

These findings thus support Miscevic's predictions about the stages of thought experimenting.

Regarding the link between first-person TEs and modelling and third-person TEs and simulation, on a cursory classification of the constructed TEs into first person and third person groups, it seems that some of the first person thought experiments (at least when relying on the use of first-person pronouns to identify them) did not seem to involve the kind of perspective taking Miscevic has in mind.

4.5 Idea Generation Mechanisms

The final stage of analysis that I will now undertake will aim to identify the mechanisms responsible for the generation of the ideas identified above. This will allow us to test the predictions made by Seakgwa and Miscevic about what these mechanisms will be. As covered in the literature review, Seakgwa postulates three mechanisms which act as operators, in that their implementation during task performance leads to the transition from some current state of the thinker to a state closer to her goal³⁹. The mechanisms singled out by Seakgwa are informal and formal logical analysis, philosophical heuristics and creative intuition. The model specifically emphasizes the role of these mechanisms as operators which allow the transition of the philosopher from her initial state toward the achievement of the sub-goal of generating an idea(s) (with text production as the goal state)⁴⁰. As mentioned in an earlier section, Miscevic (2013) also isolates three mechanisms he claims are the "sources" of political philosophical theorizing. These are intuitions elicited in response to thought experiments, general ethico-political principles, and facts along with explanations based on and incorporating them.

Although the mechanisms postulated by these two models are *prima facie* distinct, there is reason to suspect that these models overlap, or certain mechanisms postulated by the one can be reduced to a mechanism or set of mechanisms postulated by the other. For instance, Seakgwa 2017 mentions in passing that the method of cases seems to be undergirded by the "look near extreme cases" heuristic⁴¹. Hajek also explicitly mentions many of the heuristics in connection to the method of cases, this is

³⁹ In other some other areas where the detailed modelling of the process of completing some task is important, such as human-computer interaction, the GOMS (Goals, Operators, Methods, Selection Rules) model is used to conceptualize and represent the processes of interest. What is of interest for our purposes is the distinction made here between methods and operators, where methods are procedures for accomplishing a goal (e.g. accessing Wikipedia might would be a method if one's goal was to find a specific piece of information), and operators are more basic cognitive and/or perceptual operations which allow the agent to alter its mental state (e.g. move eyes to URL field, retrieve relevant URL from long term memory). Miscevic and Seakgwa both do not employ this kind of distinction, and thus although it might have been helpful in running the analysis to follow, I ignore it as well.

⁴⁰ Although our current focus is on the use of these mechanisms in idea generation this is not to deny that they are also useful in the other stages of the process of philosophizing as well.

⁴¹ See footnote 11 on page 17 for the full observation.

even evident in the names of some of the names he assigns to the heuristics, such as the “Check extreme *cases*” (my emphasis) heuristic. Thus, in the subsequent analyses, I, following Hajek, also think of many of the heuristics as aimed at assisting in the search for cases by reducing the search space.

Unfortunately, the exact nature of the relations between the various mechanisms has yet to be rigorously explicated. Given this uncertainty, I think it is hasty to posit a straightforward disjunction between the mechanisms postulated by Miscevic and those proposed by Seakgwa such that one can neatly disentangle successful predictions of the one from the other in all cases regarding idea generation, allowing confirmation of the predictions of one and not the other. In the analysis I will therefore combine the codes for all these into one coding scheme and see if there are idea generation mechanisms which this joint scheme cannot capture, thus focusing on mechanisms that both models do not predict. This avoids the problems of being unable to neatly delineate competing predictions. This is not to deny that, in some instances, a neat delineation can be made between what is predicted by one and not the other. For instance, we have already shown that Seakgwa makes a successful prediction regarding the occurrence of creative intuition during the process of philosophizing, that cannot be derived from Miscevic’s model. The same can be said about the correct predictions by Miscevic regarding thought experimentation that, while not incompatible with Seakgwa’s model, cannot be derived from it.

Despite the lack of an existing thorough treatment of the relation between the two models to be tested and the employment of the aforementioned strategy to navigate this terra incognita, it is still crucial that some provision be made for handling the overlap that can be foreseen (e.g. procedures for coding segments of data which meet the coding criteria for numerous codes). It is to the detailing of such provisions that I now turn.

4.5.1 Foreseeable Overlap Between Seakgwa and Miscevic’s Models

4.5.1.1 Informal Analysis and Principles

To deal with the possible overlap between informal analysis and principles in Miscevic, I will code a segment as representing informal analysis if it contains both:

- Evidence that argument schemas, fallacies and other argumentative phenomena often studied in the field of informal logical analysis were invoked.
- Signs of the specific reference to general ethical principles in the protocol or final philosophical text (e.g. if the principle is used as a premise in argument explicitly meant to fit one of the schemas fitting the above description, or to expose a fallacy).

I will code the segment as only one of them if only the criteria of one is met.

4.5.1.2. Philosophical Heuristics and TEs

Now on to the possible overlap between the philosophical heuristics as described by Hajek (2014; 2016 and 2018) and endorsed by Seakgwa (2017); and the TE as presented in Miscevic (2012, 2013 and 2018). A segment will be coded as both evidence of heuristic use and a TE, if there is both:

- Evidence of the occurrence of a heuristic that Hajek has characterized as possibly useful in the search for cases (these are marked as such in the coding scheme below).

- Evidence which suggests that the heuristic played a role in process of the generating a thought experiment (e.g. the thought experiment chosen/constructed reflects the use of the heuristic, or context otherwise suggests a connection).

I will code a segment as just heuristics or just TE if only the criteria for either one is met.

4.5.1.2. Informal analysis, and Facts and Explanations

Regarding possible overlap between informal analysis and facts/and explanations, I will code a segment as both if:

- The participant includes facts in the premises of an argument explicitly structured to fit one of the schemas referenced above and the coding scheme below.
- Fact is used to assess the truth of a claim, or to expose a fallacy.

I will code a segment as only one or the other if only the criteria for one of them is met.

4.5.1.3 Heuristics and Facts and Explanations

A segment will be coded as both an occurrence of heuristics and an appeal to facts/explanation, if:

- There is an argument which shows signs of being produced by a heuristic
- The argument has facts/explanations as one or more of its premises.
- It will be coded as only one if evidence for only one is present.

4.5.1.4 Heuristic and Principles

A segment will be coded as both an instance of heuristic use and an appeal to general ethico-political principles if:

- It represents an argument or TE that has a principle as a premise.
- This argument or TE shows signs of being constructed by use of a heuristic.

If evidence for only one code is evident, it will be coded as only that one.

4.5.1.5 Inter-heuristic Overlap

Overlap within the set of philosophical heuristics will be handled by merging codes if the criteria for two or more of them are found to be identical in practice. If one segment satisfies the criteria for two or more non-identical heuristics then it will be coded as the one with more steps if the process of completing a longer one entails completing another short one. If both of the overlapping heuristics have the same number of steps the segment will be coded as both. If only evidence for one is present, the segment will be coded accordingly.

Below I will now discuss overlaps involving creative intuition. Please note that in order for an idea/argument/product to be coded as intuitively generated it must have been reported in the recording mentioned earlier in the analyses.

4.5.1.6 Unconscious Heuristics and Creative intuition

It is also possible for (unconscious) heuristics to co-occur. A segment will be coded as both heuristically and intuitively generated if:

- The product of creative intuition shows signs of heuristic usage.

It will be coded as only one if only evidence for one is present.

4.5.1.7. Creative Intuition and TEs

A segment will be coded as both an instance of creative intuition and a TE if the product it contains:

- Meets criteria for the TE classification.
- Was intuitively generated.

It will be coded as only one if only evidence for one is present.

4.5.1.8. Creative Intuition, and Fact and Explanations

A segment will be coded as both an instance of creative intuition and an appeal to facts and explanations if:

- An argument/claim is generated via creative intuition.
- The argument has a fact as a premise.

It will be coded as only one if only the criteria for one of these codes are met.

4.5.1.9. Creative Intuition and Principles

A segment will be coded as both an instance of creative intuition and an appeal to a general ethico-political principle if:

- An argument/claim is generated via creative intuition.
- The argument has such a principle as a premise.

It will be coded as only one if only the criteria for one of these codes are met.

In the analysis to come the same logic will be followed if more than two codes are found to overlap when attempting to use them⁴².

4.5.2 Predictions

From the above we can deduce that:

- 1) Seakgwa (2017) and Miscevic (2012, 2013, 2018) predict that all creative philosophical idea generation can be accounted for by the mechanisms of creative intuition, logical analysis and philosophical heuristics (from Seakgwa), and/or intuition in the method of cases, general ethical legal principles, and presumed facts in combination with explanatory theories (from Miscevic).

This prediction also permits the overlap explicated above.

⁴² Although formal logical analysis can already be seen not to have occurred (despite Participant 2's knowledge of such techniques), one can see how this could overlap with all the coding categories just mentioned. For instance, if the product generated by any of these possible combinations of categories, if the product was represented using formal notation of some sort.

4.5.3. Idea Generation Mechanisms

In Table 14 below is the coding scheme used for identifying the creative idea generation mechanisms used by the participants in their protocols. Note that where no examples of a code were found in the protocols, I use the examples provided by Miscevic or Seakgwa (or the theorists they rely on):

Table 14: Coding scheme for idea generation

Criteria	Source	Example
<p>Formal and informal logical analysis:</p> <p>Formal:</p> <ul style="list-style-type: none"> • Uses formal apparatus to analyse claims, thought experiments <p>Or</p> <p>Informal</p> <ul style="list-style-type: none"> • Participant makes explicit mention of argument forms/structure (e.g by invoking concepts of modus tollens etc) and/or properties of these form/structures and such as validity soundness, truth strength or cogency <p>Or</p> <ul style="list-style-type: none"> • Evidence suggesting attending to arguments and/claims and evaluating them by entertaining objections and disputing or excepting them by further 	Seakgwa (2017)	<p>(Reading from Morris's text) "Whatever the measure... relevant to the matter of <i>rectificatory</i> justice, for the latter notion is <i>backward</i> looking..." //Okay, well that is true, once you start thinking about welfare maximising, then it's easy to lose sight of the <i>past</i>!! Then the past gets corrected, but in a <i>contingent</i> way, not by logical, sort of moral link.//</p>

argument (even if enthymemic)		
Death by diagonalization (AKA reflexivity/self- reference) (assists with informal logical analysis): Participant takes a philosophical thesis, and makes it refer to itself, or appeals to self-referential cases. (Hajek 2014, p. 13)	Hajek (2014)	“Realism is often stated as a thesis of mind-independence: ‘to be a realist about X is to be committed to the mind-independence of X. But what about realists about <i>minds</i> , as most of us are? They are surely not committed to minds being mind-independent.” (Hajek 2014, p. 14)
Proves too much: “By parallel[ing] [the] reasoning to [an existing] argument... [the participant] reach[es] an obviously false conclusion” (p.308)	Hajek (2018)	By that logic, we're all the incredible beneficiaries of, I don't know, Second World War, 'cause I'm sure without it, my mom and dad would have shagged five seconds later and then I wouldn't have been born, but someone else.
General principles of general ethico- political kind: •The participant references a general ethico- political kind And/or •Produces an argument or TE that has such a principle as a premise.	Miscevic (2012, 2013 and 2018)	Miscevic (2013) refers to the Golden rule as an example.
Facts and descriptive explanations: •Participant	Miscevic (2012, 2013 and	urm, so it's clear that he says, the first general principle that he sets out is <i>individual</i> wrongdoers.// Now... in some of these cases, like the North American Indians, Black Americans, that's institutionalised. Affirmative action is a response to an

refers to facts and/or explanations Or • Participant produces an argument or TE with facts and/or explanations as one or more of its premises	2018)	institutionalised wrong doing, or an institutionalised <i>wrong</i> .// So Apartheid is institutionalised.// I suppose you can look at <i>individual</i> wrongdoers, but that's, I don't think that, urm Black people, descendants of injured persons, back then, urm, I don't think that they ... take issue with <i>individual</i> wrongdoers, I think they take issue with the <i>system</i> and the products of the <i>system</i> .
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- Hajek's inclusion of analogical reasoning introduces an explicit overlap with the mechanisms identified by Welling (2007) which underlie creativity more generally. If Welling is to be believed, all the mechanisms identified in the coding scheme above should be reducible to the mechanisms he identifies.
- I have omitted creative intuition and TEs from the above scheme as occurrences of these phenomena have already been exhaustively identified

4.5.4. Results

Before I address what the results showed about the prediction made, I will start by using the data to address the co-occurrence issues addressed above. Table 15 shows the of co-occurrences of the codes derived Miscevic and Seagwa:

Table 15: Co-occurrences of Mechanisms Predicted by Miscevic and Seagwa

	TE	Facts and explanations	TOTALS:
Detecting and responding to arbitrariness	1	0	1
Informal and formal logical analysis	3	0	3
Analogical reasoning	0	0	0
Proves too much	0	0	0
Creative intuition	1	0	1

Each of the values above indicates the number of times a protocol segment (representing a philosophical product) was coded as both an instance of the code labelled in the row and the one labelled in the column.

As can be seen there were a number of instances of heuristic and TE overlap, TE and informal analysis overlap, as well as an TE instance of TE and creative intuition overlap.

Thus, there were unforeseen co-occurrences between informal analysis and TEs that the analysis brought to light.

1) For each participant I will report the findings by giving a brief account of mechanism(s) by which each philosophical product which appears in the final texts was generated and which mechanisms played a role in the modification of this initial idea to the version of it which appears in the philosophical text. In these accounts I will include the coding categories of initial intuition which I

have already introduced and a new category called heuristically unassisted search which I will say more about below. I start the report on each participant by presenting a network representing the process of all the product construction for each participant (in Figs 4 and 6). And I will end the report on each participant with a network representing a more detailed account of this construction process of one product from each participant (in Figs 5 and 7).

4.5.4.1. Participant 1

Below, in Fig 4 is a visual representation of the generation and development of the ideas which are included in the final text by participant 1, followed by a textual description of the process for each idea:

Figure 4: Network representing the generation and development of ideas by Participant 1

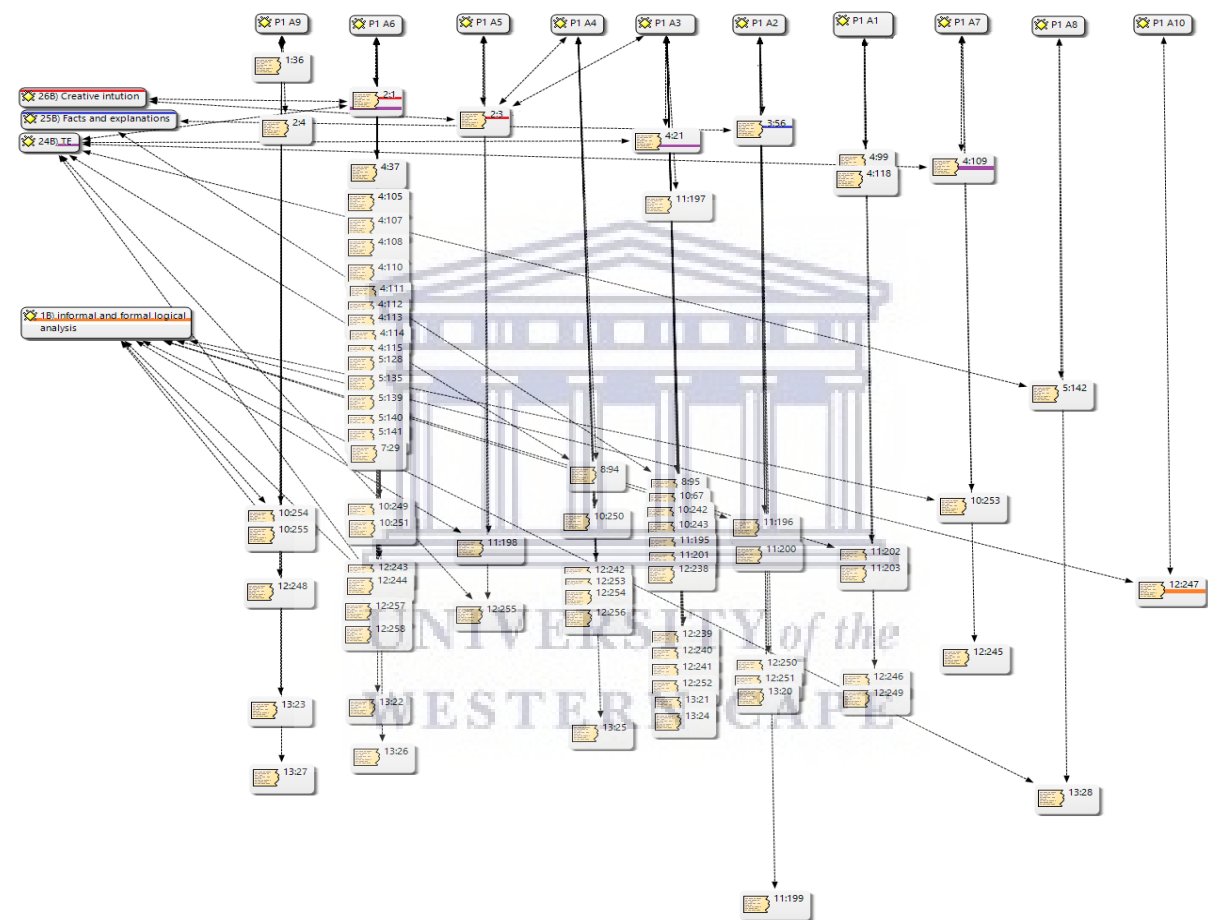


Fig. 4: In the network above, the first occurrence of the ideas and the mechanisms which produced them have been colour coded for ease of identification. The products have been placed in the order in which they first appeared (with time running from left to right). The icons representing the segments in the text in which the relevant product occurred are numbered according to the video in which they were found (with the voice recording reporting the products of creative intuition counted as text 2) and the number of the line in the transcript of that video in which the idea starts. These icons are arranged according to the order in which they occurred with time axis running from top to bottom.

A1: The conclusion of argument one (A1) was first generated by initial intuition in session 2 (video 3) and the first reasons given supporting it were constructed by conscious search and informal logical analysis (in the same video). The supporting premises that appear in the final text were different from

those first given but were also formed by informal logical analysis and analogical reasoning in session 5 (video 10).

A2: Although the participant himself mistakenly attributes the first formation of A2 to creative intuition, it in fact first appears in session 2 (video 2), generated by an appealing to facts. The final version of the argument only appears in session 5 (video 10), via informal analysis (only undertaken once the participant already the process of writing).

A3: The conclusion of A3 generated by creative intuition in session 1.5 but the premises that support it in the final text first appear in session 3 (video 7). They take the form of an appeal to facts (about actual cases), where the actual case was retrieved from memory by a heuristically unassisted search for counter examples.

A4: The TE which is represented in statements 1-5 of A4 was first generated in session 3 (video 7) by heuristically unassisted search. However, the second last premise of the argument, premise 6 was first generated by creative intuition in session 1.5

A5: The TE which is represented in statements 1-2 of A5 first appears in session 5 (video 10) and is generated by heuristically unassisted search. The conclusion, however, is a variation of an idea generated via creative intuition in session 1.5. It seems informal analysis was performed on an existing intuitively generated representation, which resulted in the generation of an objection which was then led to the search mentioned above.

A6: The TE which is represented in statements 1-4 first appear in session 6 (video 11), generated by informal logical analysis. The conclusion, however, was generated by creative intuition in session 1.5 and was initially supported by a different TE.

A7: The TE first appears in session 5 (video 9) and is generated by informal logical analysis. The conclusion first appears in session 2 (video 3) supported by a different thought experiment which was generated by heuristically unassisted search.

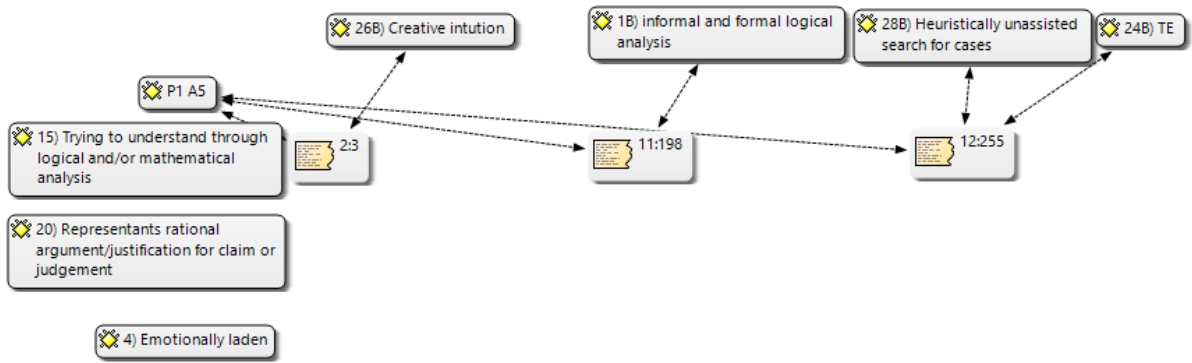
A8: A8's conclusion first appears in session 3 (video 4). It was generated by initial intuition, and accompanied by an elaborate attempt at thought experimentation which failed. Its first developed appearance occurs in video 12, where the supporting premises are generated by informal logical analysis.

A9: A9 is interesting in that it seems that it makes its first appearance in session 1 (video 1) and then again in the voice record. These vaguer antecedents do not yet amount to any of the statements which appear in the final version in the text. Rather they simply share content which suggests the beginnings of an application of the "proves too much" heuristic to Morris' argument. These are more specific than other examples of initial intuition seen so far, but are still not a fully-fledged claims or objections. In session 5 (video 9) we see the first full appearance of the argument generated by informal logical analysis.

A10: A10's conclusion can be interpreted as a sub-conclusion to a different argument with the same conclusion as A9, and thus has a similarly initial-intuition-driven origin in session 1 and 1.5. The first full version first appears in session 6 (video 11), generated by informal logical analysis.

Below, in Fig 5 is a visual representation of the generation and development of A5 by participant 1:

Figure 5: Network representing the generation and development of A5 by Participant 1

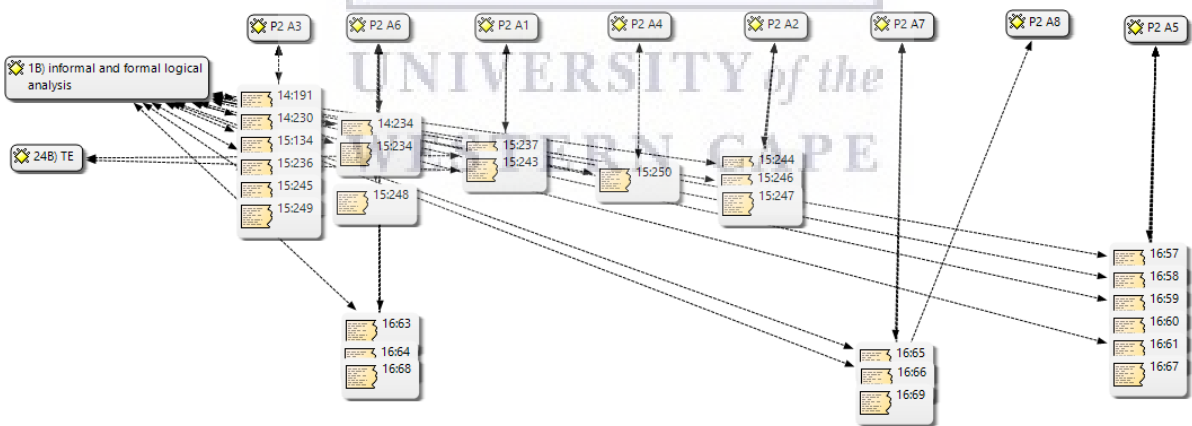


The icons, representing the segments in the text in which the relevant product occurred, are numbered according to the video in which they were found and the number of the line in the transcript of that video in which the idea starts. These icons are arranged according to the order in which they occurred with time axis running from top to bottom. I have also included the codes from Baldacchino et al's scheme which co-occur with the product being represented, as these offer a finer grained account of the cognitive, perceptual and physical operations which played a part in product construction. These codes are listed in the order in which they occurred (with time running from top to bottom). This network does not indicate the segments of the protocols these finer grained codes were associated with.

4.5.4.1 Participant 2

Below, in Fig 6 is a visual representation of the generation and development of the ideas which are included in the final text by participant 2, followed by a textual description of the process for each idea:

Figure 6: Network representing the generation and development of ideas by Participant 2



The products have been placed in the order in which they first appeared (with time running from left to right). The icons representing the segments in the text in which the relevant product occurred are numbered according to the video in which they were found and the number of the line in the transcript of that video in which the idea starts. These icons are arranged according to the order in which they occurred with the time axis running from top to bottom.

A1: The TE was first generated in session 2 (video 2) by heuristically unassisted search. The final version appears later in same the same session (unaltered).

A2: A2 first appears in session 2 (video 2), and was generated by informal logical analysis. No major changes are made before its final appearance.

A3: A3 first appears in session 1 (video 1), and was generated by informal logical analysis. No major changes are made before its final appearance.

A4: A4 first appears in session 2 (video 2), and was generated by informal logical analysis. No major changes are made before its final appearance.

A5: A5 first appears in session 2 (video 3), and was generated by informal logical analysis. No major changes are made before final appearance.

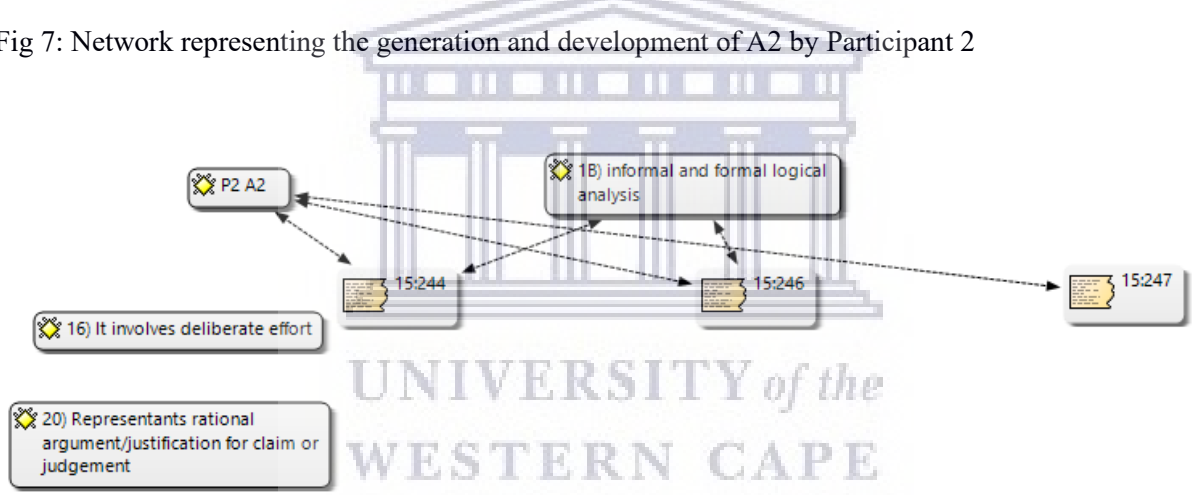
A6: A6 first appears in session 1 (video 1), and was generated by informal logical analysis. No major changes are made until before its final appearance.

A7: A7 first appears in session 2 (video 3), and was generated by informal logical analysis. No major changes are made before its final appearance.

A8: A8 first appears in session 2 (video 3), and was generated by informal logical analysis. No major changes are made before its final appearance.

Below, in Fig 5 is a visual representation of the generation and development of A5 by participant 1:

Fig 7: Network representing the generation and development of A2 by Participant 2



The icons representing the segments in the text in which the relevant product occurred are numbered according to the video in which they were found and the number of the line in the transcript of that video in which the idea starts. These icons are arranged according to the order in which they occurred with time axis running from top to bottom. I have also included the codes from Baldacchino et al's scheme which co-occur with the product being represented, as these offer a finer grained account of the cognitive, perceptual and physical operations which played a part in product construction. These codes are listed in the order in which they occurred (with time running from top to bottom). This network does not indicate the segments of the protocols these finer grained codes were associated with.

These findings accentuate the need for both models to make room for initial intuition, as more instances of this phenomena were found to play a role in the production of creative philosophical products.

Also, neither of the models explicitly predict the occurrence of heuristically unassisted deliberate search for TEs/illustration of point already formed. Accommodation of this phenomenon is more pressing for Seakgwa, since Miscevic does not try to make claims about how TEs are searched for.

In the next chapter all the findings presented here are summarized, the limitations of this investigation made explicit and conclusions are drawn.



Chapter 5: Limitations and Conclusions

In this chapter I will start by addressing some of the limitations of the current investigation. I will then summarize the conclusions reached on the basis of the foregoing analysis and draw some connections between them and other existing literature.

5.1 Limitations:

5.1.1 On the Gaps in the Data

As addressed in the methodology section, there were some unforeseen drawbacks that impacted the informativeness of the study, here I have in mind the lack of record of the participant 1's second reading of the assigned article and the shortened nature of participant 2's task completion process. Obviously neither of these occurrences are ideal.

Regarding the gap in the data on participant 1, we were still able to gather data on the occurrence of creative intuition and we have data on the reading before it and after it, and no reason to think that there was anything novel in the missing reading. Regarding participant 2, I have already mentioned that we ought to reinterpret the phenomena/context that the data on participant 2 is representative of, from the writing of a publishable philosophical text, to the writing of a draft of such a text.

5.1.2 On the Lack of Intercoder Reliability

Intercoder reliability refers to the level of agreement between two or more coders, who independently code a set of data according to some coding scheme, on which codes to assign to which pieces of data. It is thus an indicator of the reliability of the coding scheme or schemas used, and thus reflective of the precision of the operationalizations therein codified. It is often assigned a quantitative value using measures such as Cohen's kappa (McHugh, 2012). Given that coding in the current investigation was done by only one coder (the author), it lacks the shield from coder-dependent biases which is provided by ensuring high intercoder reliability.

I think that these worries are, however, somewhat mitigated by the fact that some of the coding schemas used are only slight revisions of schemas that achieved a high intercoder reliability score when they were developed. Also, these analyses could (and will be) carried out in future.

5.1.3. On the Internal Validity of the Codes

Whereas the limitation above concerns the lack of mechanism for ensuring the absence of problematic variability in application of codes, another limitation concerns whether those codes (even if consistently applied) are actually tracking the phenomena they purport to.

Unfortunately, all existing criteria for identifying the occurrence of intuition in philosophical practice (owing partly to the fact that what intuition amounts to is itself a contested question in the metaphilosophical literature. Recognizing this problem, in Seakgwa (2017), I suggested that's needed to facilitate empirical research on intuition in philosophy in the face of this persisting disagreement is collaboration among the various parties in the dispute in developing a set of coding criteria which is the most acceptable to all or most of these parties. Given that this has not yet occurred, throughout these the present report, whenever presenting a coding scheme, I have been careful to explicitly state the most damaging objections to the codes set forth therein.

5.1.4 On the Lack of a Control Group

As is readily apparent, this investigation did not include a control group. This may leave some worried about the trustworthiness of the findings. To those afflicted with such worries, I will point out

that my concerns are not about how philosophers' cognition differs from lay cognition, or cognition in the rest of academia on a certain task, or the causal connection between differences in kinds expertise and/or levels of expertise and differences in cognition while completing some tasks. The question I am interested in is what happens during the philosophical process when a particular population with a particular kind and level of expertise are presented with a particular kind of task which represents a subset of the tasks they would usually undertake in their professional capacity (which I've decomposed into the 2 research questions for this study), even if this overlaps with the cognition that would occur if subjects who did not share this expertise and/or level of expertise were ask to complete the same task(s). Thus, a control group was not needed for comparison, or for isolating a particular cause-effect relationship (or set of such relationships).

5.1.5 On the Small Sample Size

As I have said before, while the sample size does limit the generalizability of the findings the, this is not uncommon in protocol analysis method, given the voluminous data it produces (e.g. Wineburg 1998 and Geisler 1994, Bartlett 1978 and Slovic 1969, in which the sample sizes range from 1 to 4). Although this show's that the relevant community of experts accepts this practice, it does not show that they were justified in doing so, and some who have undertaken such work have on occasion lacked caution in stating the generalizability of their findings. In order to avoid such issues, I have tried to get the most out of the data by avoiding population level generalizations and instead emphasizing existence proofs that the data can provide. One only needs to identify one instance of psychological phenomena X occurring in context Y in order to deduce that it is possible for X to occur in Y. In testing predictions from models that aim to adequately describe the political-philosophical process in all instances (obviously allowing for a certain level of idealization), showing the actual occurrence of an aspect of this process which has not been anticipated by these models is enough to establish a need for revision (assuming this phenomenon is not part of the set of things that ought to be idealized away).

5.1.6 On Ecological Validity

Ecological validity is a concept used to refer to the reliability of the conclusions of a study of some phenomenon in a scientific context (e.g. in a lab with a specific set of artificial tasks), when extrapolated to the phenomenon as it occurs outside this context. Since the present study was designed to emulate (a certain kind) of philosophizing as closely as possible (i.e. by including a real philosophical article as a stimulus and providing a realistic task prompt, as well as allowing the participants to work in their own homes and at their own pace), it does quite well in this regard. However, the task only emulates philosophical practice in a specific set of conditions (e.g. where the article to reply to has been predetermined). As such it does address cognitive phenomena which may be important in other contexts, such as problem finding⁴³.

Having addressed the limitations of the investigation I will now present a summary of its findings. Following the order in which the analyses were conducted and presented, I will start with the findings regarding the predictions made about the distribution of intuitive (type 1) and analytical (type 2) cognitive processes.

⁴³ See Getzels (1979, 1985)

5.2. Summary of Findings

5.2.1 Intuition:

While Seakgwa and Miscevic both predict that type 2 processing will dominate the philosophical process, Seakgwa recognizes the involvement of more than one kind (adding creative intuition) of intuition and thus predicts a higher percentage of intuitive processing. Thus, Miscevic places the range of type 1 processing at 0%- 12.5% while Seakgwa places it at 0% - 37.5%.

The findings of this study confirm Seakgwa's prediction about the occurrence of creative intuition in the context of philosophy. However, these findings also show that the necessary link assumed in the literature on insight and creative intuition between creative intuition, high confidence and positive affect does not hold in philosophy.⁴⁴

The data collected also supports Seakgwa's as opposed Miscevic's prediction regarding the amount of intuitive processing involved in the philosophical process. Lastly, both models did not predict the occurrence of initial intuition and need thus need to be revised in this regard.

These findings provide support for an aspect of Nado's critique of the current metaphilosophical fixation on thought experiments as used in the method of cases. Although Nado does not single out intuition as the focus of this fixation, since much of the metaphilosophical debate as discussed in the literature review does focus particularly on intuition in the context of the cases, the fact this phenomenon plays only a small role (at least in terms of percentage of thoughts representative of such processing) in the philosophical process thus provides reason to distribute more metaphilosophical attention to other phenomena which play a more dominant role in this process (at least assuming that metaphilosophical attention allocated to a phenomenon should be proportional to percentage of the philosophical process that phenomenon occupies).

5.2.2 Seakgwa on the Stages of the Philosophical Process:

6 predictions about the stages of the philosophical process were derived from Seakgwa's (2017) model. They are:

- 1) Failures, impasse and restructuring will precede the occurrence of creative intuition.
- 2) The occurrence of creative intuition will produce one main idea.
- 3) The idea produced by creative intuition will have just a claim (without supporting reasons) as its content, and ideas produced by heuristics/informal logical, will have an argument, claim argument or TE as its content.
- 4) In the case of creative intuition, the content of the idea produced will become the conclusion of the main argument in the philosophical text.
- 5) After creative intuition, only idea evaluation and justification will be carried out.

⁴⁴ Of course, some may object that because this feature is treated as essential to the definition of the phenomenon, what I observed cannot, by definition, be considered creative intuition. To this I will reply that while high confidence may be an essential feature of insight/creative intuition in the literature, if one decomposes the term intuition into its constituents "creative" and "intuition"(see Thagard 2014), and follows the cognitive scientific consensus on the definition of these terms (insofar as there is one), then the phenomenon I observed can be seen as a clear occurrence of both, and use of the term creative intuition in describing it is thus justified.

- 6) In the case of a philosopher following the heuristic based pathway, a period of cycles of idea generation and justification will be followed by a period of just idea evaluation and justification.

None of these predictions were supported by the data. Since each of the findings are concisely explicated in the previous section I will not rehearse them here.

These findings suggest that if the DJ distinction is going to be usefully applied to philosophy, it's going to need to be conceived of as interpenetrative *a la* Bowers et al (1990), and not neatly temporally separated as Seakgwa (2017) postulates. This point has already been accepted by those working on this distinction as applied to science, but has not yet been acknowledged by those such as Nado (2016) and Cappelen (2012) who employ it metaphilosophically. In addition to providing the first empirical evidence in support of the interpenetrative conception of the DJ distinction over its temporally distinct variant, the results also provide first empirically grounded detailing of the exact nature of this interpenetration that Bowers et al only vaguely alludes to, in any context, at least if we exclude investigations relying on historical evidence⁴⁵.

This data also points toward the need for further development of an account of an idea selection system for tasks where the fact that an idea occurred by creative intuition underdetermines whether it will be selected for implementation in the final product (as opposed to the tasks usually assigned as insight problems). See for instance the cost benefit analysis in video 9. Petervari et al speak about where these criteria might come from (e.g. learned (type 2) or constructed ad hoc (type1)) but they do not say anything about what impact the occurrence creative intuition/ insight would have on this selection.

5.2.3 Miscevic on the Stages of the Philosophical Process:

Two predictions were derived from Miscevic's model.

- 1) Thought experiments will be constructed after forming judgement.
- 2) When TEs are constructed or attended to, this process will unfold in at least 4 stages, as outlined above (with clear evidence of this for at least the 2 unambiguously conscious stages).

The findings showed that:

- 1) In all instances the thought experiments were only formed after the relevant judgement.
- 2) TEs that were attended were accompanied by evidence of Miscevic's stages.

Thus, both these predictions were supported by the data.

Given this empirical support and the level of detail of Miscevic's model (at least when compared to the implicit employment of the standard model which currently dominates), it can be adopted as a precisification of the standard model which could offer more reliable guidance to experimental and metaphilosophical inquiry than its more popular counterpart.

5.2.5 Miscevic and Seakgwa on the Mechanisms of Philosophical Product Production:

- 1) Seakgwa (2017) and Miscevic (2012, 2013, 2018) predict that all creative philosophical idea generation can be accounted for by the mechanisms of creative intuition, logical analysis and

⁴⁵ See Nersessian (1995) and Feist (2006).

philosophical heuristics (from Seakgwa) and/or intuition in the method of cases, general ethical legal principles, and presumed facts in combination with explanatory theories (from Miscevic)

The findings suggested a need for both models to be adjusted to include initial intuition, as more instances of this phenomena were found.

In addition, the occurrence of heuristically unassisted deliberate search for counter-examples and/or illustrations of points already formed was also observed. This mechanism is not explicitly accounted for by either model.

Since these findings clearly explicate the operations which underlie actual philosophical idea and text production (and thus argument production) it sheds light on the cognitive underpinnings of both creativity and argumentation. They thus provide a basis for integrating research in creative cognition Such as Welling (2007) on the cognitive mechanisms of creativity more generally, and work on the psychological process of informal argument generation/ construction, such as Voss et al (1993).

5.3 Conclusion

These findings, taken together, show that the predictions generated by the models of Seakgwa and Miscevic are mixed in their predictive success. Thus, they are both in need of revision. Our current understanding of the process of philosophizing on a cognitive level, therefore stands in need of improvement before we can definitively answer the research questions posed at the outset of this investigation regarding 1) the stages of this process, and 2) the mechanisms involved in generating the ideas central to this process. The current investigation has moved us forward by not only telling us this, but also by pinpointing (some of) the exact aspects of these models in need of this improvement, as well as providing specific proposals regard how they should be improved.

In the next chapter, I situate this the study just concluded, as a contribution to meta-inquiry, and more specifically, the meta-inquiry of philosophy.



Chapter 6: Toward a Unified Meta-inquiry

In this chapter I will sketch a picture of the discipline to which this project is meant to be a contribution, a discipline I will call “Meta-inquiry”. I will begin by outlining the growing but disunified body of literature that I will argue, expanding on Ossowska and Ossowski (1936), can be fruitfully seen as constituting a single, comprehensive, meta-discipline. I will then go on to delineate a branch of this discipline called the “meta-inquiry of philosophy”, and show why such a field would be a worthwhile addition to the existing knowledge production system. I will then say how the investigation presented in the preceding chapters can be seen as a contribution to this envisioned field.

6.1 On the Roots and Boundaries of Meta-inquiry

In 1936, Polish sociologist-philosophers Ossowska and Ossowski set out the first comprehensive development of the idea of a science of science. According to them, even at that time, “for a number of years Science itself [had] become the subject of scientific Investigation” (p. 1). They went on to provide an intellectual framework, a way of grouping the work done (and still to be done) in this wide-ranging, and then fledgling, field.

Ossowska and Ossowski envisioned this new field as unified by its object of study— and thus included the history of science and philosophy of science alongside the sociology and psychology of science (they also include a branch which deals specifically with organisational issues pertaining to science as a fifth division of the science of science as they envisioned it) as branches of their proposed discipline. Here I will diverge from their original conception, I instead conceive of a complete meta-inquiry as the empirical study of academic inquiry (thus defined according to the object of investigation and the kind of methods used to investigate it). Hence, I intend on excluding the philosophy of science and history of science. My main motivation for this modification being that following Ossowska and Ossowski in modelling the field on existing sciences (see their analogy with linguistics on page 7), our contemporary understanding of the word “science” seems to render the inclusion of history and philosophy as thoroughly scientific, problematic (e.g. the philosophers and historians of science are trained as historians and philosophers not scientists and are employed by separate departments than the sciences they study, with cognitive science being a special case)⁴⁶. Although I admit there will be difficult cases at the borders⁴⁷. I would also like to place more emphasis on scientific study of non-scientific fields of inquiry in addition to the study of scientific ones, which is not explicitly excluded from the Ossowska and Ossowski’s science of science, yet receives no mention in their article. Although this dearth of attention to non-scientific inquiry may be accounted for by the non-existence of such investigations at the time and not an oversight on the Ossowska and Ossowski’s part. Despite these modifications, much of what the Ossowska and Ossowski said was prescient and insightful, such as emphasizing and developing the strong emphasis on multilevel inquiry.

Yet, as if they had never written, the field they were hoping to unify remains scattered and disunified today. I thus offer a renewal of their attempt at unification.

⁴⁶ This is not to deny the Quinean (1951) thesis of a continuity between philosophical and scientific investigation, it is merely to note what our current conception of science picks out as members of the set to which it refers, and to adjust the conception of meta-inquiry accordingly. Of course, this still allows for the meta-inquiry to be informed and/or studied by philosophers, much in the same way other sciences are. Although a field which studies other fields itself being studied by one of its subjects may seem to open up a sort of infinite recursive nesting of meta-investigations, I see no reason why this ought to be avoided as long as it produces the outputs sought by those doing the investigating.

⁴⁷ For instance, those like Barsegyhan (2015) who use accounts from the history of science as data.

6.2 On Contemporary Meta-inquiry

Work in the neo-Ossowskian empirically restricted spirit delineated above has been carried out in many corners of the academy since the call of the Ossowska and Ossowski (1936). This work includes but is not limited to, most famously, Woolgar and Latour's (1979) sociology of science, and the rest of science and technology studies which has grown out of it⁴⁸, as well as the related, but less well-known sociology of intellectuals and sociology of knowledge (e.g. Baert 2015, Baert and Susen 2017 and Mannheim, 1949). In addition to these sociologically focused fields, there is work which has been carried out relatively independently of these headings, and which targets other levels of analysis, for instance: Belver Griffiths' science of scientific communication and information exchange (1989), Gregory Fiest's psychology of science (2006, 2012), and the scientometrically focused Science of science (e.g. Fortunato et al 2018). More recent additions include the new fields of experimental philosophy of science (Griffiths and Stotz, 2008; Stotz, 2009; Machery, 2016; Steel, Gonnerman and O'Rourke, 2017) and scientonomy (Barseghyan, 2015). Although the fields listed thus far have been completely science-centric this does not mean that current meta-inquiry (or more accurately at this stage, proto-meta-inquiry) is uninterested in non-scientific inquiry. For instance, work in expertise research on mathematical, historical, and literary critical expertise, as well as work on mathematical intuition and heuristics (e.g. Wineburg 1991, Schoenfeld 1985 and Peskin, 1998), show that if ever there was once a dearth of empirical investigation of non-scientific academic inquiry, it is now steadily dissipating.

In addition to the fields and research programmes just mentioned, the repeated emergence of the term "metascience" in a number of different contexts is also an indicator of the enduring recognition for the value of second order inquiry of not only a philosophical and/or historical character, but also, and more importantly for our current purposes, an empirical one. The many meanings of "metascience" include its recent use by some psychologists as an umbrella term for philosophy, history, sociology and psychology of science (e.g. Webster, 2008), and its use by another, more diverse, group of scientists to denote work on topics like the prevalence and etiology of replication failure etc (e.g. Munafò et al., 2017).

It is thus clear that the value of the kind of meta-disciplines continues to be recognized and thus the raw material for the kind of unified enterprise proposed by Ossowski and Ossowska, still exists. Not only this, but as is evidenced by some of the recently established fields listed above, this pool of raw material is growing.

6.3 Observing the Fragmentation of Contemporary Meta-inquiry

Unfortunately, the fields just listed are nowhere near forming the cohesive whole the Ossowska and Ossowski's hoped would take shape. In fact, many of these fields are isolated from each other to the point of not being aware of each other in some cases. To illustrate this mutual isolation and/or hostility, one simply needs to look at the citation practices in the latest handbooks and review articles of some of these disciplines. To this end I reviewed the *Handbook of Science of Technology Studies* (2016) and *The Handbook of the Psychology of Science* (2012) as a case study of one such relationship⁴⁹. These works provide useful windows into the fields they represent as they are

⁴⁸ See Felt et al (2016) for a recent overview of this work.

⁴⁹ I have selected these disciplines as a case study since they are paradigmatic examples of disciplines which operate on different levels of analysis. Although the generalizable conclusions one can draw from such a case study are limited, from informal review of material representative of some of the other relevant fields bear these

specifically designed to provide a broad overview of recent work therein. A preliminary keyword⁵⁰ search of each of these works yielded the following findings:

6.3.1 The Sociology of Science's Interaction with the of Psychology of Science

29 appearances of the word “psychology” and 40 appearances of the word “cognitive” were found in the *Handbook of Science and Technology Studies*. None of the appearances of these words refer to work in the psychology of science. This is some evidence that there is very little awareness (if any at all) of or interaction with the psychology of science coming from scholars in science and technology studies.

6.3.2 The Psychology of Science's Interaction with Science and Technology Studies

79 mention of “sociology” and 19 appearances of the term “science studies” in the *Handbook of Psychology of Science*. All of these were used to refer the sociology of science and science studies respectively. Most of the authors who contributed to this volume viewed the sociology of science as the field which science and technology studies grew out of. Most of these references to these fields are either to note and discuss this historical relationship or note the severe shortcomings of current science and technology studies, or both. This negative appraisal of science and technology studies by psychologists of science is most concisely expressed by the founder of contemporary psychology of science, Gregory Feist's in different volume (Capaldi and Proctor, 2012), in which claims that:

sociology of science is or was mostly an empirical science. From the 1930s until the 1970s sociologists of science collected large-scale data sets and tested hypotheses statistically (Cole & Cole, 1973; Merton, 1973; Zuckerman, 1977). In the late 1970s, however, things started to change with the advent of the social constructivist movement in the science and the scientific method no longer held sway and the methods moved away from traditional hypothesis testing and statistical inference. The field became more focused on qualitative data analysis at best and it became antiscience at worst—to use Jonathan Cole's phrase, it became “voodoo sociology” (Cole, 1996; Feist, 2006c). (2012, p. 22)

There is thus evidence that although psychologists of science are aware of and do interact with the sociologically focused science studies, this interaction is usually in the form of disagreement and occasional denigration.

Thus, although all these fields share an object and approach the same empirical outlook, divergent conceptions of and goals for their respective enterprise, coupled with the lack of communication observed in previous section is a recipe for disciplines insulated from what could be fruitful exchange. Such that even if they are aware of each other, they have become too different in their self-conceptions to recognize the opportunity for such mutually beneficial exchange. Hence, despite these disciplines fitting into Ossowska and Ossowski's overall framework as well as my own, they have not coalesced into the coherent whole that they or I have envisioned.

6.4 Why Unification is Needed

The above all presupposes the desirability of integrating multiple levels of analysis (e.g. neural, cognitive and social). But why take such an approach?

conclusions out. It is my hope that future research will more systematically corroborate these findings with a larger and more diverse database.

⁵⁰ The keywords used were selected because they were the most likely to be used when referencing the fields of interest.

One reason is that even those on opposing sides of the hostile relations between disciplines like science and technology studies and psychology of science, already recognize the utility of such approach in order to achieve a complete understanding of their shared object of interest. For instance, Feist, chief architect of contemporary psychology of science, gives the following characterization of the relation of his field to others that also take science as their object:

Indeed, psychology can offer not only a psychological perspective to science studies, but also a methodological and theoretical one. Compared to other studies of science—with the exception of history—psychology of science is the only discipline to focus on the development of the individual scientist in the context of his or her social environment and group. Moreover, psychology of science is unique in that it focuses on influences such as intelligence, motivation, personality, and development over the lifespan of scientific interest, thought, ability, and achievement (Feist, 2006b; Gholsan, Shadish, Neimeyer, & Houts, 1989; Proctor & Capaldi, 2012; Shadish & Fuller, 1994; Simonton, 2009). (2012, p.4)

Despite Feist's denigrating remarks cited earlier, this statement seems to recognize the utility of the social-level investigation carried out by other disciplines which also take science as their object. It also shows that he conceives of the individual level of analysis as continuous with this higher-level of investigation and as adding to the understanding of the phenomena provided by these higher-level investigations.

Similarly, Knorr-Cetina, one of the founding scholars of science and technology studies, commenting on the sources she draws on in building her model of intuitive theorizing in the social sciences, admits that:

I draw on the neurophysiological and cognitive psychology literature [...] since these are areas that can go further with intuition than we can in the social sciences with our action-level data... Neurophysiology opens up a field of inquiry at precisely the point where social scientists get stuck—although sociology and similar fields have long been aware of the existence of this same area. (2014, p. 33)

Interestingly, consonant with what we saw in the handbook of science studies above, she doesn't draw on the psychology of science, which, given these remarks, seems more likely due to a lack of awareness than a lack of openness. Nonetheless, her statement indicates an acceptance of a multi-level picture also endorsed by Feist above.

Thus, there seems to be a shared recognition by pioneering scholars of both the individual and social level of investigation of academic inquiry, that in order to reach complete understanding of inquiry, multilevel investigation is necessary.

In this regard Geisler's work relied on in the foregoing investigation is illuminating, as it illustrates what a combined socio-cognitive approach to the study of inquiry looks like and what its fruits are. Her thesis is that the particular shape of academic cognition (briefly explicated in an earlier chapter) is what it is because of wider social forces (chief among them professionalization and specialization). She goes about gathering evidence for this using literature, methods, and findings from the cognitive study of expertise as well as sociological studies of expertise. Her findings thus show how both social and individual level data can be combined to build mutually illuminating models of phenomena of interest to both sociologically and psychologically inclined scholars, which could not be accomplished if just one of these levels was focused on.

A field combining investigations on various levels also brings with it other advantages, like the ability to better answer interstitial questions which currently are not in the purview of any one field. For

example, meta-inquirers could help answer interesting questions about the relations between fields, such as by using scientometric methods to investigate whether philosophy helps the sciences (or a particular science) advance, which has been a controversial question among philosophers and scientists alike⁵¹.

6.5 The Problem of Divergent Disciplinary Paradigms

A significant impediment to the formation of meta-inquiry as described above are the divergent philosophical orientations⁵² of many of the would-be constituent disciplines. For example, Capaldi and Proctor (2012) bring attention to the fact that:

one of the issues that has made it hard for psychologists of science to discuss their work with some of the sociologists and anthropologists who take a constructivist, postmodern approach to science studies...[is that] that postmodernism assumes reality is little else but an agreement among members of a culture. (p.13)

Proctor and Capaldi see this as antithetical to the naturalistic approach required for a progressive study of science.

This sort of philosophical incompatibility among the scholars of different stripes interested in the empirical study of science thus poses a problem for the formation of a cohesive discipline such as meta-inquiry. If the formation of a successful interdisciplinary field requires a unified philosophical/conceptual framework, the existence of such deep philosophical schisms would be fatal to the vision of unification expounded above.

One theorist who affirms the necessity of such a shared conceptual framework is Thagard (2005) in his discussion of the place of interdisciplinarity in cognitive science. Thagard asserts that, “for an interdisciplinary field to have an intellectual purpose, it must involve ideas that cut across disciplinary boundaries” (p. 328), and that, “for cognitive science, the most important ideas have been mental representation, computational procedures, and the brain as a representational-computational engine” (*ibid.*). It may be argued that Thagard’s reference to “ideas which cut across disciplinary boundaries” is ambiguous between interdisciplinary ideas as the first-level inputs and outputs of the investigations in these fields (such as Geisler’s thesis above) or constituents of the more fundamental philosophico-conceptual frameworks which we have been discussing thus far. Though his statement does admit such ambiguity, the specific concepts he subsequently refers to do play the latter role in cognitive science (Searle 1990). I therefore interpret Thagard as meaning “ideas” in this latter sense. Thus, if Thagard is right, given what we’ve seen above about the philosophical disagreement in the metasciences, meta-inquiry is a non-starter.

However, in the same paper in which Thagard professes the necessity of shared core conceptual commitments as a condition for a unified interdisciplinary field, he also makes a passing and dismissive reference to those he calls “Heideggarians” (2005, p. 328) who reject these core ideas. Yet while Thagard may be correct when he states that those who reject representationalism and computationalism are a minority, he understates the size of this growing minority⁵³. If a growing number of cognitive scientists reject the core tenants of traditional cognitive science (representationalism and computationalism), yet are still cognitive scientists, then acceptance of these

⁵¹ For example, Richard Feynman famously claimed that “philosophy of science is as useful to scientists as ornithology is to birds” (Feynman, n.d, as cited by Birch 1990)

⁵² In what follows, in order to avoid repetitiveness, I use a number of terms to refer to these philosophical orientations, include “conceptual framework(s)”, “paradigm(s)”, “philosophico-conceptual framework” etc.

⁵³ See Menary 2010.

commitments cannot be a necessary criterion for membership to cognitive science. What the Heideggerians do share with traditional cognitivists is a shared object of investigation (cognition) and methods of investigation (empirical, computational and philosophical analysis)⁵⁴. I thus contend that an interdisciplinary field needs only a shared object of study and set of methods to remain unified (at least unified enough to maintain fruitful cross talk and mutual awareness)⁵⁵.

I also contend that unification based on this object and method criteria has some advantages over also requiring a shared conceptual framework. Dogon and Pahre (1990) survey (though informally) the evidence for the existence of a phenomena they call “fragmentation” (p. 20), which they define as the tendency of sciences (they examine the social science in particular) to split into subdisciplines that sometimes completely lose contact with their home discipline and become disciplines of their own or combine with subdisciplines from other fields and then form hybrid disciplines. A conception of interdisciplinarity that does not require conceptual and/or theoretical convergence on top of the requirement for methodological similarity and a shared object provides fewer dimensions along which this fragmentation can occur. As such my proposal allows for longer maintenance of what Thargard calls an interdisciplinary “trading zone”⁵⁶(2005, p. 328), which is a field which allows the trading of ideas, findings, methods etc between disciplines, and thus proves beneficial for all participants, than does conceptions such as Thagard’s which also require conceptual cohesion.

When we look passed the differences of paradigm, we see that there are still sharable methods and sharable databases. For instance, Dunbar’s observations of scientists in the laboratory has much in common with the investigations of Latour and Woolgar using the same methods, despite the former belonging to the naturalistic psychology of science camp, and the latter being a contribution to the constructivist science and technology studies. This overlap in object of study and methodology is enough to bond cognitive science, it should be therefore be enough to unify meta-inquiry.

6.6 On the Meta-inquiry of Philosophy

Now that the scope of meta-inquiry has been clarified, we can begin to situate the investigation detailed in the foregoing chapters as a contribution to a sub-field of it that I will call the meta-inquiry of philosophy (MOP). This sub-field is concerned with the multilevel empirical investigation of philosophy and philosophers. More specifically my project is a contribution to the cognitive level of this enterprise.

So defined, this area of investigation can be viewed as predating the recent rise of contemporary the overlapping project of experimental philosophy, going back to 1926 with the publication of Alexander Herzberg’s book *The Psychology of Philosophers*. It continued into the late 20th century with works such as Steven’s Bartlett’s articles on the psychology of philosophy, such as the first, albeit rudimentary, application of protocol analysis to philosophy (1978), which I addressed in an earlier chapter. This later 20th century strain of MOP also includes Randall Collins’ *The Sociology of Philosophies* (1998) and Johnson and Lakoff’s *Philosophy in the Flesh* (1999) (a study of philosophy and philosophers from the perspective of cognitive linguistics and embodied cognitive science). These

⁵⁴ Some may say they also share the same goal--understanding cognition. However, the push from the computational side of cognitive science for AI and AGI, whether or not its intelligence is due to cognition to anything like human or animal cognition, problematizes this supposition of a shared goal. Since these computational researchers are not necessarily interested in understanding the human or animal mind as has been the goal of cognitive science since its inception.

⁵⁵ This is not to deny the importance of more practical cohesion such as shared societies, journals, degree programmes etc (see Feist, 2012), it just points out that this does not seem to necessarily presuppose a shared conceptual framework.

⁵⁶ See Kramnick’s (2012) notion of “horizontal interdisciplinarity” (p. 435) for a similar concept.

historical antecedents reflect the multilevel and pluralistic nature of MOP as I envision it, that is, as a field of inquiry which uses tools from a number of disciplines to illuminate the social, cognitive and neural underpinnings of the discipline of philosophy.

6.6.1 Is It Really Distinct from Experimental Philosophy

Since this the MOP shares with experimental philosophy a reliance on empirical methods and, at least sometimes, the inclusion of actual philosophers as subjects, it is fair to wonder how distinct these enterprises actually are from each other.

This question is made difficult by the lack of a consensus on the essential features of experimental philosophy (Stich and Tobia, 2016). So, for instance, where some of its practitioners place emphasis on the use of empirical methods to contribute to answering traditionally philosophical questions (e.g. Friedman and Jack, 2017), others downplay the difference between experimental philosophy and other investigations of mental phenomena, with some even claiming that it is just an ordinary part of the cognitive sciences (e.g. Knobe, 2016). Thus “experimental philosophy” can be viewed an umbrella term for a number of distinct research programmes. Some of these overlap with the MOP as envisioned here due to their focus on the cognition of trained philosophers (e.g. Schwitzgebel and Cushman, 2012, 2015) and others overlap with meta-inquiry more generally due to their focus on the cognition of trained scientists (e.g. Stotz 2009, Griffiths and Stotz 2008, Machery 2016 and Steel et al 2017), but most others do not overlap with either⁵⁷.

Meta-inquiry of philosophy includes these contributions to experimental philosophy without itself being entirely reducible to experimental philosophy, firstly because only a handful of investigations in experimental philosophy focuses on the cognition of actual philosophers and/or scientists. Secondly, even those that do share this focus show no inclination toward an integrated multi-level understanding of their subjects or contributing to such understanding (for instance, Machery 2016 only flags the importance of the psychology of science for experimental philosophy of science). Thirdly, meta-inquiry of philosophy encompasses all empirical methods used to study its object, including approaches that make use of methods of corpus linguists (e.g. Mizrahi and Ashton 2017) and social network analysis (e.g. Collins 1998), which have not been embraced under the banner of experimental philosophy. These fields are thus sometimes overlapping but mostly separate.

6.6.2 Why Should We Establish this New Field?

Regarding the payoffs of the MOP, much of what was said above about meta-inquiry in general can be applied here. For instance, here too there have been researchers of different stripes who recognize the need for multi-level investigation. Besides Geisler’s work which studies philosophy from exactly such a perspective, philosophers such as Morrow and Sula (2011) also recognize this need. They thus seek to establish what they call “naturalized metaphilosophy” (p. 1), which would combine methods and findings from the sociology of philosophy and the cognitive sciences to shed light on philosophers and the philosophical enterprise. The unique ability of an integrated multilevel approach to offer a comprehensive understanding of philosophizing in its entirety is thus already attested to by various researchers.

Even in some places where this realization has not yet been had, it is evident that such an approach would be helpful. For example, in Collin’s sociological investigation of philosophy, central to the theory he develops is the concept of “emotional energy” (1998, p. 7). Unfortunately, he does not give a detailed description of what this amounts to. Here it seems obvious that cognitive and/or neural level

⁵⁷ See Knobe 2016 for a systematic review of the literature in which he makes a similar point.

investigations, such as Thagard's (2002) work on the role of affect in the scientific inquiry, could be useful.

What the MOP has to offer can also be illustrated by the example of my own fledgling research programme. As has been evident throughout the previous chapters my aim is the accurate qualitative modelling of the process of philosophizing at the cognitive level. Although this investigation focuses on cognition, it draws on the socio-cognitive work of Geisler, and is open to being extended in more sociological directions (for instance, in order to answer the question of why the process of philosophizing has the features that I have observed).

Unlike other existing investigations of philosophical cognition embedded in experimental philosophy, the current investigation is not primarily driven by the goal of intervening in the metaphilosophical debate regarding the reliability of philosophical methodology. It aims only to provide a comprehensive description of the process, and thus can be seen as more akin to work in the psychological literature on creativity and expertise in various other domains (e.g. Dunbar 1997, Schoenfeld 1985, Wineburg 1998 etc). Since the output of this process is/will be an accurate stage model of the philosophical process, it enables what I will call "cognitive comparison", with other similarly constructed stage (or componential) models of the processing of experts of other kinds in other contexts (many of which already exist). This cognitive comparison could yield various "advisory" (Darden 2006, p. 10) outputs if it is found that practitioners in one domain are making use of cognitive strategies and/or heuristics which may be useful to practitioners in another domain where these strategies and/or heuristics are yet to be employed. This approach is based on Darden (2006) wherein she examines evidence from the history of science to construct a model of the strategies that historical scientists could have used to make the discoveries they did. Since she does not claim that these were the strategies that were used or ought to have been used, but nonetheless advises that contemporary scientists use them in situations where they might be useful, she calls the models she produces advisory, rather than descriptive or normative. The procedure of cognitive comparison sketched above can thus be seen as a way of constructing such advisory models based on accurate descriptive models that are constructed on the bases of observational/experimental rather than historical data.

Cognitive comparison could also take place between philosophical and lay cognition. For instance, in the realm of political argumentation, and protocols gathered in investigations such as these could be used for the dissemination of such advisory models, for instance through their use pedagogical contexts (as successfully piloted by Bartlett, 1978).

None of the above is to deny that this investigation can also make contributions to metaphilosophy. As stated earlier, the work presented here can also form the basis for a more accurate description of the philosophical process than is offered by the current standard model. It thus provides a more accurate grounding for the metaphilosophical debates reviewed earlier. In addition to this, cognitive comparison could also help in answering the comparative questions which often crop up in metaphilosophy, such as questions about the similarities and relation between continental and analytic philosophy (e.g. Gutting, 2011), philosophy and mathematics (Aberdein and Dove, 2013) and philosophy and the sciences (Nado, 2015).

6.7 Conclusion

The cognitive investigation presented herein is thus to be understood as a contribution to a discipline that I call meta-inquiry, which is an interdisciplinary field which has yet to achieve full realization, but can and ought to. More specifically, my investigation ought to be seen as step toward the establishment of a branch of meta-inquiry which I call the meta-inquiry of philosophy, which overlaps

with, but is not identical to, experimental philosophy. This field is valuable in its own right as it is able to, not only improve our understanding of philosophy for metaphilosophical purposes, but also (among other things) assist in the construction of advisory models which could improve cognition in various domains, with investigations such as mine as their basis.



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Appendix A

Table 1: Coding scheme for intuitive processing

Coding criteria	Sources	Examples from protocol
It is an initial reaction or automatic response	Epstein (2011 as cited in Baldachinno et al 2014)	“that's funny...” “Ya, that's kind of <i>conceptually</i> interesting.”
It represents recognition of patterns (largely based on experience, expertise and knowledge): <ul style="list-style-type: none"> • The argument seems familiar, similar to others the participant has seen (despite the fact that the participant has never read Morris’ article or heard about the non-identity problem) • Detection of problems, anomalies 	Dutta & Crossan (2005 as cited in Baldachinno et al 2014) Hodgkinson et al. (2008 as cited in Baldachinno et al 2014) Klein (2004 as cited in Baldachinno et al 2014) Miller & Ireland (2005 as cited in Baldachinno et al 2014) Simon (1995 as cited in Baldachinno et al 2014) Witteman & van Geenen (2010 as cited in Baldachinno et al 2014)	“Okay, so it's going to be <i>that</i> kind of an argument’ “Good luck trying to convince or persuade social justice warriors of reasonable principles of personal identity.” “Okay cool, the problem with this principle is it doesn't sound nearly as intuitive.” “Isn’t there like a kind of a category mistake here man?”
It is a spontaneous generation of a (p-creative) idea, alternative or solution, or what Sadler-Smith would call ‘divergent’ (2004: 161)	Sadler-Smith (2004 as cited in Baldachinno et al 2014)	“I just had a thought now um what if V tacitly bequeaths his claims to subsequent descendants, maybe I should make a note of that” “What if these cases often don't they involve the real cases, don't they involve cases where W is actually not an individual, where W1 is actually a society”
It is emotionally laden	Dane & Pratt (2007 as cited in Baldachinno et al 2014) Sinclair & Ashkanasy (2005 as cited in Baldachinno et al 2014)	‘(laughs) that's funny.’ “Oh dear God!”

<p>It represents an instant judgement or a rapid, confident decision to accept or reject an argument or claim (despite the lack of information available)</p>	<p>Dane & Pratt (2007 as cited in Baldachinno et al 2014)</p> <p>Simon (1995 as cited in Baldachinno et al 2014)</p>	<p>‘Ok wait. I’m talking kak here man.’</p> <p>‘‘Oh that's not bad actually, this Sher thing might work.’’</p> <p>“okay sure, yes, yes, all very good.”</p>
<p>It represents an inability to give a rational justification for why the decision was made, or it makes reference to intuition, gut feeling etc.</p> <p>BUT ‘if participants immediately mention their decision and only then continue to give reasons pro (and con) they may be assumed to have reached their (initial) decision intuitively, and their reasons could be called post-hoc justifications’</p>	<p>Witteman & van Geenen (2010 as cited in Baldachinno et al 2014)</p> <p>Epstein (2011 as cited in Baldachinno et al 2014)</p> <p>Simon (1995 as cited in Baldachinno et al 2014)</p> <p>Simon (1987 as cited in Baldachinno et al 2014)</p> <p>Witteman & van Geenen (2010 as cited in Baldachinno et al 2014)</p>	<p>“Um (shakes head) I can't put my finger on it.”</p> <p>“ That seems... that seems weird to me because, the point is, it, it may...”</p> <p>“Urm.. for some reason I suspect that that has some bearing on my approach to it, to Morris's views, urm, and does it seem like...it seems maybe profoundly deterministic, in a sense because urm, ja its weird”</p> <p>“both urm, as I have the strong impulse that injustice must, in some sense, be rectified for, to take the less bloodless term, avenged, but at the same time...”</p>



<p>Seem True/special phenomenology:</p> <p>either says is accompanied by special phenomenology</p> <p>or</p> <p>uses the word seems or cognates</p>	<p>Cappelen (2012)</p> <p>Mizrahi and Moti (2017)</p>	<p>“And that seems to the first issue to me here. Because, it seems odd to think of like, it seems really weird to think that, urm, that the existence of my son who we know retrospectively can say has come about, That that he was somehow, that existence is somehow affected by a climate policy, urm China's climate policy in the 70's”</p> <p>“Urm i can just expound on this a little bit. on one hand, it seems an intuitive idea that we should always act to make the</p>
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		world a better place, and that the past no longer exists, i.e. does not count in ethics.”
<p>Rock:</p> <p>If in a context C, evidence and arguments are given for p and those arguments evidence plays a significant argumentative role in C, that is evidence that p is not Rock relative to C. The existence of a context C 0 in which you can get away with claiming p without providing argument or other evidence is irrelevant to p’s status in C, unless there is some clear evidence in C that what goes on in C 0 matters for p’s status in C.</p>	Cappelen (2012)	“My intuition says yes.”
<p>Based solely on conceptual competence. First, if the writer says that the judgment is based solely on conceptual competence, that would be good evidence in favor of the writer trying to rely on F3 explicitly deny it).</p> <p>Second, if there are explicit discussions of the following kind in a debate over the answer to some question Q that would constitute evidence of an attempt to rely on F3:</p>	Cappelen (2012)	<p>Since there were no occurrences of this phenomenon evident in the protocols include here Cappelen’s description of what this would look like:</p> <p>A: The answer to Q is p.</p> <p>B: Are you basing p solely on your conceptual competence? It seems to me you are relying on experience and memory in a way that goes beyond what is required for conceptual competence.</p> <p>A: I disagree. Let me explain: here is what I mean by concept: Blah1.</p> <p>Note that these are the concepts involved in the judgment that p: Blah2.</p> <p>Here is what I mean by ‘based solely on’: Blah 3.</p>

<p>Creative intuition [that which] occurs when a new interpretation of a situation or the solution to a problem suddenly springs into conscious awareness, seems obviously correct, and is accompanied by a surprising and emotional experience known as the “<i>Aha</i>” phenomenon (equivalent to spontaneous generation+ positive emotion laden+ confidence)</p>	<p>Thagard (2014) Seakgwa (2017)</p>	<p>This did not occur in protocols but see below for some interview evidence of an occurrence.</p>
<p>Rapid reading of the text and quick scanning of the task scenario</p>	<p>Dane & Pratt (2007 as cited in Baldachinno et al 2014) Klein (2004 as cited in Baldachinno et al 2014) Simon (1995 as cited in Baldachinno et al 2014)</p>	<p>(Reading text Loudly) “the act under scrutiny generates.” (followed by rapid scrolling through the text) (Scrolling down, Reading text Loudly) “It is not just close-to-home choices relating to procreation” (followed by rapid scrolling through the text)</p>
<p>High confidence in decision</p>	<p>Dane & Pratt (2007 as cited in Baldachinno et al 2014) Simon (1987 as cited in Baldachinno et al 2014) Witteman & van Geenen (2010 as cited in Baldachinno et al 2014)</p>	<p>“but VN could just as well have been other individual doesn't matter that...” “Yeah, I don't buy that argument at all”</p>

Appendix B

Table 2: Coding scheme for analytical processing

coding criteria	Sources	examples from protocol
15) It represents what Klein describes as ‘the process of trying to understand a problem by breaking it down into its components and then performing logical and/or mathematical operations on these components’ (2004: 74)	Klein (2004 as cited in Baldachinno et al 2014)	<p>“So, Morris gives us a definition of rectification, urm, of rectification of past wrongs, urm, and then gives an example of, urm, land claims of various North American Indians.”</p> <p>“(Speaking) So there's a more immediate problem and until we understand what's going on there, arguing about theproblem”</p>
16) It involves a deliberate effort at what sadler- smith describes as ‘reasoning the decision through by a process of analysis’ (2008: 35)	Sadler-Smith (2008 as cited in Baldachinno et al 2014)	<p>“I was just reproducing a thought in head again”</p> <p>“okay cool, that's the principle that in my response, I will have to somehow attack”</p>
17) It is characterized by attention to objective data such as market trends and statistics, prices and other information that is relevant to the task at hand	<p>Dane & Pratt (2007 as cited in Baldachinno et al 2014)</p> <p>Dean & Sharfman (1993 as cited in Baldachinno et al 2014)</p> <p>Gustafsson (2006 as cited in Baldachinno et al 2014)</p> <p>Sadler-smith (2008 as cited in Baldachinno et al 2014)</p>	<p>“Ya, okay, that seems about right, urm, because receiving stolen goods IS kind of a crime, if I buy stolen stuff, they would lock me up”</p> <p>“Law's not bad actually, law insists on damages for there to be a delict.”</p>
18) Reference is made to the lack of information available, or respondent seeks more information (including re-reading/closer examination of the text provided)	Dean & Sharfman (1993 as cited in Baldachinno et al 2014)	<p>“Okay, gotta go to Parfit for that.”</p> <p>“Okay but before I go there, I think I must go back to... here.”</p>

<p>19) It represents a rational justification for a choice or decision. As explained by Witteman and van Geenen, 'the more reasons, the more deliberation is used in the process', especially if participants 'mention their decision only after their reasoning' (2010: 56–57)</p>	<p>Simon (1987 as cited in Baldachinno et al 2014) Witteman & van Geenen (2010 as cited in Baldachinno et al 2014)</p>	<p>“See um any number of factors that are causally necessary for VN's birth could also been possible , but it's it's that doesn't make logical sense to think of VN in that way” “and then my response will be something about how urm that would conflict with ton of our other intuitions and so it's ultimately untenable.”</p>
<p>21)It is a conscious search for alternatives, ideas, solutions</p>	<p>Coget (2011 as cited in Baldachinno et al 2014)</p>	<p>“Then I need an idea...” “well urm, cool, Im going to go for a really terrible title so I'm going to call it..”</p>
<p>22)There is a comparison of claims/arguments</p>	<p>Coget (2011 as cited in Baldachinno et al 2014) Klein (2004 as cited in Baldachinno et al 2014)</p>	<p>“This reminds me a lot of David Benatar's arguments in 'Better never to have been!.'” “OK he is using all the small numbers the degree of generation, I don't think that has an issue, I don't think that is an issue for me because the V then simply becomes V, Wayde becomes V or Wesley becomes V or whatever and Wayde will be Wayde 1 to note that um to show that he is the first descendant of Mark, um but they don't, what would pseudo V be, weird”</p>
<p>23) It represents a delay in making a commitment to accept or reject the claim/argument until more information is gathered (search for more information)</p>	<p>Dean & Sharfman (1993 as cited in Baldachinno et al 2014)</p>	<p>“Ur, I dunno about that.” “Urm, I mean is this, I dunno, let's see.”</p>

Slower reading of the text and careful inspection of the task scenario	Dane & Pratt (2007 as cited in Baldachinno et al 2014)	(Loudly reading the text) “if it was the case that VN is conceived after A then the counterfactual claim is simply not true” (short pause)
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Appendix C

Table 14: Coding scheme for idea generation


Criteria	Source	Example
<p>Formal and informal logical analysis:</p> <p>Formal:</p> <ul style="list-style-type: none"> • Uses formal apparatus to analyse claims, thought experiments <p>Or</p> <p>Informal</p> <ul style="list-style-type: none"> • Participant makes explicit mention of argument forms/structure (e.g by invoking concepts of modus tollens) and/or properties of these form/structures and such as validity soundness, truth strength or cogency <p>Or</p> <ul style="list-style-type: none"> • Evidence suggesting attending to 	<p>Seakgwa (2017)</p>	<p>(Reading from Morris' text) "Whatever the measure... relevant to the matter of <i>rectificatory</i> justice, for the latter notion is <i>backward</i> looking..." //Okay, well that is true, once you start thinking about welfare maximising, then it's easy to lose sight of the <i>past</i>.// Then the past gets corrected, but in a <i>contingent</i> way, not by logical, sort of moral link.//</p>




<p>arguments and/claims and evaluating them by entertaining objections and disputing or excepting them by further argument (even if enthymemic)</p>		
<p>Check extreme and near-extreme cases (Assists with generating thought experiments):</p> <p>Participant tries to locate a problem with a claim/argument/case by “look for trouble among extreme cases—the first, or the last, or the biggest, or the smallest, or the best, or the worst, or the smelliest...” (Hajek 2014, p. 7) or near such cases.</p>	<p>(Hajek 2014)</p>	<p>“Some philosophers regard 'every event has a cause' to be a necessary truth. At first, one may wonder how to argue against this claim—where should one start? The heuristic guides the search for a counterexample: start with extreme events. For instance, start with <i>the start</i>. The <i>first</i> event is an extreme event: the big bang. There was no prior event to cause it; it surely did not cause <i>itself</i>; and it surely was not retro-caused by some later event—so we have our counterexample.” (Hajek 2014, p. 7)</p>
<p>Death by diagonalization (AKA reflexivity/self-reference) (assists with informal logical analysis):</p> <p>Participant takes a philosophical thesis,</p>	<p>(Hajek 2014)</p>	<p>“Realism is often stated as a thesis of mind-independence: ‘to be a realist about X is to be committed to the mind-independence of X. But what about realists about <i>minds</i>, as most of us are? They are surely not committed to minds being mind-independent.” (Hajek 2014, p. 14)</p>


<p>and makes it refer to itself, or appeals to self-referential cases. (Hajek 2014, p. 13)</p>		
<p>Self-undermining views (assists with informal logical analysis):</p> <p>Participant points out that “the position [i.e. claim or argument] itself falls in the domain that it purports to cover. The proponent of the position potentially faces a charge of a kind of philosophical hypocrisy (presumably unintended)” (Hajek 2014, p. 15)</p>	<p>(Hajek , 2014)</p>	<p>“Truth is relative, not objective” is an oft-heard slogan in these post-modern times. But someone who says it seems to regard <i>it</i> as an objective truth” (Hajek, p. 15)</p> 
<p>Begetting new arguments out of old (assists with generating thought experiments):</p> <p>Participant “transforms existing argument from one domain to another.”(Hajek, p.22)</p>	<p>(Hajek 2014)</p>	<p>“Pollock’s (1983) example of the Ever-better wine causes trouble for the principle of rationality that one should maximize expected utility. The longer you wait to open the bottle of wine, the better it gets. When should you open it? We can specify the case so that any time seems to be too soon; yet never opening it is the worst option of all. Now transform this into a moral problem: the longer you wait to administer the Ever-better drug to a patient, the greater it will benefit her. When should you administer it? We can specify the case so that any time seems to be too soon; yet never administering it is the worst option of all.” (Hajek 2014, p. 19-20)</p>
<p>Some ways to argue that X is possible (Assists with</p>	<p>(Hajek 2014)</p>	<p>“It is apparently arbitrary that the gravitational constant has exactly the value that it does—so that is a reason to think that it</p>


<p>informal logical analysis):</p> <ul style="list-style-type: none"> Participant begins with some other suitable property of X, and infers that X is possible. <p>or</p> <ul style="list-style-type: none"> Participant begins with something else, Y, that is possible and suitably related to X, and infer that X is possible too. (Or begin with two or more things, Y, Z ...) (p.20) <p>or</p> <p>Participant implements one of the following argument forms/strategies:</p> <ul style="list-style-type: none"> X has positive probability. If X has positive probability, then X is possible. Hence, X is 	<p>could have been otherwise, against necessitarians about laws such as Shoemaker (1980).” (Hajek 2014, p. 22)</p> <div data-bbox="539 846 1086 1361" data-label="Image"> </div>
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<p>possible. (p 21)</p> <ul style="list-style-type: none"> • X is conceivable. If X is conceivable, then X is possible. Hence, X is possible. (p.22) • If not-X is apparently arbitrary, that is a reason to think that X is possible (p.22) • Begins with almost-X. Argues that almost-X is possible. Argues that the small difference between almost-X and X does not make a difference to what's possible: either both are possible, or neither is. • Begins with a clear case of possibility, and work by 		 <p>The logo of the University of the Western Cape, featuring a classical building with columns and a pediment, with the text 'UNIVERSITY of the WESTERN CAPE' below it.</p>
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<p>small steps to the case at issue. (Different from the previous method because it had only a single step.)</p> <ul style="list-style-type: none"> • Show that W and Y are each possible, and that X falls between W and Y on some relevant axis, or with respect to some gradable property. • Take any things that are separately possible, and put them together in any arrangement permitted by shape and size: according to combinatorialism, the result is possible. 		 <p>The logo of the University of the Western Cape, featuring a classical building with a pediment and columns, with the text 'UNIVERSITY of the WESTERN CAPE' below it.</p>
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<ul style="list-style-type: none"> Participant starts with a physically possible scenario, applies one of these transformations, and generates another one. 		
<p>Trial and error</p> <p>Participant just runs methodically through the relevant cases/claims or arguments until he finds one that he deems worth selecting</p>	(Hajek 2014)	<p>“Consider the problem of coming up with a single truth function that is expressively complete in the sense that we can express all truth-functional compounds in terms of it. Sheffer (1913) solved the problem: ‘not and’, otherwise known as the ‘Sheffer stroke’, and its dual ‘nor’, both have this property. Coming up with the problem was ingenious; but solving it need not have been. After all, there are only 16 truth functions to check. So, by running systematically through them, it should not take one long to come up with the answer.” (Hajek 2014, p. 26)</p>
<p>Participant applies philosophical system X to specific problem Y, for suitable X and Y.</p>	(Hajek 2014)	<p>“Kantian ethics has been fruitfully applied to a number of moral domains; find one to which it hasn’t. Ethical issues concerning new technologies may be promising places to look— for example, privacy issues raised by the new social networks, like Facebook and Twitter.” (Hajek 2014, p. 31)</p>
<p>See Definite Descriptions in Neon Lights:</p> <ul style="list-style-type: none"> Participant sees “a philosophical thesis or an analysis that involves a definite description ‘... the F ...’ typically presupposes 	(Hajek 2016)	<p>“If an omnipotent, omniscient, omnibenevolent God existed, then such a God would have created THE best of all possible worlds. But the actual world is not the best of all possible worlds; therefore, such a God does not exist.</p> <p>i) Perhaps there are many worlds tied for first place in the relevant ‘goodness’ ordering. In that case the argument needs to be recast: God would have created (at least?) one of them, and the actual world is not one of them.</p> <p>ii) Perhaps worlds get better and better without end—none best. Imagine an infinite sequence of worlds in which there are successively more happy people, or more happy rabbits ..., each world better than its predecessor” (Hajek 2016, p. 441)</p>

<p>that there is <i>exactly one F</i>" (Hajek 2016, p. 440). The participant then asks:</p> <p>"i) Are there, or could there be, <i>multiple F's</i>?"</p> <p>ii) Are there, or could there be, <i>no F's</i>?" (<i>ibid.</i>).</p> <p>Or</p> <ul style="list-style-type: none"> • "A philosophical thesis, or an analysis, that involves an indefinite description '... <i>a(n) F</i>...' presupposes that there is <i>at least one F</i>. Ask whether there are, or could be, <i>no F's</i>." (p. 442) <p>Or</p> <ul style="list-style-type: none"> • For a problematic definite or indefinite description in disguise, use a paraphrase containing the word 		 <p>The logo of the University of the Western Cape, featuring a classical building with columns and a pediment, with the text "UNIVERSITY of the WESTERN CAPE" below it.</p>
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<p>“the” or “an” (as appropriate) (Hajek 2016, p.442)</p>		
<p>Detecting and responding to arbitrariness:</p> <ul style="list-style-type: none"> Participant notices that a claim “has the form ‘... the <i>F</i> ...’, or ... a(n) <i>F</i> ...’ and there are multiple <i>F</i>s, it may be permissible just to pick one of them”(Hajek 2016, p. 444). But then realizes “that choosing one <i>F</i> out of the many candidates will be <i>arbitrary</i> in an unacceptable way.” (<i>ibid.</i>) <p>And/or</p> <p>Symmetry-Breaking Responses:</p> <ul style="list-style-type: none"> Participant insists that one of the candidates 	<p>(Hajek , 2016)</p>	<p>(From idea which didn’t make it into the final text) “The problem is then it's gonna be pretty freakin arbitrary. So if your father was harmed on a <i>Wednesday</i>, you don't get nothing, but if he was harmed on a <i>Friday</i>, you get ur well, on a Friday you get nothing, on a <i>Wednesday</i>, you <i>would’ve</i> got something, if you were well, the other way around, if you were born on a <i>Thursday</i>”</p> 

<p>stands out from some reason, therefore “choosing it over the others is not arbitrary after all” (p.446).</p> <ul style="list-style-type: none"> • Participant points out that the choice between seemingly arbitrary alternatives can justifiably be made according to the decider’s interests. • The participant notes that, as Hajek puts it, “We get to stipulate the winning candidate; having done so, we agree on it thereafter.” (p.447) • Participant asserts that “the [arbitrariness] problem 		
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is not really a problem, because however we reasonably make the arbitrary choice, there will be the same clear winner. While there might in principle be disagreement among the multiple best candidates for some job description, *in fact* such disagreement will not arise” (Hajek 2016, p. 447)


Or

Symmetry-Preserving Responses:

- Participant contends that: ‘all of the candidates are right. Each provides a legitimate option for resolving



<p>the problem at hand.</p> <ul style="list-style-type: none"> • Participant asserts that “none of the candidates are right. The multiplicity of candidates serves to show that the original concept is incoherent, and should be eliminated.” (Hajek 2016, p. 448) • Participant claims that “It’s not that any given candidate is right or wrong. Proponents of different candidates are merely taking different stands on a terminological issue.” (p. 448) • Participant claims that the right/optimal choice is 		 <p>The logo of the University of the Western Cape, featuring a classical building facade with columns and a pediment, with the text 'UNIVERSITY of the WESTERN CAPE' below it.</p>
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<p>indeterminate.</p> <ul style="list-style-type: none"> • Participant asserts that ‘What’s true on <i>all</i> ways of making the arbitrary choice is determinately true. • Participant contends that “What’s false on <i>all</i> ways [of choosing is determinately false. Everything else is indeterminate.” (Hajek, p. 448) • Participant claims that “What’s true/false on <i>all</i> ways of making the arbitrary choice is determinately true/false. Everything else is true <i>and</i> false.” (p449) <p>Or</p> <p>Hybrid Responses:</p> <ul style="list-style-type: none"> • Participant provides 		 <p>The logo of the University of the Western Cape, featuring a classical building with a pediment and columns, with the text 'UNIVERSITY of the WESTERN CAPE' below it.</p>
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<p>response which “combine[s] some symmetry-breaking response (to cull some of the candidates while leaving others live) with some symmetry-preserving response (to treat those that remain even-handedly).” (Hajek 2016, p 449)</p>		
<p>Continuity</p> <ul style="list-style-type: none"> Participant recognizes the pattern “that one variable is a function of another, and small changes in the former should lead to small changes in the latter.” (Hajek 2016, p. 451) <p>And</p> <p>Drawing Inspiration from the Mathematics of</p>	<p>(Hajek , 2016)</p>	<p>“We are surprised, for instance, when we are told that we share 98.4 per cent of our DNA with chimpanzees. How can such a small change in genotype lead to such a large change in phenotype?” (Hajek 2016, p. 451)</p>

Continuous Functions:


- Participant, looks to “the mathematics for a better understanding of continuity, through its treatment of continuous functions. The informal definition of such a function is that small changes in its input value result in correspondingly small changes in its output value” (Hajek, 2016 p. 452)

Or

Discontinuity at infinity

- Participant recognizes “the failure of a natural extension to the definition of




<p>continuity to cases where we can make sense of a function's behaviour at infinity" (Hajek 2016, p. 453)</p> <p>Or</p> <p>Continuity Reasoning in Philosophical Methodology</p> <ul style="list-style-type: none"> Participant applies "continuity considerations to philosophical methodology itself." (Hajek 2016, p.454) <p>Or</p> <p>Continuity and modal induction</p> <ul style="list-style-type: none"> The participant "ampliatively infer[s] a conclusion about the space of <i>possible worlds</i> from a premise about this space." (p 455) 		 <p>The logo of the University of the Western Cape, featuring a classical building with a pediment and columns, with the text "UNIVERSITY of the WESTERN CAPE" below it.</p>
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<p>Mismatch of Degrees:</p> <ul style="list-style-type: none"> Participant notices that “the analysandum does not come in degrees, [but]the analysans does” (Hajek 2016, p. 456) <p>Or</p> <ul style="list-style-type: none"> The analysandum comes in degrees, the analysans does not (p. 457) 	<p>Hajek (2016)</p>	<p>“Berkeley was fond of saying that <i>to exist is to be perceived</i>. (For some reason, he was particularly fond of saying it in Latin.) Now, existence does not come in degrees—it is the ultimate on/off property or attribute. But offhand, being perceived does. Think of perceiving a table in a room that is initially totally dark, slowly turning the lights up using a ‘dimmer’ dial. Or think of things on the periphery of your visual field. Moreover, these provide borderline cases of being perceived; but it is hard to make sense of borderline cases of existence” (Hajek 2016, p. 456)</p>
<p>Replace Non-Extensional Notions with Extensional Surrogates:</p> <p>Participant notices “notion for which truth value may fail to be preserved under replacement of co-referential expressions” (Hajek 2016, p. 463) and “substitutes it for one for which truth value is preserved.” (<i>ibid.</i>)</p>	<p>Hajek (2016)</p>	<p>“Replace talk of <i>necessity</i> or <i>possibility</i> with talk of <i>what’s true at all or some (accessible) possible worlds</i>” (Hajek 2016, p. 459)</p>

<p>Draw a Picture: Participant produces a diagram</p>	<p>Hajek (2016)</p>	<p>“For example, it helps to diagram causal relationships even without entertaining the fiction that causation is merely constant conjunction—either with Lewis-style (1973b) ‘neuron diagrams’, or Pearl-style (2009) causal networks.” (Hajek 2016, p. 468)</p>
<p>Philosophical fridge words: Participant “begins with a topic of interest to [him]. [Then] write[s] down all the keywords [he] can think of on this topic on separate pieces of paper... [He] then rearrange[s] them in various ways, juxtaposing pairs, triples [etc]... [Until he] get[s] something new and interesting.” (Hajek, p.295)</p>	<p>Hajek (2018)</p>	<p>“Here is an example of my own explorations with the philosophical fridge words heuristic. The topic: <i>conditionals</i>. I begin by free associating, thinking of as many words or phrases concerning conditionals as I can—they might, for example, be keywords that one finds in abstracts of various papers on conditionals. Here are some of them (space precludes me from including them all, and it should not matter if some of them mean nothing to you):</p> <ul style="list-style-type: none"> • indicative conditionals • counterfactuals • material conditional • strict conditional(s) • Ramsey test • Adams’ Thesis • no-truth-value theories • embedding • iterations • centering, weak centering • Sobel sequences • modus ponens and violations thereof. <p>Now, start shuffling and combining! Some juxtapositions seem to be unpromising—e.g.,</p> <ul style="list-style-type: none"> • counterfactuals/material conditional. <p>(The material conditional is a non-starter for an account of counterfactuals.)[...]</p> <ul style="list-style-type: none"> • counterfactuals/modus ponens and violations thereof. <p>Could there be violations of modus ponens for counterfactuals? Has lightning struck yet? If not, try moving still closer to it. Add a further word or phrase to our combination. Eventually we will get:</p> <ul style="list-style-type: none"> • iterations/counterfactuals/modus ponens and violations thereof.

		Bingo! (The sound of lightning striking?) Anyone up to speed on the conditionals literature will know of McGee’s (1985) apparent counterexamples to modus ponens involving iterations of <i>indicative</i> conditionals. Now try them for <i>counterfactuals</i> instead. It seems that they are just as compelling.” (Hajek 2018 p.297)															
Add constraints: Participant adds constraints to some aspect of the problem.	Hajek (2018)	“...Many philosophers deliberately impose upon themselves a restricted or privileged vocabulary, and they seek to analyse or understand everything else in those terms—think of Lewis’s (1986) ‘Humean supervenience’ program, or Chalmers’ (2012) project of constructing all of reality out of a limited stock of base truths.” (p. 301)															
Taxonomise and colonise: Participant “draw[s] up a table of distinctions, ways of categorising the things in the relevant domain. [Then] fill[s] in the boxes with existing views, look for empty boxes, then [tries] to fill them with new views that meet their constraints. If there are no empty boxes, [he tries] finer grained distinctions, and repeat[s].” (p. 302)	Hajek (2018)	<table border="1"> <thead> <tr> <th></th> <th><i>Truth-Valued & Probabilistic</i></th> <th><i>Truth-Valued & Non-Probabilistic</i></th> <th><i>Non-Truth-Valued & Probabilistic</i></th> <th><i>Non-Truth-Valued & Non-Probabilistic</i></th> </tr> </thead> <tbody> <tr> <td>Indicatives</td> <td>?</td> <td>Grice</td> <td>Adams</td> <td>Levi</td> </tr> <tr> <td>Counterfactuals</td> <td>Leitgeb</td> <td>Stalnaker, Lewis</td> <td>Edgington</td> <td>?</td> </tr> </tbody> </table> <p>(from Hajek 2018, p. 303)</p>		<i>Truth-Valued & Probabilistic</i>	<i>Truth-Valued & Non-Probabilistic</i>	<i>Non-Truth-Valued & Probabilistic</i>	<i>Non-Truth-Valued & Non-Probabilistic</i>	Indicatives	?	Grice	Adams	Levi	Counterfactuals	Leitgeb	Stalnaker, Lewis	Edgington	?
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Indicatives	?	Grice	Adams	Levi													
Counterfactuals	Leitgeb	Stalnaker, Lewis	Edgington	?													
Contrastive stress: Participant “draws attention to alternative members of a contrast class [by] stressing different parts of a sentence... by mentally <i>highlighting</i> each	Hajek (2018)	Consider: “Smoking a pack of cigarettes a day causes lung cancer”. Highlight “smoking”: <i>smoking</i> , rather than doing various alternative things with a pack of cigarettes— <i>soaking, stoking, stroking</i> ...—a day causes lung cancer. It seems that there is no surprise there— <i>smoking</i> is what matters here. ¹³ Now highlight “a”: “Smoking <i>a</i> pack ...”— <i>one</i> pack, as opposed to other numbers of packs, like none, or two, or three, or ... Hang on—if anything, relative to the latter alternatives, smoking (only) <i>one</i> pack a day seems to help <i>prevent</i> lung cancer. So the causal relation appears to be at least three-place:															

<p>word or phrase in a question or statement, [or] intoning the words “rather than” or “as opposed to”, followed by members of the contrast class. Or [by] <i>italicis[ing]</i> them in a written document over which [he] ha[s] editorial control [etc]” (p.303) this allows the participant “discern which variables depend on which, and which variables are independent of which” (p.303- 304).</p>		<p>C (rather than C') causes E. (p.307)</p>
<p>Turn the knobs: Participant “compare[s] cases that are alike in all respects but one. This allows [him] to isolate the contribution, if any, made by that one respect” (p. 306)</p>	<p>Hajek (2018)</p>	<p>“See Dennett’s discussion of ‘turning’ various ‘knobs’ in Jackson’s (1982) famous ‘Mary’ thought experiment, the centrepiece of his argument against physicalism. Some of the ‘knobs’ may be tacit. For example, it goes without saying that Mary is a human. But we could say it explicitly, and start ‘turning the knob’ of other things she might be—for example, she is a <i>human</i>, as opposed to a supercomputer” (p. 306)</p>
<p>Analogical reasoning: Participant starts with a familiar problem/TE/argument and searches for one with an identical structure and generates claims about the latter based on the</p>	<p>Hajek (2018)</p>	<p>“It should be noted that Morris is clear that the matter of rectification of wrongs committed against groups should be for the present be understood in terms of wrongs committed against individuals. This requirement is not elaborated upon, and omission of such elaborations intriguing. The result is an essay drawing conclusions about answers to moral questions requiring us to abandon moral intuitions, but based purely on reasoning from the philosophy of personal identity.” //Um analogously, I mean if we were to reason purely from um the philosophy uh let’s say// (makes noises with mouth),// um a philosophy that, philosophy of science looking only at um epistemology and um yeah, as opposed, as a sub discipline of epistemology.// Um, then</p>

former (or vice versa).		we can basically cancel out moral philosophy and all its problems. //Um because we gonna reason about, about um moral philosophy questions and cordon off moral intuitions. // Um but do so purely in the basis of um personal identity
Proves too much: “By parallel[ing] [the] reasoning to [an existing] argument... [the participant] reach[es] an obviously false conclusion” (p.308)	Hajek (2018)	By that logic, we're all the incredible beneficiaries of, I don't know, Second World War, 'cause I'm sure without it, my mom and dad would have shagged five seconds later and the I wouldn't have been born, but someone else.
<p>General principles of general ethico-political kind:</p> <ul style="list-style-type: none"> The participant references a general ethico-political kind <p>And/or</p> <ul style="list-style-type: none"> Produces an argument or TE that has such a principle as a premise. 	Miscovic (2012, 2013 and 2018)	<p>Miscevic (2013) refers to the Golden rule an example.</p> 
Intuitions elicited in political TEs: See previous coding schemes	Miscovic (2012, 2013 and 2014)	// Consider the easiest possible case: If A steals B's bicycle, then A should return it. We can justify this core idea by appealing to a number of intuitions. //
Facts and descriptive explanations:	Miscovic (2012, 2013)	urm, so it's clear that he says, the first general principle that he sets out is <i>individual wrongdoers</i> .// Now... in some of these cases, like the North American Indians, Black Americans, that's institutionalised. Affirmative action is a response to an

<p>Or</p> <ul style="list-style-type: none"> Participant refers to facts and/or explanations Participant produces an argument or TE with facts and/or explanations as one or more of its premises 	<p>and 2018)</p>	<p>institutionalised wrong doing, or an institutionalised <i>wrong</i>.// So Apartheid is institutionalised.// I suppose you can look at <i>individual</i> wrongdoers, but that's, I don't think that, urm Black people, descendants of injured persons, back then, urm, I don't think that they ... take issue with <i>individual</i> wrongdoers, I think they take issue with the <i>system</i> and the products of the <i>system</i>.</p>
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