

7. Epistemic Dexterity: A Ramseyian Account Of Agent Based Knowledge¹

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I. Introduction: Metaphysical Epistemology

Virtue epistemology is widely known as a deeply normative form of epistemology, and indeed it is². However, less attention has been given to the fact that it is also deeply metaphysical and empirically committed³. Two metaphysical projects within virtue theory that will be discussed at length below involve (a) *individuating disposition types* and (b) providing an account of the *because of* relation that must obtain between an agent and their epistemic success in order to achieve states of knowledge. Regarding disposition types, one well known challenge to process reliabilism is the Generality Problem (Feldman 1998). This is a challenge to properly individuate processes that has proven difficult for standard reliabilism, but virtue epistemology would appear to give us a principled way to distinguish the processes that matter, namely those that constitute (or are elements of) epistemic virtues. But, a virtue epistemologist will then need a nuanced dispositional taxonomy to ground solid responses to generality type worries and to claim any

¹ An earlier version of this paper was presented at the “naturalized virtue epistemology” session of the Pacific APA, 2012 meeting, by one of us, and then at a workshop on mind and epistemology at UNAM. We are grateful for comments received in those sessions.

² See Zagzebski 1996, Riggs 2008, Pritchard Sosa 2010 and many others for the normative dimension of VE.

³ See contributions from Ram Neta and Peter Graham in this volume for an overtly metaphysical virtue theory, as well as David Copp and Allan Hazlett in this volume for overtly semantic approaches.

advantage over process reliabilism on this score. In virtue ethics, virtues are usually associated with character traits, but virtue epistemologists refer to a greater range of disposition types: Sosa goes for faculties (1991), competences (2007) and most recently dispositions related to action, agency and risk assessment. Greco (1993) appeals to skills and abilities (2010), Zagzebski (1996) and Baehr (2011) use traditional Aristotelian character traits, and all of these broad dispositional kinds have a range of narrower instances. While we can see a competing metaphysics of virtue epistemology here, each account is articulating some form of disposition. Dispositions are the basic metaphysical category at work in virtue theoretic epistemology⁴.

Regarding the *because of* relation, this is essential to the success of virtue epistemology in addressing both the Value Problem with accounts of *agent credit* for true belief and Gettier Problems by properly connecting an agent to their achievements in ways that (seem to) preclude the special mix of good luck and bad luck that generate Gettier type problems⁵. The requirement that a success be sufficiently 'due to' the virtue in the agent engenders a commitment to causal-explanatory facts connecting an agent to their successful outcomes *through the exercise of an ability*.⁶ While the intuition is clear and promising, an adequate account of what it is for an epistemically assessable state of an agent to be

⁴ Since not all dispositions are virtues, a "dispositionalist epistemology" need not be virtue theoretic. Any virtue epistemology will be metaphysically dispositionalist in a broad sense, as motivational elements are often construed dispositionally in more internalist accounts of virtue.

⁵ See Pritchard (2012) for an argument that virtue epistemology alone cannot achieve both, and must appeal to an independent anti-luck condition.

⁶ See Greco & Groff 2013 on the "new Aristotelianism".

sufficiently due to the abilities of the agent has been elusive. Getting clear on the *because of relation* is necessary for any account of properly manifesting an epistemic virtue, and thus for any virtue epistemology with a robust commitment to a metaphysics of dispositions. Since virtue epistemology is agent based, causal explanatory facts connecting an agent to their successful outcomes will involve some form of epistemic agency, motivation, or other “agent level” states with causal salience in success⁷.

These are largely metaphysical issues, and they constitute a certain conceptual core of virtue epistemology. Consider Duncan Pritchard’s (2012) claim that there are two “master” intuitions about what turns true belief into knowledge:

(a) The ability intuition: *knowledge requires cognitive ability, in the sense that when one knows one’s cognitive success should be the product of one’s cognitive ability.*

(b) The anti-luck condition: *when one knows one’s cognitive success (i.e., one’s believing truly) is not a matter of luck.*

The ability Intuition (hereafter just ABILITY) tells us that a true belief is well formed when “it is the product of a cognitive ability, in the sense that when one knows one’s

⁷ This is not to say that all elements of epistemic virtues must be person-level states, just that the necessary conditions for knowledge will non-trivially refer to some person-level states involved in cognitive achievements. Implicit knowledge clearly plays important roles in action selection and other person-level activities. We claim only that some agent-level states must play some significant causal explanatory states in order for any virtue epistemology to be truly ‘agent based’ rather than ‘belief based’.

cognitive success should be the product of one's cognitive ability." (Pritchard 2012). Any skill or ability is a disposition to do something *reliably*, and thus ABILITY is essential to any reliabilist virtue epistemology. The anti-luck condition (hereafter just LUCK) requires that cognitive dispositions must be suitably integrated with the agent's other belief forming dispositions "if we are to think of these dispositions as genuinely reflecting the agent's cognitive agency." (Pritchard, *ibid*). ABILITY and LUCK appear to be two faces of a single intuition, since any cognitive success achieved from ability will typically *not* be a success due to luck. However, Pritchard argues that this is actually false because "these two intuitions in fact impose independent epistemic demands on our theory of knowledge, and that it is only once one recognizes this fact that one can offer a successful resolution of the analytical project." (Pritchard, *ibid*.) Pritchard argues that virtue epistemology nicely provides for the ability condition, but cannot offer an adequate anti-luck condition and is thus not a self-standing general epistemology.

While Sosa and Greco do not accept Pritchard's conclusion, they recognize similar core demands for virtue epistemology. Greco (2010) defines knowledge as a certain form of *success from ability*, and Sosa (2007) defines knowledge as a certain form of *apt performance*. The common project uniting these (and arguably all) virtue epistemologists is to properly understand the nature of cognitive abilities and their explanatory role in epistemic success. Differences between virtue epistemologists emerge in deciding what to include in the disposition types we are to call epistemic virtues, what forms of epistemic success to recognize and the different ways the former might sufficiently *explain* the latter. This is the *core*

project of virtue epistemology, at least on the metaphysical side. There might be some concerns about pursuing this kind of *metaphysically thick* virtue theory in epistemology. Pritchard argues that the core project cannot succeed without borrowing essential elements from outside of virtue theory, while Sosa and Greco have accounts that aspire to achieve precisely this, but which face difficulties of their own in the process.

We seek a novel guide here in F.P. Ramsey's (1927) "success semantics", initially proposed as a theory of truth rather than knowledge by Ramsey, and recently for mental content by Bence Nanay (2012). We propose modifications to Ramsey's success semantics that are amenable to naturalistic analysis and which addresses the core project of virtue epistemology described above in ways that avoids problems facing both Sosa and Greco's accounts. The Ramseyian account is especially fruitful as an account of epistemic agency and nicely unifies a number of disparate and at times unstable areas in virtue epistemology. *We argue that a modified success semantics provides a naturalistic grounding for the core project of virtue epistemology.* Below we examine John Greco's recent account of the "success from ability" defended in *Knowledge and Achievement*. While we agree with much of Greco's account, and it is perhaps the most plausible current version of virtue reliabilism, his contextualism about causal salience creates a problematic rift between the metaphysical and normative aspects of his theory. We diagnose the problem facing Greco below, and then defend an improved account drawing on Ramsey's success semantics.

II. *Greco, dispositions & norms in virtue epistemology*

In his recent book, John Greco (2010) proposes a reliabilist virtue epistemology for knowledge that explicitly requires that the *abilities* of agents serve as the *causes* of their epistemic achievements. Greco's focus on "success from ability" as the driving image for epistemic inquiry is also seen in Sosa (2007), Pritchard (2012), Turri (2011) and others, and thus captures a unifying intuition for a number of important perspectives in epistemology. Greco also has one of the most thorough virtue theoretic accounts when it comes to the *semantic and psychological* underpinnings of reliabilist virtue epistemology. In this section, we critically assess some of the psychological and semantic commitments of Greco's account and provide an alternative proposal that, like Greco's, will ground epistemic assessment in agent-level mental states in the context of *action*, but requires more robust causal and motivational connections between an agent and their successful outcomes than Greco. This account shows all the merits of Greco's (2010) theory without the problematic assumptions discussed below. In the process, we will introduce a new name to contemporary virtue epistemology, Frank Ramsey. One promising aspect of Ramsey's emphasis on action rather than beliefs or propositional attitudes is that it offers the reliabilist a nice way to partially achieve responsibilist epistemic aims. Ramsey (1931) was the first person to espouse reliabilism, but did not have opportunity to develop the idea. Combining this reliabilist commitment with a suitably modified "success semantics" provides a powerful account of epistemic

virtue, and promises to provide a naturalistic way of “thickening” standard reliabilism. Success semantics is an ‘action first’ form of assessment that nicely unifies contexts, interests, motives and abilities in a dispositionalist framework and holds greater promise than Greco’s contextualist account discussed below.

Greco construes the ‘because of’ relation in terms of *causal explanatory salience* and insists that the semantics must be of the subject-sensitive contextualist sort. In particular, *Greco proposes that practical interests will specify which features of a situation are explanatorily salient in the production of true belief.* These features will show a range of agent-responsibility, but also worrisome departures from abilities and virtues. If the practical interests that determine explanatory salience do not happen to give priority to abilities over environments in a given case, then the success cannot be knowledge. This is a different way of shifting the context because here the stakes are not shifting the standards for determining whether our reasoning was rigorous enough, but now on whether the achievement was “causal enough”, so to speak. Greco is quite clear that his contextualism is for causal salience, not stakes and standards. While this route has some advantages for fully deliberate knowledge, there is a lot of knowledge that should not be as variable as Greco would have it under contextualist readings of causal salience.

How is it that context, interests, purposes and the abilities of agents fit together into an account of epistemic virtue? Greco says that the contexts relevant for the evaluation of causal explanatory salience are ‘practical environments.’ For instance, to determine that someone is a good baseball player one needs to specify what kind of practical considerations are relevant. Is the player participating in the major

leagues or a neighborhood game? The causal etiology of belief must be fully specified by the abilities of the agent, but in order to specify such etiology there will be practical considerations that will determine whether or not such abilities are causally salient. Greco says:

In cases of knowledge, S believes the truth because S believes from intellectual ability – S's believing the truth is explained by S's believing from ability. But the success of this explanation requires more than that ability is involved. It requires that S's ability has an appropriate level of explanatory salience. (Greco, 2010, 75)

Greco admits that his account of explanatory salience in terms of causal relevance is far from being a detailed account of the etiological basis of knowledge because it does not offer a theory of causal explanation or the pragmatics of causal explanation-language, which he says, are poorly understood in general. Nonetheless, he argues that, although sketchy and provisional, his account can solve a great deal of traditional difficulties in epistemology (e.g., Gettier problems, Barn façade cases, etc.).

The strategy to answer questions regarding lucky or accidental true belief is to emphasize that the agent's abilities are *not* the direct cause of the belief (they are not causally and explanatory salient in the production of such belief). The absence of the abilities as causes rules out knowledge attribution or epistemic responsibility. Greco connects all these ideas as follows:

What does all this have to do with contextualism? In short, the present thesis is that knowledge attributions are a kind of credit attribution, and that credit attributions in general involve causal explanations: To say that a person S is creditable for some state of affairs A, is to say that S's agency is salient in an explanation regarding how or why A came about. Now add a further, plausible thesis: that the semantics of causal explanation language requires a contextualist treatment. (Greco, 2010, 105-106)

This is certainly a theoretically plausible account of epistemic virtue. It has many advantages, as Greco's book makes clear. But one may have concerns about the contextualist commitments of the proposal, *particularly with respect to causal explanations* and the notion of 'practical environment.' More specifically, the salencies entailed by practical interests of agents may not match neatly (or at all) with the type of considerations that are usually salient in causal explanations. Some practical environments may make the agent's motivations salient more than others, although presumably the agent's causal relevance will be an invariant feature of these contexts where practical interests and the motivations of the agent will vary. If this is the case, which of the contexts should we pick? We will argue that Greco's account is inadequate to answer this question because it parses the semantically relevant features for the evaluation of epistemic virtue too coarsely. The question that has broad implications for naturalized virtue epistemology is whether the right solution for a reliabilist can also account for the epistemic value of an agent's motivations that responsibilists often make central to epistemic evaluation.

There are two aspects of Greco's account that make it particularly problematic. One is the role given to the practical environment, which is not how causal

explanation is construed in general, at least not from a naturalistic point of view. It seems that Greco's move is justified by the unique type of cause that epistemic virtues require: agents, rather than generic physical events (or even *sub-personal* components of the agent that are not cognitively integrated). But then, why insist that it is the semantics of *causal explanation* that matters? Either it is robust causal explanation (as understood in metaphysics and philosophy of science) that matters or it is a more practically oriented, folk understanding of the salience of an event in producing an effect (a folk theory of causality) that matters. We will argue that it cannot be either because they compromise the psychological plausibility of the resulting success attributions. An advantage of the Ramsey inspired semantics examined in section IV is that it explicitly incorporates a psychologically plausible restriction on knowledge attributions.

The other problematic aspect of Greco's proposal is that the causal salience of abilities on his account can be entirely unrelated to the motivational cognitive processes of the agent. While this is a worry for simple reliabilism, Greco is aware that motivation and some form of subjective justification is an important ingredient of a virtue theoretic account of knowledge. For this reason, he suggests that an Aristotelian model may be the best way to understand virtues in general:

Now it seems to me that the Aristotelian model is the better one for theories of epistemic normativity. This is because, it seems to me, knowledge requires both responsibility in one's cognitive conduct and reliability in achieving epistemic ends. But however this issue is decided, the main point is that

virtue theories define the normative properties of beliefs in terms of the normative properties of persons, i.e. the stable dispositions or character traits that constitute their intellectual virtues, however these are to be understood. (2010, 43)

This is a crucial issue concerning the psychological underpinnings of virtues, as well as the general theoretical implications of an adequate naturalized account of epistemic virtue. Evidently, without a detailed explanation of how the normative properties of persons (their stable epistemic dispositions) are included in the causal explanatory salience that Greco endorses for knowledge attribution, one cannot determine whether or not such attributions comport with epistemic norms as understood above.

In the next section, we argue that no strictly causal account of the 'because of' relation is sufficient to provide the explanation needed above. This becomes a problem for any naturalized virtue reliabilism that extends this commitment to explaining epistemic *responsibility* exclusively in terms of causal salience. To be clear, any naturalized version of epistemic virtue must appeal to causal explanation (e.g., reliable belief forming process, stable dispositions to respond accurately given certain conditions, etc.). However, it must also explain how such explanations are compatible with a broad range of knowledge attributions that essentially include *motivational* aspects of epistemic agency, such as conscientiousness and open-mindedness.

Before proceeding, it is worth noting how explicit Greco is about the importance of responsibility for reliabilist accounts of epistemic virtue. He says that an agent S is epistemically responsible “if and only if S’s believing that p is properly motivated; if and only if S’s believing that p results from intellectual dispositions that S manifests when S is motivated to believe the truth.” (Greco, 2010, 43) He then defines epistemic virtue as follows: “S’s belief that p is epistemically virtuous if and only if both (a) S’s belief that p is epistemically responsible; and (b) S is *objectively reliable* in believing that p.” (2010, 43, our emphasis). It seems that the upshot of these definitions is this: suppose that two agents are identical with respect to the objective reliability of their cognitive processes. Every time they form a belief, they have the same degree of objective reliability (their beliefs have an identical likelihood of being more true than false).⁸ Suppose one wants to attribute knowledge to these epistemic agents. Their being reliable is a big plus in their favor. But this is not enough for a reliabilist virtue epistemology. In assessing their epistemic deliverances and achievements, their abilities must be causally salient (i.e., the agents must arrive at true belief because of their abilities). This is why a reliabilist virtue epistemology is much more fine grained than standard reliabilism. According to standard reliabilism, both agents are equally justified and if their beliefs equally comply with some safety or sensitivity constraint, then they both know. For any virtue epistemology, one also needs to show that the agent arrived at such beliefs because of their epistemic abilities, which will typically include the proper motivation to use those abilities. Thus, it is perfectly plausible to not

⁸ See Goldman (1992) for a classic account of the objective or scientifically constrained standards for the reliability of cognitive epistemic processes.

attribute knowledge to one or both of these agents, even though their beliefs are equally reliably produced.

Now the worry is how we can include motivational states of the agent in an account of knowledge attribution that appeals exclusively to the (robust) *causal* salience of abilities? What we shall argue is that, since reliabilist virtue epistemology provides a more fine grained theory of knowledge attribution, the semantics for such attributions must not appeal exclusively to causal salience. Rather, the semantics for such attributions must be as fine grained as virtue theoretic achievements generally require, and will include, somehow, the motivational aspects of epistemic agents.

For a naturalized virtue epistemology of the reliabilist kind it is particularly pressing to address this issue with psychological evidence. The purpose of the next two sections is to provide the outlines of a reliabilist theory of epistemic virtue with a semantics that explicitly incorporates aims, motivations, and goals, and is based on the most recent psychological evidence.

III. *Causality: folksy, metaphysical and psychologically constrained*

Greco's *explanatory salience contextualism* does not really appeal to the motivations of the agent, rather it focuses exclusively on the contextually variable "causally relevant" factors of a situation, which might or might not include motivational states of the agent being assessed. One worry here is that agents are assessed at least partly on their motivations. At a minimum, an epistemically virtuous agent will not

having motivations contrary to the aim of belief (truth, knowledge), and this is especially true in attributions of *credit-based success*. This element of epistemic assessment is clear when an agent has a defective motivation, say a desire for comforting beliefs rather than true beliefs. While this seems clear enough, properly understanding the 'desire for truth' will be an important and perhaps challenging project for naturalized virtue epistemology, and specifically for the prospects of responsibilist virtue epistemology. We can only gesture at how the epistemic-Ramsey-success account defended here can properly locate the role of desires in responsibilist virtue, but we will do so in the concluding section.

The examples offered by Greco concerning causal salience are aimed at illustrating the contextualist semantics he favors. Some of them are clearly based on practical considerations that the folk use to attribute knowledge based on abilities (such as the example of the gambler, his wife and his friends, who have different standards and practical interests regarding his alleged abilities for choosing winning horses).⁹ Other examples concerning simple causal salience, rather than knowledge attribution, appeal to practical interests, but the context seems to be framed in a more metaphysical setting and the impression one gets from these examples is that they concern causality in the strict metaphysical sense, rather than causality as understood by the folk.

For instance, Greco's example concerning the car accident is presented in terms of two different standards for salience, both based on practical interests. In

⁹ One problem with this example is that the ability to succeed in gambling may not be an epistemic virtue at all, especially if one considers what is at stake in gambling (which includes risk and luck as defining features). But we will not focus on this problem here.

describing an accident scene, the cops focus on the high speed, and for them the high speed of the car is what is causally salient (the cause of the accident), while for city planners what is causally salient is the deficient design of the road. But clearly, the limits on what is causally salient in this example are very different from the plausible metaphysical or psychological limits concerning the gambler's example. In the car accident case, the actual speed of the car is a lot more important than the interests of the cops and the actual design of the road is crucial for anything the planners have to say.

What is causally salient about the accident, therefore, depends on *objective information that is preserved in the causal chain*.¹⁰ Absent one of the facts concerning road design or speed, the accident would not have happened. This sounds like metaphysical causality, dependent on facts that remain *invariant* across different interpretations based on practical interests. For example, at some point, one can imagine a judge asking: "I know that the road in question is in very bad shape and that the speed limit was crossed. But I want to know exactly why the accident happened? Which of these two salient features was *objectively* more relevant?" This is the kind of question that forensic scientists have to answer all the time. Robust causal salience requires objective relevance and information preservation, and some form of this will claim describe what it is to properly *manifest* a disposition¹¹.

One may think that forensic scientists bring new practical interests to the table. But notice that whatever interests they bring in, their assessment will be fact

¹⁰ See Salmon, W. C. (1998) for discussion on the importance of objective information-preservation in causal chains.

¹¹ For a nice account of the distinction between 'because of' and 'manifesting', see Turri (2011).

involving and constitutive of a causal chain. This is in sharp contrast with the gambler example. These incompatible attributions of knowledge based on the salience of the abilities of the gambler (or lack thereof) do not seem to be constitutive of two different causal chains that preserve objective information about a situation. On the contrary, they fully seem to depend on the practical interests of the gambler's wife and his friends. The wife's concern for not having money might explain her hesitance to attribute the epistemic ability underlying the alleged 'knowledge that a horse will win' to her husband, while the other gambler's interests in finding tips for winning bets explain their eagerness to attribute such knowledge. But this sounds just like hesitance and eagerness. More precisely, it is hard to see any causal chain being established by these practical interests that could preserve two different ways in which objective information is preserved. In the previous case, there are two alternative causal chains that preserve objective information. With the gambler's case there is hardly one (the alleged causal chain seems to be a feature of how different subjects interpret the situation). So this seems to be a folksy understanding of causality that is not really fact involving, at least not in the robust counterfactually supportive way that causality generally requires, e.g., the horse could have won just by pure luck and the gambler just had a lot of consecutive lucky guess—a very *nearby possibility* in the context of gambling, which is problematic for Greco's notion of 'practical environment.'

But even assuming that these examples are unproblematic, the abilities of *agents* need not be captured by a folk or metaphysical understanding of causality. One needs to know more about the psychology of agents and their motivations in

order to determine whether they are satisfying the constraints imposed by a (reliabilist) virtue epistemology. What type of agency will be required to explain epistemic success? The psychological evidence has shown that introspective and conscious reflective constraints on epistemic processes are counterproductive¹². People are very bad at determining their own reasons for action and decision making, and they violate very simple rules of logic and probability when presented with irrelevant information which is, incidentally, potentially constitutive of a practical environment, like in Kahneman and Tversky's famous "Linda" case.¹³ So why would one hope that agents are any good at determining the basis for actions of other people? It seems that the best thing to do is to focus on paradigmatic reliabilist cases of cognitive dispositions: perceptual beliefs, memory, communication and testimony, language acquisition, motor control, basic forms of inductive and deductive inference and even the proper use of heuristics. All of these involve abilities and an associated range of epistemic successes, but they also allow for a much more *minimal* sense of agency and thus avoid worries about the truth conduciveness of reflective and epistemically costly forms of reasoning that might be required for knowledge by a (reflectively) more demanding virtue epistemology.

Even in the case of perceptual belief one must be careful. Any epistemic account of the causal salience of the abilities of agents must be informed and constrained by the relevant psychological evidence. Greco specifies two important psychological constraints on epistemic agency. He says that it need not involve

¹² See Kornblith 2013 for a full exploration of the limits of reflection in achieving knowledge.

¹³ For a defense of virtue epistemology against the situationist challenge, partly based on this evidence, see our (2014) paper.

conscious awareness, and also that it must allow for cognitive integration with other reliable epistemic processes, in a way that guarantees sensitivity to those processes. We will take these important constraints for granted. Epistemologists have assumed that there is only one type of agency involved in basic perceptual belief forming processes and reliabilists, in particular, have assumed that all perceptual belief is reliable and sensitive to accurate information from other *perceptual* cognitive processes (the qualification is important, because these processes are not in general influenced by inferential reasoning, i.e., they seem to be encapsulated, although this is not entirely uncontroversial).

However, not all the cognitive integration for perception is epistemically sensitive. Perceptual illusions illustrate this point. One consciously sees the difference in length of two lines in the Müller-Lyer illusion, even though one knows (and therefore truly believes) that they are the same length. Our conscious visual perception is in this particular case, impervious to reliable epistemic influence. But surprisingly, motor control is epistemically sensitive to such information, even in cases of perceptual illusion. This is not because conscious belief influences motor control. On the contrary, motor control is not influenced at all by conscious belief. What is striking about this finding is that the perceptual system has a divided agent in this case. One perceptual “half” of the agent is influenced by the illusion and the other one is sensitive (in the epistemically relevant sense of the word).¹⁴

¹⁴ This way of talking about divided agency is not new, and actually has become quite standard in cognitive psychology. See for instance, Kahneman, D. (2011), who distinguishes between Systems 1 and 2 (according to Kahneman, two different forms of epistemic agency, one reliable and the other unreliable and susceptible of being influenced by irrelevant information).

For instance, in the Müller-Lyer illusion, although the subjects' conscious self-report is inaccurate and reflects the illusion's cognitive influence, their motor control (specifically their unconscious manual behavior for grasping) *is accurate* and *not influenced* by the illusion. This seems to suggest that conscious perception has little influence on action. However, Stottinger and Perner (2006) showed that although motor control is not influenced by the illusion, cognitive processes that involve agency for *action selection*, just as conscious perception, are influenced by the illusion.

In their experiment, Stottinger and Perner presented subjects with vertical lines grouped in two sets (one with open brackets and the other with closed brackets, as in the standard Müller-Lyer illusion). When asked 'which gang of lines would you fight?' subjects chose the "smaller" lines although their motor control in the absence of this question did not distinguish between the sets of lines, because it was not influenced by the illusion. This finding demonstrates the dissociation between action selection and motor control. Morsella and Bargh (2010, 7) say that this dissociation occurs because inborn or learned information from the ventral stream (which is associated with conscious urges) constrains action selection but not motor control.¹⁵

Conscious inclinations or urges about fighting are clearly irrelevant for reliable perception. But they are certainly constitutive of practical interests that create what Greco calls 'practical environments.' This finding strongly suggests that one should not focus on the practical environments that make a causal narrative

¹⁵ See also Goodale, M. A. (2010).

(folksy or metaphysical) salient. In this case the salient ability of the agent is unreliable, given the fighting practical environment, while in the practical environment of grasping the object, the ability of the agent is reliable. Thus, one needs to focus on the agent's psychology to constrain causal chains based on stable epistemic dispositions, regardless of how practical environments are construed. In other words, the order of explanation should start with the agent's psychology, not with the practical environments for causal salience and practical interests. For this reason, folksy narratives seem irrelevant for epistemic responsibility, while metaphysical ones seem too broad to really explain it.

The information for action selection based on conscious inclinations may lead to good practical decisions, but not to reliably produced true belief. Accurate motor control concerning unconscious information about length, on the other hand, is a precondition for successful navigation. So it makes sense that the epistemically relevant information that allows agents to succeed, based on their knowledge of the environment, ignores, or is insensitive to, the epistemically *irrelevant* conscious information concerning who to fight, and related practical interests based on conscious urges.

Epistemic success (achieving true belief) from epistemic virtue seems to be guaranteed only at the motor control level in this particular example, but the dissociation between motor control and action selection extends to many forms of agency. Crucially, cognitive integration for motor control processes that lead to success in a reliable fashion is insensitive to epistemically irrelevant inclinations, or highly sophisticated theoretical or philosophical beliefs, in spite of the fact that

those inclinations may underlie practical interests. However, as the example just mentioned shows, cognitive integration for conscious processes and action selection is, at least in the case of illusion, sensitive to epistemically irrelevant information. So motor control knowledge complies with the right kind of cognitive integration required for very *stable epistemic virtues*.

Epistemic virtues are generally described as stable dispositions attributable to an agent. The more stable the disposition, the more successful the agent. The less sensitive epistemic virtues are to practical or highly theoretical considerations, the more stable they will be, and vice versa. Epistemologists need to be selective and careful when they talk about epistemic agency. A rich sense of agency that includes all sorts of conscious and unconscious inclinations is problematic (some abilities of the same agent turn out to be unreliable in some situations, while others tend to be highly reliable, even though the perceptual stimulus is the same).

Moreover, motor control knowledge of the type that is involved in grasping objects is firmly associated with *facts* about the environment, and the success of agents is contingent upon these facts. True beliefs about environmental features are formed reliably because of these virtues, thereby allowing agents to avoid errors and lucky guesses across a large variety of situations. So there is counterfactual dependency between the success of agents and these stable epistemic virtues that reliably form true beliefs about facts. This is the type of counterfactual dependency that is indispensable for a causal account of epistemic virtue in terms of the 'because of' relation: metaphysically plausible and psychologically informed. But this does not mean that practical reasons, conscious action selection and introspection are

epistemically irrelevant in general. As Greco says, there may be epistemic virtues of many different kinds (not necessarily associated with knowledge, but with other epistemic goals). Obviously, conscious perception is also highly reliable if not disturbed by illusions. But the point is that the same epistemic agent may manifest radically different abilities at any point, concerning the same stimulus, and therefore, the notion of agency must be psychologically construed in order to provide a naturalized virtue epistemology.

IV. Success semantics: the constraints on causality and cognitive processing

An important difficulty with respect to Greco's characterization of the 'because of' relation is that causal salience based on practical interests does not necessarily preserve objective information constitutive of causal chains. More specifically, knowledge attribution becomes problematically dependent on practical considerations concerning causal salience that assume a uniform type of agency, which does not comport adequately with the experimental evidence on action selection and motor control. This is a significant problem for the prospect of a reliabilist-naturalized virtue epistemology.

The counterfactual supporting generalizations that are characteristic of causal relations seem to demand a more direct correlation between the agent's success and the causal conditions required for their success, which should be confirmed experimentally. Practical interests may be relevant for some aspects of knowledge attribution (particularly with respect to how the term 'knowledge' is

used by the folk), but they do not seem to help explain naturalized epistemic virtues. Moreover, this causal requirement is hard to square with a semantics that centers on the motivations and goals of agents.

It seems that a plausible way to address these problems is by offering a different semantics for knowledge attribution with quite unique features (e.g., causal relevance compatible with naturalistic constraints, motivational components and abilities of agents). We shall argue that the best candidate to fulfill this role is the so-called 'success semantics,' proposed originally by Ramsey (1927). Ramsey said that knowledge is true belief that is *achieved by a reliable process* (1931). Independently of this thesis, he also proposed that the truth condition of a belief is the condition that guarantees the success of *desires* based on that belief.¹⁶ (1927, 144) These theses entail a version of reliabilism that has significant advantages because it incorporates motivational-cognitive factors into our account of epistemic abilities. The question is how Ramsey's original account of content can be tailored to accommodate the specific requirements of reliabilist-naturalized virtue epistemology.

True beliefs, according to Ramsey's proposal, can be defined as *functions* from desires (or goals) to actions that cause agents to behave in ways that succeed in satisfying their desires or goals.¹⁷ This characterization defines belief-forming processes as functional operations or procedures that determine a mapping from an input (i.e., a desire or goal) to an output (a concrete action or the fulfillment of the goal), and it has the advantage that it does not focus *exclusively* on beliefs and their

¹⁶ This formulation of Ramsey's proposal is due to Whyte, J. (1990).

¹⁷ See Bermudez, J. L. (2003, 66).

contents (propositional attitudes and possible worlds). As required by virtue epistemology, success semantics focuses on the agent and her epistemic motivations, and starts the causal order of explanation with the epistemic abilities of agents.

Moreover, this account mirrors the structure of *dispositions*, which have antecedent conditions that must be satisfied for the manifestation condition to occur, and according to a standard characterization of virtues, epistemic virtues are stable dispositions that manifest in true belief. This means that epistemic virtues, so characterized, may comply with a *safety condition* according to which, if an agent knows that something is the case, then her desires could not easily have gone unsatisfied. This is explained by the fact that the true belief could not have easily been false given that it was reliably produced. This success will also be due to the agent because the satisfaction of desire will be due to some action of the agent. It is important to emphasize that, as a general theory of content and truth, success semantics is explicitly a *causal theory*, because, as Peter Smith (2003) says:

For certain beliefs, the content of the belief is that p just if, for any appropriate desire, actions caused by that belief combined with a desire will be successful in realizing the desire's object just in case that p . And of course, there is no magic about the relation between its being the case that p and successful action: it will be a causal condition for success.
(Smith, 2003, 49)

As mentioned, truth can be defined similarly, by stating that a true belief is one that

causes successful actions, if combined with appropriate desires.¹⁸ A very important feature of this definition is that it appeals to the *causal powers* of beliefs in conjunction with *motivational* states of agents, thereby allowing for a naturalistic account of epistemic motivation. The condition that must obtain for the satisfaction of desires is one that must be satisfied reliably. Success is, obviously, not guaranteed across all possible worlds. Rather, the causal powers of beliefs manifest only in conjunction with desires at a specific set of worlds, determining a contingent relation among them.

This also maps neatly with the metaphysical characteristics of dispositions, their causal bases and their manifestation conditions. Coupled with reliability, this account says that: *a belief is true if and only if, in conjunction with the right motivation, actual and possible actions caused by the belief are typically (reliably) successful.*¹⁹ The condition that must obtain for the satisfaction of desires or motivations is called the ‘utility condition.’ Mellor (1991) describes it as follows:

[We] can’t equate a belief’s truth conditions with those in which every action it helps to cause succeeds. But we can if we restrict the actions to those caused just by it and some desire. Then its truth conditions are what I shall call its ‘utility conditions’: those in which all such actions would achieve the desired end. (Mellor, 1991, 23)

This restriction is crucial because it shows that *motivational components are fundamental to constrain the range of causally relevant doxastic attitudes*, as well as

¹⁸ See Mellor, D. H. (1991).

¹⁹ See Blackburn, S. (2011) for more advantages of success semantics as a theory of content.

the *type* of cognitive process that leads to success. These kinds of issues are also very relevant to the core project of virtue epistemology discussed in section I above, which centers on individuating disposition types and clarifying the causal-explanatory role of abilities in successful outcomes.

But despite its advantages, Ramsey's success semantics needs to be modified, so that one obtains not a semantics for true belief, but for knowledge attributions and our account of what it is for a true belief to be sufficiently *because of* the epistemic virtue of the believer. In other words, the beliefs in question of course must be true, what needs semantic evaluation is whether or not true beliefs are produced by virtuous epistemic dispositions. We claim that a success semantics for epistemology can provide valuable advances in understanding the etiological nature of knowledge by unifying the following desiderata in a straightforward action-first normative-factive principle that locates the agent right at the center of evaluation.

- (1) Provide the *right kind of causes* - reliable psychological dispositions of agents, as in the case of motor control abilities.
- (2) these dispositions must also be attributable to the agent in a way that generates credit for any epistemic success that might be achieved because of the causal connection in (1)
- (3) explain cognitive integration and the epistemic standings it gives rise to
- (4) motivational states are also included in the dispositions that manifest knowledge and sufficiently involve the agent.

This is a plausible extension of success semantics because knowledge is a type of

epistemic success. The payoff is that all the naturalistic advantages of success semantics can be used to give a virtue theoretical account of knowledge. While the role of desires is central here, but a ramsey-success is also constrained by facts in the world outside the agent. Think of the sense in which a Ramsey-success is fact involving this way: If you perform a complex task, like playing piano, it seems obvious that the set of beliefs that would be required to succeed in hitting the keys is larger and more varied than those you would choose based on how you want to hit the keys

A modification of Ramsey's success semantics yields the following straightforward account of epistemic achievements, which will need further refining below: a virtuous cognitive disposition is one that causes an agent to reliably satisfy his or her epistemic desires. More specifically, the truth condition for the attribution of an epistemic achievement is the condition that guarantees the success of epistemic goals, and the action is also caused by abilities attributable to the agent. Knowledge attributions are adequate when they are based on the motivational and doxastic components of abilities that produce true belief. In the specific case of knowledge, the only relevant desire may be the desire to believe the truth and avoid falsehood (See Greco, 2010). Other desires may aim for the means to truth (say the desire to have justified beliefs), or for different epistemic achievements such as understanding and intellectual creativity.

This establishes a naturalistic semantic constraint on knowledge attribution specifically, and not a constraint on propositional content in general, as Ramsey

originally proposed. The variables salient for explaining success involve: (a) desires in the agent (b) causal relations independent of these desires (c) successful outcomes caused by (a) and (b). But this needs unpacking, because of the findings concerning motor control and action selection. A Ramsey-success cannot plausibly require the satisfaction of a *fully conscious epistemic desire* to believe the truth. Rather, we propose that it is a motivational *inclination* (which may be unconscious) that must cause the action that constitutes or causes success. Manual behavior manifests the true belief (or at least an epistemic entitlement) that the lines are equal, while the response for action selection does not. The motivational inclination in manual behavior is to succeed in accurately selecting lines because of the fact-based aspects of those lines. The abilities that underlie successful manual behavior are stable, even in the presence of illusory stimuli that trick conscious perception. Causality is specified by the facts, the abilities of the agent and the agent's success rate, and not by narratives involving practical interests.

This may be the best way to achieve a naturalistic version of epistemic responsibility. As mentioned, Greco chooses explanatory salience contextualism for the semantic evaluation of knowledge attributions, but this semantic approach does not really appeal to the *motivations* of the agent, and rather focuses exclusively on the causally salient factors of a situation, as specified by the interests of the attributor. An advantage of the present account is that it focuses on *both* causally relevant factors and motivational components of cognitive dispositions.

V. *Objections*

The situationist objection to this proposal is as follows. Virtue epistemology does not need this kind of help. These divided agent findings actually have a skeptical consequence, namely, that in many circumstances, abilities are unstable and produce false belief. In particular, the findings on human rationality suggest that there are two systems, 1 and 2. System 1 is highly dependent on context, and systematically trumps the careful, though slow, epistemic processing of system 2. A divided epistemic agent is the source of worries about the stability of epistemic dispositions, and this is evidence against a reliabilist version of epistemic virtue.

A response to this objection is that the findings on systems 1 and 2, as well as the findings on motor control and action selection, are compatible with a naturalized virtue epistemology based on very robust abilities, confirmed by experimental evidence.²⁰ Motor control abilities are remarkably sensitive and robust. Other forms of robust abilities may be found for quick inferences, across different situations, if one assumes that success rate is crucial for knowledge attribution. Notice that the difference between systems 1 and 2 is unhelpful in the case of the illusion of length. One is squarely within system 1. But this does not open up a situationist challenge for perceptual belief. Rather, it calls for a psychological constraint on the semantics for knowledge attribution that highlights the importance of motivations, like success semantics.

²⁰ See “Situationism, Naturalism and Epistemic Virtue” (Fairweather and Montemayor 2104) for a detailed defense.

Another objection is that skepticism about folksy knowledge attributions (which seem to be the relevant ones that need explaining) seems to be entailed by this proposal. If one cannot account for the person in the street, attributing knowledge to her peers, then the threat of skepticism with respect to normal knowledge attribution is significant, because it seems that only experts will be able to adequately attribute knowledge to subjects.

The case of the lines is just an illustration of how epistemic agency is not a uniform and monolithic phenomenon. Rather, it comes in many varieties and involves many different abilities. But, in general, *success* is a good guide to accurate knowledge attribution, and so no skepticism about folksy knowledge attributions follows from our proposal. However, for a fully naturalized virtue epistemology, the most stable virtues must be identified, and motor control abilities seem to be more stable than action selection ones. In other words, motor control abilities, because of their importance in successful navigation, seem to be a model for robust epistemic virtue. Agents have a psychology with a rich variety of these epistemic virtues, which underlie folk attributions based on the success of agents. Because of the success rate produced by these abilities, these attributions can approximate the psychological constrained ones very closely.

In order to avoid confusion, it is important to clarify that although psychological mechanisms and processing are not transparent (either introspectively or by judging the abilities of others), success is *evident* in the epistemic achievements of agents. In other words, the manifestation of these virtues is plainly in view. If agents get things right in many cases, then this by itself is

evidence that they have robust epistemic dispositions to form true belief. Findings on how some epistemic stable dispositions get tricked under laboratory circumstances should not be interpreted skeptically, particularly in cases where information is ambiguously presented (e.g., set inclusion and likelihood, understood abstractly or with a concrete example concerning practical considerations).

Another objection is that unconscious motor control does not manifest in true *belief*, because beliefs have a compositional-inferential structure that epistemic abilities based on unconscious inclinations lack. A response to this objection is that if virtues had to necessarily manifest in conscious true belief, then that would place a psychologically implausible restriction on virtue theories. Another related response is that, given the psychological evidence, a naturalized epistemology should liberate the notion of what counts as a doxastic attitude. These responses have been carefully defended in the literature, so we shall not elaborate on them here.

An important source of the intuitive power behind the notion that agents are responsible only when they are in full conscious control of their actions comes from analogies with moral responsibility. How could one be morally responsible for an action if one is unconscious of producing such action? It is true that, in general, there seems to be a kind of a priori necessity to define moral responsibility in terms of fully conscious (perhaps even reflective-introspective) awareness of the action and one's own motivations to perform such action. But although analogies between moral and epistemic responsibility are sometimes useful, they are not useful in the specific case of ability attribution. Epistemic agents may succeed based on abilities

of which they lack conscious access (even though conscious access is compatible with such success).

It is known that accessibilist versions of internalism may be too strong, even if one defends an internalist view of justification.²¹ For reliabilist theories that are coupled with motivations in order to generate a naturalized virtue epistemology that emphasizes success, there is no reason to think that a strong reflective or conscious requirement is necessary for epistemic virtue. Greco certainly does not endorse such a requirement, and given the psychological evidence, it would be counterproductive to impose such constraints on naturalized epistemic virtues.

With the type of virtues discussed in this paper, the epistemic agent is not in absolute, conscious reflective control of her epistemic achievements. But the agent is *sufficiently* in control to be the causal source of epistemic success, and this is all a virtue epistemology along reliabilist lines needs. With respect to the kind of motivations that epistemic virtues must have, likewise, these can be of a very minimal kind (unconscious and unreflective), such as inclinations to believe the truth about features of the environment in navigation.

A related objection is that knowledge produced by motor control-like abilities is dumb, or animal-like. This account is, according to this objection, too minimal to explain the subtleties of traditional epistemological issues, such as skepticism, justified withheld judgment and meta-virtues in general. It also seems to be too broad, besides being too minimal. All sorts of dumb creatures count as having

²¹ See Feldman and Conee (2001).

knowledge (basically all creatures that can navigate have knowledge of the environment).

One response to this objection is that the account of virtue epistemology we are defending is naturalistic, and therefore, based on the empirical evidence. The empirical evidence has shown consistently and overwhelmingly that highly reflective conscious processing is by no means required for epistemic success. On the contrary, evidence has shown that highly reflective conscious processing gets in the way of epistemic successes.²² This is enough to respond to this objection.

With respect to the objection that this account is too broad, it is crucial to clarify that our account does not restrict epistemic virtues to navigation and animal-like behavior (although we see nothing wrong in characterizing success from ability of the animal kind as knowledge). What we are proposing is that epistemic virtues must be very robust dispositions, and therefore, motor control-like. Knowledge of syntax is a good illustration of what we have in mind. Knowledge of syntax seems to be uniquely human. It is the result of unconscious abilities and cognitive processes that are extremely robust. Children can learn any language in a highly unmonitored, unconscious and unreflective way. Thus, knowledge of syntax is an example of a highly sophisticated epistemic achievement that is motor control-like.

Finally, there are two objections that are based on the empirical evidence.²³ One objection is that motor control seems to be best understood as strictly sub-personal, and therefore that these abilities seem to be a collection of fragmented capacities that have little in common. If so, these abilities seem inadequate to

²² See Kornblith (2008).

²³ We are grateful to Lauren Olin for bringing these objections to our attention.

account for knowledge that is attributable to the agent *as such*, because they are only attributable to fragmented capacities of the agent that may not be fully integrated with her motivations.

A response to this objection is that all the examples of epistemic abilities that we have used (and the only ones our account would consider as candidates for producing knowledge) involve representational capacities at the organism level (e.g., syntax processing, grasping an object based on the motor intention to do so, etc.). Moreover, as mentioned previously, we are assuming the criterion of cognitive integration, which Greco uses to respond to the odd or fleeting processes objection.

Another objection is that some experiments (e.g., Glover and Dixon, 2002) seem to suggest that motor control cannot be decoupled from semantic information, in such a way that semantic information systematically affects the reliability of motor control, thus challenging the modal robustness and reliable character of these abilities. A response to this objection is that, indeed, there are multiple findings showing how semantic information decreases the accuracy of kinematic responses, such as grasping. However, the same body of research shows that this happens *only at the action selection and planning stage*, which is conscious. Like the example we offered before, unconscious motor control is not hampered by this information. So, actually, all these findings *support* our approach.

An alternative reply to this objection is that the fact that some information interferes with the speed and accuracy of a behavioral response does not entail that the abilities involved are unreliable. In the Stroop task, the interference between inclinations (the automatic inclination to read a word vs. identifying a color) does

not entail that the capacities involved are unreliable because of context sensitivity. The capacities to read and detect color are *incredibly reliable* across subjects, in many conditions. Interference only shows that having two inclinations affects processing.

Conclusion

The semantics for knowledge attribution that a naturalized virtue epistemology requires must include motivation. This is important not only because of theoretical considerations, but also because the empirical evidence indicates that this is needed. While a complete naturalized virtue epistemology, based on the main tenets of reliabilism, is still a work in progress, it is important to specify the constraints and contours of such a theory. We argued that Greco's practical interests based semantics fails with respect to the theoretical requirements of virtue epistemology and the psychological evidence. An alternative semantics must satisfy these requirements.

As Edward Craig (1990) says, subjects use knowledge attribution to flag good sources of information. Knowledge attribution based on motor control abilities that underlie successful navigation certainly counts as a useful way of flagging good sources of information. Successful navigators need to encode information that is constantly changing by eliminating noise and unreliably formed beliefs. The evidence suggests that humans and animals have a large repertoire of these

epistemic skills, and they can form the basis of a naturalized virtue epistemology, like the one Greco envisions.

Motor control-like abilities can be highly sophisticated and normative, such as those involved in unconscious syntax learning. Conscious integration may lead to knowledge too, obviously, but the integration must be such that the general constraints of success semantics are satisfied. The strong reliabilist and psychological constraints of a naturalized virtue theory require that the basic abilities that underlie knowledge be motor control-like. Thus, one can integrate motor responses with conscious information, and have more complicated inclinations, such as withholding judgment. But none of this requires strong reflective or accessibilist criteria.

However, there may be room for some strongly responsibilist epistemic virtues for agents, such as conscientiousness. One may construe such virtues in terms of meta-reliability. This connects with Craig's proposal that flagging reliably reliable sources of information (a second order form of reliability) is what drives knowledge attribution, which has important implications not only for virtue epistemology, but also for social and individual epistemology in general.

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Appendix

Success semantics depends on aggregation (because reliability depends on rate) and sources of information. Knowledge attributions are not based just on success (blind success) or just reliability (independently of motivation). Knowledge attributions, therefore, depend on success that manifests in reliably produced true belief in the context of specific epistemic inclinations of an agent. But how does this semantics fare against the alternative proposals?

We argued that Greco's gambler's case is not a case of knowledge. Our proposal accounts for this, because there are no fact-involving aspects of the situation that could constitute a *utility condition* (i.e., luck would do). However, many cases of animal knowledge are clearly within the scope of our proposal, and qualify as knowledge from epistemic ability and inclinations. Some highly sophisticated forms of knowledge, such as knowledge of syntax, turn out to be analogous to these forms of knowledge. So our proposal has the advantages of Greco's naturalistic account, without the problems explained above.

How about other forms of contextualism, besides Greco's proposal? We shall focus on Jason Stanley's (2005) account, for the purpose of conciseness. The present proposal is contextualist in the sense that knowing information about facts and the truth-conduciveness of beliefs will not suffice for knowledge attribution. One also needs to know two extra pieces of information: whether the reliable dispositions to produce true belief are attributable to the agent, and whether the agent had the inclinations to achieve true belief with respect to a specific epistemic task. Depending on the task, the standards of evaluation change, so this is one source of contextual variance. Another source of variability concerns the modal robustness of dispositions (they do not manifest necessarily in their consequents across all possible worlds). But instead of cashing out these contextual variants in terms of interests, we propose to cash them out in terms of the more familiar metaphysical

requirements for the manifestation of dispositions, which are compatible with contextualist interpretations.

Thus, we think one can obtain very similar results to the ones Stanley reports by appealing to intuitions concerning success from ability, rather than by appealing to how high or low the practical stakes are. Consider the case of Hanna and Sarah who need to deposit a check in the bank. Yes, it seems that the stakes drive the intuitions, but only in so far as we want Hanna and Sarah to *succeed* in an epistemic goal that involves a lot more than the mere fact that the bank will open. In particular, we want them to form a true belief that concerns their funds being available for a very important impending payment. This includes their abilities, inclinations and a utility condition that includes the bank being open. This is the main example discussed by Stanley and it seems that everything else he says about similar cases is compatible with our proposal. We think that, actually, the 'success from ability' intuition does a better job in explaining the attributions that Stanley analyzes. And, as Greco says, success from ability also captures the 'anti-luck' and 'ability' intuitions. Therefore, we believe that the success semantics approach we defend in this paper may be the best account not only of naturalized epistemic virtue but also of the semantics of knowledge attribution.