Article

Videogame Cognitivism

Alexandre Declos^{*}

The aim of this article is to examine and defend *videogame cognitivism* (VC). According to VC, videogames can be a source of cognitive successes (such as true beliefs, knowledge or understanding) for their players. While the possibility of videogame-based learning has been an extensive topic of discussion in the last decades, the epistemological underpinnings of these debates often remain unclear. I propose that VC is a domain-specific brand of aesthetic cognitivism, which should be carefully distinguished from other views that also insist on the cognitive or educational potential of videogames. After these clarifications, I discuss and assess different broad strategies to motivate VC: propositionalism, experientialism, and neocognitivism. These map the different ways in which videogames can prove epistemically valuable, showing them to be, respectively, sources of propositional knowledge, experiential knowledge, and understanding. I eventually argue that neocognitivism is a particularly promising and yet underexplored way to defend VC.

Keywords: videogames, knowledge, understanding, cognitivism, epistemology

I wish to examine and defend a view that I call *videogame cognitivism* (VC). According to VC, videogames are epistemically valuable insofar as they can be a source of cognitive successes, such as true beliefs, knowledge, or understanding. Admittedly, such a claim is hardly unprecedented. The possibility (and peculiarity) of videogame-based learning has been a prominent issue in game and media studies, psychology, cognitive science, and education theory over the last decades. But these discussions, I think, have tended to target a model of learning which is generally both distinct from and weaker than the one involved in VC. The epistemological underpinnings of these debates, moreover, are not always entirely clear. We are very much in need of a proper philosophical exploration of the epistemic value of videogames.

In the first section of the paper, I clarify the nature and scope of VC, distinguishing it from a number of germane views and clearing possible confusions. The three next sections examine several distinct but compatible ways to motivate VC: *propositionalism*, *experientialism*, and *neocognitivism*. These strategies map the different ways in which

---

^{*} Thanks to the audience of the 2018 POCG conference in Copenhagen, where an earlier version of this work was presented. My thanks also go to Clément Bachelier for helpful discussion over the years. I am also grateful to two anonymous reviewers, and to John R. Sageng, for helping me substantially improve the paper.

videogames can prove epistemically valuable, showing them to be, respectively, sources of propositional knowledge, experiential knowledge, and understanding. I eventually argue that neocognitivism is a particularly promising and yet underexplored way to defend VC.

VC: The General Framework

Many people conceive videogames as a waste of time or even a mind-numbing occupation. It is easy to see why. After all, there doesn't seem to be much to be learnt from mashing buttons, for hours on end, in order to virtually gun enemies down, jump platforms, level up characters, and so on. Yet, as videogames became more sophisticated and increasingly studied in their own right, a growing number of researchers came to the conclusion that they have a genuine potential to induce learning and various other forms of cognitive improvements for the player. It is no longer uncommon in the academic literature to encounter the claim that videogames could "teach" us something, or that they might possess various "cognitive benefits". While VC is clearly related to these discussions, I shall argue that several confusions must be avoided, and requirements kept in mind, if we are to get at a satisfying understanding of what it at stake when considering the cognitive or educational potential of videogames.

VC and Aesthetic Cognitivism

The relationship between art and knowledge is a longstanding issue¹. Although it is clear that artworks have the ability to move, to please, or to afford certain types of experiences, it is less obvious whether they can be a source of knowledge or other types of cognitive successes. Should we say that artworks possess, besides their aesthetic value, a distinctly *epistemic* value? Is art capable of disclosing, revealing, or expressing truths? In brief, can we ever learn anything substantial from art?

Proponents of *aesthetic cognitivism* (AC) answer the previous questions favourably. This label, in contemporary philosophy of art, refers to a constellation of doctrines which maintain that artworks possess an alethic purpose or an epistemic value. As Cynthia Freeland proposes, AC rests more specifically on the following claims:

[AC] (1) Artworks stimulate cognitive activity that may teach us about the world (...). (2) The cognitive activity they stimulate is part and parcel of their functioning as artworks. (3) As a result of this stimulation, we learn from artworks: we acquire fresh knowledge, our beliefs are refined, and our understanding is deepened. (4) What we learn in this manner constitute some of the main reasons we enjoy and value artworks in the first place (1997, 19).

Starting from this definition, I propose to characterize VC as a species, or *domain-specific* brand, of AC. This is just to say that VC agrees to the claims of AC, in the more

---

¹ For an overview, see Novitz (2004)

restricted case of videogames². A simple way to define VC is thus to replace each occurrence of the term “artwork” in [AC] by one of “videogames”. This gives us the following:

[VC] (1) Videogames stimulate a cognitive activity that may teach us about the world. (2) The cognitive activity they stimulate is part and parcel of their functioning as videogames. (3) As a result of this stimulation, we learn from videogames: we acquire fresh knowledge, our beliefs are refined, and our understanding is deepened. (4) What we learn in this manner constitute some of the main reasons we enjoy and value videogames in the first place.

There are two important assumptions in [VC]. The first is an *epistemic claim*: videogames have an epistemic value, in the sense that they may be a source of different types of cognitive successes. The second, *aesthetic claim*, proposes that this alleged epistemic value of videogames is not unrelated to their overall value as artworks (i.e., their aesthetic value). The latter claim, however, isn’t essential to VC, because epistemic value isn’t necessarily related to aesthetic value³. It seems clear that a videogame can be shallow or silly but yet prove enjoyable, well-designed, or graphically pleasing. Conversely, a thought-provoking videogame may be aesthetically mediocre, because of certain flaws in its representational or narrative design. As such, I think that VC isn’t essentially committed towards the aesthetic claim, and that the epistemic claim is all that is needed to defend the view in its most basic form. This suggests the following restriction of [VC]:

[VC*] Videogames stimulate a cognitive activity that may teach us about the world. As a result of this stimulation, we may learn from videogames: we acquire fresh knowledge, our beliefs are refined, and our understanding is deepened.

[VC*] is an acceptable preliminary characterization of VC. A number of points need further examination, however: what is this “cognitive activity” that videogames stimulate? How does it relate to their alleged epistemic value? What is the scope of VC? How does the view relate to empirical findings on the putative educational potential of games? Should we say that anything that we may learn through playing videogames counts as evidence for VC? It is to these questions that I turn in the next sections.

The Scope of VC

Before all, we need to clarify the scope of VC.

First, it should be stressed that VC isn’t committed to saying that *all* videogames are epistemically valuable. Some of them, to be sure, may strike players as ham-fisted or

² The assumption here is thus that videogames are artworks, as seems quite plausible (Tavinor 2009). Of course, someone who rejects this view could not consider that VC is a brand of AC. But this wouldn’t necessarily prevent this person from accepting the core claim of VC on independent grounds. She might indeed think that videogames possess an epistemic value not *qua* artworks, but rather *qua* simulations, *qua* models, or *qua* fictions. For that matter, little of what I shall say here hinges on the issue of deciding whether videogames are indeed an art form.

³ See Lopes & Kieran (2006, xii) and Young (2001, 20).

idiotic, to the point that it would seem preposterous to consider them as potential sources of insight. VC does not have to pretend, either, that all individual *playings* of a given game will turn out to be epistemically valuable. Certainly, even an insightful game can be played with an inappropriate or unconcerned attitude, which potentially diminishes or even cancels its supposed epistemic value. Furthermore, the claim that videogames possess an epistemic value does not entail that this should necessarily be to the benefit of the players. A proponent of VC, I think, ought to agree that videogames can also potentially lead to epistemic deterioration (i.e., to cognitive *failures*, rather than successes). For these reasons, even the staunchest videogame cognitivists are likely to concede that some videogames possess little or even no (positive) epistemic value — something which doesn't prevent them being entertaining or innovative *qua* games, or even to count as genuine artistic achievements. This concession raises no particular issue for VC, as long as it can be maintained that many videogames, or perhaps most, bring credit to the view.

Second, note that VC should not be understood as a view that only applies to those videogames which are designed for educational or otherwise “serious” purposes. VC will unsurprisingly turn out more persuasive if discussed only in light of such examples. However, it would be trivial to claim that videogames which are overtly designed for learning can, after all, teach you something. Moreover, one may suspect that educational or “serious” games, at least in some cases, merely coat an educational content with a ludic apparatus. As such, their epistemic value and functioning need not owe much to their nature as videogames. A proper defense of VC, I think, should not merely contend that videogames can be used as educational tools, or argue that serious games facilitate learning, research, or educational practice, as this seems quite obvious and is well established⁴. Rather, VC ought to claim that videogames can have an epistemic value *even* when their primary function or intent is not serious or educational. Accordingly, I will here try to discuss VC mostly in light of your ordinary, “commercial” AAA videogames.

Third, VC should not be understood as the mere statement that the *digital medium* of videogames can be a source of cognitive successes. To see why, suppose that a particular game featured actual newspaper articles, video footage of real-world events, or links to existing Internet websites. Since all these things can be sources of genuine cognitive successes in non-gaming contexts, it seems that the same conclusion would follow when they are embedded in a videogame. This imagined case, however, would make VC true only in a vacuous sense: such cognitive successes would simply owe to the fact that videogames enjoy the potentialities afforded by their digital medium. In other words, VC shouldn't merely be a view about what videogames can do *qua digital artifacts*. Rather, it needs to show the alleged epistemic value of videogames has essentially

---

⁴ For instance, see Schaffer (2006), Jenkins & Squire (2003), Gee (2003); Prensky (2001), Bogost (2010).

something to do with their nature *qua* videogames, i.e. with the ludic or fictional aspects found in their game worlds.

Fourth, one could point out that videogames are typically neither designed nor played for intellectual upbringing or educational purposes. But this doesn't count as an objection to VC, which is not a view about how videogames are designed or played. Videogames may perfectly have a *primary* function of entertainment, while having an *extended* function of education (Tavinor, 2009, 31). For that matter, the fact that they possess an epistemic value is not incompatible with their functioning as objects of entertainment or aesthetic appreciation. VC, as stated above, need not pretend that epistemic value is *constitutive* of videogames—in the sense that if *x* is videogame then *x* has an epistemic value.

Lastly, some might worry that VC offers an overly reductive and instrumental picture of an activity—*play*—which has often been understood as characteristically disinterested, autotelic, unproductive, separate, or indifferent to any “serious” purpose⁵. This traditional picture is disputable, however, given the many extant counterexamples of games that are played with serious consequences, real-life stakes, or extrinsic purposes. The mere existence of educational or serious games is an excellent reason to reject any strict dichotomy between playing and learning, or education and entertainment. For that matter, it seems mistaken to claim that play is essentially at odds with any cognitive ends or consequences. Once again, VC can perfectly admit that players do not generally play with a serious spirit or attitude, or with the explicit purpose of learning anything serious. What the view states is that videogames, however approached by their players, can be a source of *cognitive successes*. As such, VC does not imply any breach of the so-called “magic circle”⁶: one might agree that videogames are typically set apart from ordinary life and its serious preoccupations, without holding that this makes them pointless or devoid of epistemic value.

Videogames, Skills, Enhancements

Playing a videogame is a cognitively demanding activity on many levels. It typically requires the player to memorize rules and controls, to navigate through menus and interfaces, to pay attention to an unfolding plot, to probe the game world with conjectures, to solve puzzles, to recognize patterns, and to learn, through repetition and reinforcement, various “in-game” skills, such as triple jumping or spamming fireballs. More generally, videogaming make use of a number of background cognitive skills, which vary depending on the type of game. The run and gun game *Cuphead* (Studio MDHR, 2017), for

---

⁵ Huizinga, for instance, writes that “play (...) lies outside the reasonableness of practical life; has nothing to do with necessity or utility, duty or truth” (1998, 158). Similarly, Caillois (1961, 5) proposes that “play is an occasion of pure waste”.

⁶ On the magic circle, see Huizinga (1998), Salen & Zimmerman (2004, 95-7), Nguyen (2017, 9-10).

instance, demands spatial reasoning and pattern recognition from its players, while a RTS such as *StarCraft* (Blizzard, 1998) requires divided attention and task planning.

There is no doubt, then, that videogames require some sort of cognitive activity to be appreciated, and indeed, to be played at all. Interestingly, a growing body of empirical studies has even found that videogaming *enhances* various skills. These may be *cognitive* (such as problem-solving, spatial reasoning, divided attention), but also *motor* (hand-eye coordination, fast reflexes) and even *social* (such as leadership, teamwork, etc.).⁷ It is usually in this sense that the “cognitive” potential of videogames is understood and defended in the literature.

The fact that videogames stimulate a cognitive activity and foster various skills seems sufficient to explain why they possess an educational potential or interest. Yet, this observation does not suffice to warrant VC, as it does not entail that videogames can be a source of cognitive successes such as true beliefs, knowledge, or understanding⁸. One could indeed admit that videogames stimulate a cognitive activity but deny that this activity is *epistemically significant*. For instance, consider the case of *Brain Age* (Nintendo, 2006). Although this game is explicitly centered on the training of certain cognitive skills, such as word memory or calculation, it does not seem that it actually *teaches* anything to its players, in the sense intended by VC. The fact that its game-play functions as cognitive exercises, indeed, does not *ipso facto* mean that it leads to doxastic changes, to the acquisition of knowledge, or to a gain in understanding. Some could think that this conclusion can be generalized. Videogaming would then be akin to a sort of mental gymnastics, like that involved in jigsaw puzzles or *Sudoku*: an intellectually demanding process, which certainly involves the training and mastery of various skills, but which does not count as a learning opportunity in any obvious sense. If this is right, cognitive stimulation or enhancement isn’t sufficient for epistemic value.

For this reason, I suggest that proponents of VC should not merely claim that videogames can be cognitively stimulating, but rather, and as stipulated in our previous definition, that “the cognitive activity they stimulate may teach us about the world”. This is to say that VC must hold that videogames can have *an epistemic impact*, an effect on what players believe, know, or understand about the world outside of the game. What is needed, then, is an account of whether and how videogames can be epistemically impactful. It is in virtue of this demand that VC parts ways with much of what has been written on videogames and learning in education theory, psychology, or game studies. Videogame cognitivists are not primarily concerned with lab or classroom evidence

---

⁷ For instance, see Eichenbaum, Bavelier, & Green (2014). For reasons both of space and expertise, I cannot review these studies in more detail here.

⁸ If it were, one could suppose by analogy that AC is warranted by the mere fact that artworks may benefit some cognitive skills. It seems clear, though, that the issue cannot be settled so simply.

suggesting that videogames benefit such or such cognitive skills. What preoccupies them is rather an epistemological puzzle: can videogames be a source of cognitive successes in the above sense, i.e. have an epistemic impact? If so, what sorts of cognitive success do they afford, and by which means?

Relevant and Irrelevant Learning

As we just saw, VC holds that videogames can have an epistemic impact, i.e., an effect on what players believe, know, or understand. This proposal, however, still needs further narrowing. Indeed, and as I'll argue here, we shouldn't think that everything taught by videogames to their players would count as evidence for VC.

Playing *Super Mario World* (Nintendo, 1990), I can form the true and justified belief that this game belongs to the genre of platform, or that collecting 100 coins grants Mario an extra life. During the credit scene, I may learn that Takashi Tezuka was the director of the game. My playing can also lead me to believe a number of propositions about its fiction (e.g. "Dinosaur Land was taken over by Bowser"), which are true of the "work world" of the game (see Walton 1990). To learn such facts *about* a particular videogame or about its fiction counts as a cognitive success. However, this shouldn't qualify as evidence for VC. The fact that playing videogames grants us beliefs or knowledge *about videogames* (that is about their rules, their fictions, or their design properties) seems like an uninteresting truism. If VC reduced to such trivia, it would be vacuously true.

As such, the unqualified claim that videogaming is "fundamentally a learning experience" (Juul 2005, 5) requires further elaboration. The additional requirement is this: VC does not simply assert that we may learn *about* videogames, but rather, that we can learn *from* or *through* them. Videogames, that is, could teach us something about "aspects of the world external to the work" (Novitz 2004, 90). I propose to call this the *referential constraint*: the cognitive successes afforded by videogames, in order to count as evidence for VC, should somehow refer or relate to the reality standing outside of these games. It is important to note that this demand does not conflict with the fact that the content of videogames, generally, is mostly or even wholly fictional. A representation need not involve non-fictional elements to be about the world. The referential constraint only requires that whatever is learnt from videogames relates to, or finds application, in the world outside of the game

Another requirement is needed besides the referential constraint⁹. Exploring the source code of *Cuphead*, I may acquire some understanding of (or true beliefs about) the functioning of Unity, the game engine for which this game is programmed. To con-

---

⁹ Thanks to an anonymous reviewer for helpful remarks here.

sider another scenario, being hit on the head with a *Super Mario World* cartridge might lead one to acquire the knowledge that games can be dangerous in an unsuspected sense. These examples arguably count as instances of cognitive successes generated by videogames, where something is learnt about the world external to these games. It is clear that a proponent of VC should resist counting them as evidence for her view, however. These alleged successes, for a start, do not have anything to do with the *playing* of these games. More importantly, they do not owe to their *content*, but rather, and respectively, to their properties *qua* program and *qua* material object.

To block such non-relevant cases, we need to invoke what I call the *content requirement*. It states that the cognitive successes afforded by videogames, in order to count as evidence for VC, ought to derive from their *specific content as videogames*, that is, from their ludic and/or fictional features¹⁰. Without this additional demand, VC would again threaten to dissolve into triviality, since anything whatsoever can count as a learning opportunity about something else, under some circumstances (Gibson 2008, 575). VC does not merely restate this obvious fact. It contends, more specifically, that the aspects of videogames which are constitutive from the players' standpoint (i.e., their rules and game mechanics, their narratives, fictions, graphics, audio elements, etc.) do frequently play an epistemic part. As such, VC only admits as evidence the cognitive successes that owe to the specific content of videogames; and disqualifies those potentially produced by their other properties and features.

VC: Summing Up

As proposed above, VC sees videogames as a source of cognitive successes. I have argued that such successes shouldn't amount to some cognitive stimulation or to the betterment of various skills. Additionally, in order to count as evidence for VC, the insights afforded by videogames ought to refer or relate to the world external to the game (*referential constraint*), and owe to their specific content as videogames, i.e., their ludic or fictional features (*content requirement*). All this said, VC can more suitably be characterized as follows:

[VC**] In virtue of their ludic and/or fictional features, videogames stimulate a cognitive activity that may teach players about the world external to these games. As a result, videogames can be epistemically valuable: they can lead us to acquire fresh knowledge, refine our beliefs, or deepen our understanding.

---

¹⁰ Here, I follow others (e.g., Juul 2005, Tavinor 2009) in thinking that videogames are best characterized disjunctively, in the sense that they must involve ludic elements (rules, objectives, and gameplay) or fictions. It should also be noted that this specific content is normally accessed through the activity of playing, although not necessarily so (for one may arguably gain some access to the ludic or fictional aspects of a videogame by merely reading about it, or by watching friends or streamers playing it).

Defining VC as such, I think, avoids conflating it with a number of germane views which are often ill-differentiated in the literature. It also provides a precise target to discuss the epistemic value of videogames. The rest of this paper shall examine and assess several strategies which support VC as just defined: *propositionalism*, *experientialism*, and *neocognitivism*. Before proceeding, I shall mention some general points that should be kept in mind.

First, recall that I assume here that VC is a species of AC. This is the reason why the three strategies I examine below broadly correspond to those usually advanced to support AC¹¹. Second, the strategies for VC discussed in the next sections differ in that each picks out a distinct type of cognitive success afforded by videogames. This isn't to say, however, that these accounts can't be held *jointly*. A proponent of VC is free to maintain that videogames can be epistemically valuable in several ways, so that different videogames may afford distinct types of cognitive successes. As such, and while each of the strategies discussed below is technically sufficient to defend VC, combining them makes a stronger case for the view. Lastly, VC is here understood as the claim that videogames *can* be epistemically valuable. This implies, strictly speaking, that the existence (or indeed, the mere potential existence) of a *single* epistemically valuable videogame is enough to show that VC is true. It is clear, however, that advocates of VC do not intend their claim to be so weak and minimal. Rather, they maintain that videogames *actually* and *consistently* prove valuable on the epistemic level. Thus, the accounts discussed below all aim to account for the epistemic value of a wide array of videogames.

Propositionalism

A first family of views, that we may call *propositionalism*, defends AC on the grounds that artworks can be a source of propositional knowledge about the world. Propositional content is identified by linguistic statements which are susceptible of being true or false. "Knowledge", here, ought to be understood along the usual lines: S knows that *p* iff S believes that *p*, *p* is true, and S is justified in believing (or has a reliably generated belief) that *p*¹². Thus, the notion of "propositional knowledge" refers to a true and justified belief *that* so and so is the case, i.e., that a certain proposition is true. In this section, I shall examine and assess whether this strategy can be used to support VC.

---

¹¹ My typology, in particular, owes to that proposed by Gibson (2007).

¹² An additional condition is usually seen as necessary, in order to avoid problematic Gettier cases, in which a subject possesses justified true beliefs which nonetheless fail to qualify as knowledge. I shall ignore this issue here, though: the claim that videogames could afford ungettierized knowledge is already controversial enough as it stands.

Knowing From Games

The view that artworks can be a source of knowledge about the world has been supported in various ways by proponents of AC. As I shall suggest here, these standard propositionalist claims unproblematically transfer or apply to the particular case of videogames.

First, we all know that artworks, even when they fall in the category of fiction, sometimes represent actual states of affairs, or communicate accurate information about the world—for instance, *War and Peace* (Tolstoy, 1869) states a number of true facts about the Napoleonic Wars. From this obvious fact, the case can be made that artworks occasionally afford factual knowledge to their audience¹³. This point seems equally clear in the case of videogames. Sport videogames, such as the various series developed by EA Sports, typically represent actual leagues, teams, and players. As a result, they allow players to learn a great deal about the real-world state of the sports that they depict. Other examples of factually accurate or informative videogames are legion. A number of them, indeed, even specialize in this quest for factual accuracy and realism. The grand strategy game *Crusaders Kings II* (Paradox Interactive, 2012), for instance, refers to many actual historical figures and events, and accurately represents a number of social, economic, religious, and military aspects of medieval history.

Second, many cognitivists consider that artworks often express general truths about the human nature or moral matters, which we would come to discover and grasp through our interaction with these works. For instance, *Howards End* (Forster, 1910) invites readers to appreciate that there is a correct balance (and thus also, imbalances) between the virtues of imagination and practicality (see Carroll 2002, 12). It seems obvious, here again, that claims of this type could be made in light of videogames. Examples easily come to mind. *Disco Elysium* highlights how one's past always weights on the present. *Life is Strange* (Square Enix, 2015) shows that we may never anticipate all the consequences of our choices. *BioShock* (2k Games et al., 2007) proposes that what is wrong with utopianism is that human beings consistently fail to live up to their ideals. Regardless of particular examples, we should agree on this conditional claim: if novels, paintings, movies, and other sorts of artworks can express or reveal certain truths about certain universal aspects of the human condition (and by extension, function as sources or occasions of knowledge), then it is hard to see why videogames couldn't. This is so, simply, because the latter share a number of properties and structural features with other types of artworks.

---

¹³ For a discussion, see Friend (2006) and Davies (2007).

Third, a number of authors have defended that the knowledge afforded by art would primarily be *conceptual* in nature¹⁴. Reading *Crime and Punishment* (Dostoevsky, 1866), for example, one may “come to think of ordeals not just as a threat to human life and limb, but as a way of overcoming one's self-centeredness” (Novitz, 1987, 137). Videogames may arguably foster similar realizations. In *The Last of Us* (Naughty Dog, 2013), Joel, a bitter and ruthless character, progressively bonds with Ellie, a teenage girl. As the story goes, Joel develops a fatherly relationship with Ellie and finds back some sense of purpose in his life. As such, the game suggests that friendship or love is essential to a fulfilled existence. This proposition bears less on empirical facts than on the relation between certain concepts, and could therefore qualify as an object of conceptual knowledge. Another interesting example is that of *Something Something Soup Something* (Gualeni et al., 2017), a (minimal) browser game where players get to decide what counts as soup and what doesn't. This work, which is intended to illustrate the impossibility of coming up with an analytic definition of soup, highlights how even ordinary concepts are plagued by something like Wittgenstein's problem of family resemblances. As such, it can afford some insight into the working of concepts and our common classificatory practice¹⁵.

Finally, some cognitivists insist that artworks can deliver knowledge by involving, or functioning as, *thought experiments*¹⁶. By inviting their audience to imagine and explore counterfactual scenarios, some works would lead their audience to grasp truth or falsity of certain propositions about the world. Since thought experiments are ordinarily seen as *bona fide* sources of propositional knowledge in other contexts (e.g., in science or philosophy), the same ought to hold when they are embedded in artworks. This claim, again, unproblematically transposes to videogames. The latter frequently invite players to imaginative exercises about what would follow or happen if such or such counterfactual conditions were to obtain—e.g., if one was bestowed with divine powers (*Black & White*, Electronic Arts, 2001), if space followed different laws (*Portal*, Valve, 2007; *Antichamber*, Dermuth, 2013), if minds could be digitally stored and replicated (*SOMA*, Frictional Games, 2015), if we could rewind time (*Life is Strange*), and so on. Thus, since videogames do (at least occasionally) involve thought experiments, it isn't a long shot to conclude that they enjoy the epistemic benefits usually credited to such devices (see Schulzke 2014).

---

¹⁴ See John (1998), Putnam (1978), Novitz (1987).

¹⁵ Some could remark that this work, if successful, *deprives* players of some knowledge they previously thought they had. As the developers put it: “We don't know what soup is, and neither do you!” This does not mean that the game could not afford some conceptual knowledge, though. Indeed, we could consider that it gets us to know that we don't know what soup is, for we cannot state precisely what the necessary and sufficient conditions for soupness are!

¹⁶ See Carroll (2002) and Elgin (2014) for a discussion. Some propositionalists even consider that artworks can afford us a type of *modal* knowledge (Stokes 2006, Blumson 2015).

Although these various proposals would deserve closer scrutiny, space does not allow me to examine here how each of them could be detailed. What matters is that the usual propositionalist claims can squarely be adapted in the case of videogames. This is a result which comes as no surprise, if we consider that videogames are artworks, and that VC is a species of AC. As such, propositionalism seems to be, at least *prima facie*, an open road to support VC.

Assessing Propositionalism

Propositionalism about art, however, has been the target of several objections. Unsurprisingly, these worries seem equally pressing when the view is discussed in light of videogames. I shall now review a few of these challenges, before attempting to see how they could be addressed.

The no-claim challenge. Propositionalism seems to assume that players would, more often than not, be in a position to articulate what is asserted by videogames, and correlatively, what they could learn about the world by playing them. This assumption seems dubious, however. Here's a telling exercise. Take a collection of popular videogames of your choice. Then, try to determine what, if anything, these games say or assert. The task will presumably prove difficult, simply because videogames, as a matter of fact, rarely make any *claims* about the actual world. This observation, coupled with the plausible demand that "learning from art requires some degree of awareness of what the new knowledge is" (John 2001, 418), could lead some to doubt that propositionalism is a persuasive view. It is simply unclear, the objection goes, whether videogames make determinate claims about the world, and thus, that they can satisfy the demands of propositionalism.

The triviality challenge. Another issue with propositionalism is what Stolnitz (1992) called the "cognitive triviality of art". As he argues, our attempts to grasp the alleged "message" or "point" of an artwork will hardly result in grandiose discoveries about the human condition. Instead, and at best, we'll get vague and uninteresting statements about the evilness of war, the dangers of self-deception, among other banalities. Thus, even granting that artworks can disclose truths, these would be simply too vague and trivial to qualify as material for substantive knowledge about the world. The same point seems to hold in the case of videogames. To consider the foregoing examples, we surely did not wait for *BioShock*, *Disco Elysium* and *Life is Strange* to know, respectively, that utopias seem impracticable, that people can be haunted by their past, and that human beings are non-omniscient agents. In brief, videogames would be unable to make us discover anything new. At best, they would merely recycle truisms of which we were antecedently aware—a problematic result for cognitivists, insofar as "you can't learn what you already know" (Carroll, 2002, 4).

The justification challenge. I said earlier that many videogames are informative and factually accurate, and suggested that a number of them do state or express number of (empirical, philosophical, moral, conceptual, counterfactual) truths. An obvious concern, however, is that none of this is enough to show that videogames can be a source of *knowledge*. Even if we suppose that videogames can afford true beliefs to their players, truly believing that *p* is not sufficient for *knowing* that *p*. A true belief can be due to mere luck. It can also stem from unreliable processes, such as wild-guessing or divination. We have the strong intuition that such cases of lucky true beliefs do not and cannot amount to knowledge at all, as the latter requires some *justification* or *warrant*. Based on this contention, many have objected that artworks cannot afford knowledge, simply because they fail to offer any justification for the truths that they incorporate or express¹⁷. This worry equally applies to videogames, which hardly ever provide evidence that what they depict, claim, or express is true or faithful to the facts. As such, even if one acquired a true belief from a videogame, one wouldn't be justified in believing it on the sole basis of playing the game. This suggests that videogames do not afford genuine *knowledge* to their players.

Couldn't we reply here that videogames, in some cases, *do* provide some means to justify the beliefs that they induce in their players? *Crusader Kings II*, for instance, includes links to Wikipedia pages in its "character view" interface. This allows one to go and read about the character's actual biography. Players, in that case, do not merely form true beliefs regarding actual historical characters: they also seem justified in doing so—at least if a Wikipedia entry can be considered as a normally reliable source of information. In addition, it seems that we occasionally have *prima facie* reasons to believe that what is depicted in an artwork is true to the facts, depending on our background information about the genre to which the work belongs, or the identity and reliability of its author¹⁸. For example, being previously aware that sport videogames of the *Fifa* series are designed with the intent of faithfully mirroring the current state of real-world soccer, it seems that I am justified in believing that Antalyaspor is an actual soccer team in Turkey, on the sole grounds of seeing that *Fifa 20* (Electronic Arts, 2019) includes it among the playable teams in the Turkish league.

These proposed replies, however, are not really persuasive. First, videogames hardly ever incorporate any means to verify that their content is indeed accurate or trustworthy, as in the above example of *Crusader's Kings II*. Most of the time, players have nothing but their own experience and resources to determine whether they should indeed give

---

¹⁷ This is a classic objection to AC. For a discussion, see Gaut (2003, 441-4); Stolnitz (1992, 196-7); Carroll (2002, 5-6); Gibson (2008, 577-8); Davies (2007, 147-157); Novitz (2004, 1002).

¹⁸ Friend (2006, 46-48); Novitz, (1987, 132); Gaut, (2005, 442-3); Davies (2007, 153).

credence to the game's content¹⁹. Second, it does not really serve propositionalism to say that true beliefs formed through play can be *prima facie* warranted if we possess prior or independent evidence that their source is reliable. The issue, indeed, is precisely that videogame players generally can't determine whether they ought to believe any claims made or implied by the game about the world, as they lack even "the defeasible presumption of prior vetting that non-fiction provides" (Gaut 2003, 443). Just like other type of artworks, videogames can manipulate or deceive their audiences, either through unreliable or fallible narrators, biased and ambiguous perspectives, or simply because they mix truth and fantasy without telling us where the line between the two should be drawn²⁰. It seems, then, that we cannot get rid of the justification challenge so simply.

Now, do the previous objections show that propositionalism isn't a viable strategy to defend VC? I do not think so. Several rejoinders can be envisioned in each case.

First, the no-claim challenge can be addressed quite simply. Contrarily to what this objection assumes, propositionalists do not have to consider that videogames ought to make direct or outright statements about the world (or even, that they would need to *say* anything) in order to possess a valuable propositional content. For a start, we shouldn't forget that there are other routes of reference besides linguistic denotation, such as depiction or exemplification (Goodman 1981). In addition, the propositions expressed by a videogame can perfectly be *implicit*, so that they stand in need of reconstruction through analysis and criticism²¹. For instance, *September 12th* (Gonzalo Frasca, 2003) suggests that the so-called "War on Terror" is doomed to failure, because even surgical strikes will involve killing innocents, and thus, entrench the conflict. Interestingly, this point isn't explicitly claimed, but is incorporated in the core mechanics of the game: clicking the mouse will fire a missile with a short delay, which exemplifies the randomness involved in airstrikes, and the possible imprecision of the so-called "precision warfare" (Bogost, 2010, 229). As such, the frequent lack of explicit claims about the world in videogames is entirely compatible with propositionalism.

Next, the triviality challenge could potentially be met in several ways by propositionalists. If the issue is that videogames cannot make us discover *novel* or *distinctive* truths, one can reply that propositionalism need not commit to this view in the first place. If the point is that videogames express propositions that could be substantive oth-

---

¹⁹ This worry is an instance of the far more general problem of the justification of testimonial beliefs. However, this challenge seems to take a particular form, and to raise its own issues, in the case of beliefs formed through fictions (see Friend 2014 and Stock 2017 for a discussion). For that matter, it remains to be seen whether the strategies usually advanced for the justification of testimonial beliefs in the case of non-fiction could be applied here.

²⁰ The previous example of *Fifa 20* is quite telling of this issue. One major Italian team, Juventus FC, does not exist in this game, since the developer, EA, did not secure the legal rights from the club. Juventus is thus replaced by a fictional team called "Piemonte Calcio". Therefore, although this game is mostly true to the facts, it also contains *false* information, without explicitly signalling it. Thanks to Pierre-William Fregonese for drawing my attention to this point.

²¹ For a discussion of this strategy, see John (1998), Gibson (2008), and Kivy (1997).

er contexts, but that end up being trivial because they are not established through analysis and argument, this objection just is a variation of the justification challenge. If the issue really is that there are no instances of videogames which express determinate or substantive truths (whatever this means), we could simply deny that this claim generalizes by seeking counterexamples. Here again, shifting our attention to videogame criticism might be helpful, as the latter seems to establish that videogames can make points that are both true and non-trivial²². At any rate, even if we granted that videogames do not teach us anything hitherto unknown to us, this wouldn't entail that they can't function as sources of non-trivial knowledge. Rediscovering or drawing forth that p , where p is some previously known proposition, can be epistemically valuable. It may bring further or new justification about p , clarify p 's relation to other propositions and thus allow one to draw new inferences, etc. And after all, philosophers themselves frequently consider that there is something epistemically valuable with "recalling to mind features of human experience that, if known once, have been forgotten or are only dimly grasped or are ignored, neglected, and/or even repressed" (Carroll 2011, 174).

Lastly, several lines of reply to the justification challenge can be envisioned. For a start, this objection assumes that artworks only contribute to knowledge insofar as we find evidence for whatever they claim in our subsequent experience. But such an "inductive" model is at odds with the fact that fictions seem able to afford direct insights into certain situations, where the audience needs no further evidence to realize the possibility, or indeed, actuality, of a certain state of affairs²³. Second, videogames can provide evidence, arguments, or justification to what they claim, but only in an *implicit* fashion: players may have to "fill-in the blanks", so to speak, to see how the game supports the claim it puts forward. The horror game *SOMA*, for instance, makes clear that a person x could be psychologically continuous with another person y without it being the case that y is identical to x . The game does not present any explicit argument for this conclusion. It does not need to. By depicting cases of fission over the course of the game, the narrative illustrates that there are possible cases where psychological continuity and identity would come apart.

More radically, propositionalism is compatible with the view that videogames do not provide *themselves* any justification or warrant to whatever they claim or express. Such a task could instead pertain to the *players*. Under this picture, videogames would present us hypotheses or tentative claims that we might accept or reject "on the basis of our own experience of ourselves and others by calling upon our familiarity with the world outside of fiction" (Carroll, 2011, 175). Note that such a view concedes that videogames,

---

²² See for instance the various essays in Bogost (2015).

²³ See Stock (2006) for an explicit defense of this strategy. Gaut (2003, 341) and Carroll (2002, 8) make a similar point in the case of conceptual knowledge.

in themselves, do not offer more than *true propositional beliefs* about the actual world: they would afford knowledge only if properly completed by the justification derived from the players' beliefs and experiences. Yet, this seems enough to save the idea that videogames can be epistemically valuable in virtue of their propositional content. If we agree that acquiring true beliefs (or losing false beliefs) about the world is a cognitive success, as seems plausible, this weaker form of propositionalism is enough to support VC.

Overall, then, propositionalism seems quite able to face the usual objections leveled against it. Thus, I think that it remains a plausible option to support VC. This isn't to say that this view is without limitations. Some videogames may be entirely deprived of interesting propositional content. Others could be epistemically valuable, but in a way that isn't captured by propositionalism. However, recall that VC need not claim that *all* videogames are epistemically valuable, nor that those which are epistemically valuable ought to be so in the same way. Accordingly, even those tempted to reject propositionalism could maintain that VC is true. One can still consider, indeed, that videogames afford distinct sorts of cognitive successes, irreducible to propositional knowledge or belief. It is to strategies of this type that I turn now.

Experientialism

Some advocates of AC have argued that the epistemic value of art lies in its ability to afford a *non-propositional* type of knowledge. The latter is variously called "experiential", "phenomenal", "affective", or "subjective" knowledge. Views of this sort, that I propose to label "*experientialism*", have the potential to be a distinct way to support VC. This section shall present and assess this sort of strategy.

Videogames as Experience Machines

Many artworks, insofar as they represent fictional events, prompt us to imagine that we witness or partake in certain situations. Often, they give us access to the intimate thoughts and feelings of characters, with which we generally come to empathize. According to some advocates of AC, these imaginative and affective experiences can be a source of "experiential knowledge"²⁴. As they propose, the latter does not amount to knowing *that* a certain proposition is true. It consists, rather, in grasping "what it is like" to be in such or such situation, to observe things from a particular perspective, or to feel a certain emotion²⁵. *The Hunt* (Vinterberg, 2012) and *Ana Karenina* (Tolstoy, 1877), for

---

²⁴ See Novitz (1987; 2004), Stroud (2008), Walsh (1969), Nussbaum (1990).

²⁵ This claim is parallel to Jackson's notorious argument against physicalism, often introduced through the following thought experiment. Imagine that Mary knows every physical fact about colors and color perception, but that she has never actually seen anything that wasn't black or white. According to Jackson, Mary will come to learn something new the first time she sees something red. This isn't because she learns a new truth or proposition about

instance, could afford some knowledge of what it is like, respectively, to be wrongly accused and to be in a loveless marriage. More generally, experientialists argue that artworks can afford us experiences that we could not, for a host of different reasons, make in our ordinary life. Artworks, by enriching our experiential repertoire, would grant us an epistemic access to novel situations, perspectives, and attitudes.

Experientialism comes in various shapes and forms, and cuts across many philosophical issues that I cannot begin to approach here. These views, however, typically share a number of assumptions. First, there is, quite obviously, a difference between the first-hand experience of *X* and the *imaginary* experience of what *X* is (or would be) like. For this reason, experientialists insist that the experiences afforded by artworks are of a special sort, which may involve a distinctive attitude of “pretense”, “make-believe”, or again, a form of “simulation”²⁶. Second, experientialist accounts stress the fine-grained, phenomenal, situated, and context-embedded nature of experiential knowledge. These features are taken to explain why the cognitive successes afforded by artworks do not reduce to simply knowing propositions in the abstract. Lastly, experientialists typically claim that the simulated experiences afforded by artworks help us identify analogous situations in real life, or give us a sense of how we would respond to them if we actually encountered them. As such, these experiences would be intrinsically related to a form of *know-how*: they would afford us the ability to recognize and discriminate things in our own lives. The experiences afforded by narrative artworks, in other words, would not only be informative, but also *formative*, disposing us to feel, perceive, or even act in novel ways²⁷.

Experientialism, however construed, is an available strategy to support VC. Like other fictions, videogames often invite their players to put themselves in someone else’s shoes. For instance, *Papers, Please* (Lucas Pope, 2013) lets the player take the role of an immigration border agent in the dystopian state of Arstotzka. Playing the game, you come to experience certain aspects of life in a totalitarian regime, such as the changing and arbitrary bureaucratic procedures, the constant surveillance, and the difficulty to sustain one’s basic needs. You also get a sense of how easy it is to become suspicious of everyone and to submit to absurd guidelines. Seeing for yourself what all these things feel like is an enriching experience, which is arguably different from merely knowing that such or such propositions are true. While players might previously have had a certain picture of how populations live in authoritarian regimes, it does seem plausible to

---

color. Rather, she learns *what it is like* to see red. One consequence of this thought experiment is that knowing “what it is like” seems irreducible to knowing that propositions are true. It is the same point that is made by experientialists about art, although in a different context and for another purpose.

²⁶ For a discussion, see Gibson (2008), Currie (1995), Walton (1990).

²⁷ The view that “knowing what it is like” amounts to a form of “know-how” has also been made in relation to Jackson’s knowledge argument against physicalism, where it is known as the “Ability Hypothesis”. See O’Conaill & Nida-Rümelin (2019) for a discussion.

say that playing *Papers, Please* fleshes out this picture. This could be taken as the mark that you have gained some (limited) experiential knowledge of what daily life in a totalitarian regime is like²⁸.

Many game theorists consider that the educational and epistemic potential of games is intrinsically linked to their ability to function as experience machines. Videogames allow us to inhabit identities that we cannot or perhaps would not want to assume otherwise—a hired killer in *Hitman* (Square Enix, 2016), a PTSD suffering soldier in *Spec Ops: The Line* (Yager Development, 2012), an omnipotent being in *Black & White* (Electronic Arts, 2001), a war victim in *This War of Mine* (11 bits studio, 2014), the father of a dying child in *That Dragon, Cancer* (Ryan Green & Josh Larson, 2016). It seems clear that the playful exploration of these various identities is a valuable experience, as it gives us some access to situations and agencies that we do not or cannot encounter or assume in our ordinary life. The idea these experiences are connected to a form of *know-how*, in addition, is also particularly persuasive when considered in light of videogames. Videogames, in particular those belonging to the genre of simulation, are effective tools for teaching some elements “professional knowledge” (Bogost 2010, 239). For instance, they can give players a sense of what it is like to manage a shop, a theme park, or a soccer team; and of how it feels to govern a city, to fly aircrafts, or to drive trucks around Europe. Even if simulation games generally involve a good deal of simplification, they can transfer to players something of the skills and experiences which accompany these activities in real life. Thus, it seems that the imaginative and simulated experiences afforded by videogames can indeed prove epistemically valuable for the players.

Challenges for Experientialism

Experientialism has the merit of explaining how one central feature of videogames—the fact that they generally involve fictions and narratives which prompt rich imaginary and affective experiences—is epistemically valuable, in a way that does not seem accounted for by propositionalism. However, this view also faces several issues.

For a start, one could complain that the notion of experiential knowledge remains rather obscure. Is it a type of acquaintance? A knowing-how? Both at once? Does the difference between *first-hand* and *simulated* experiences make an epistemic difference? And if experiential knowledge is non-propositional, how can it even be communicated,

---

²⁸ Some consider that the only way to know what is to like to Φ is to have a first-hand experience of Φ . This view is controversial, however (see the discussion in Cath 2019). In addition, it is unclear that it counts as an objection to experientialism as understood here. Videogames do not simply *tell* players about what it is like to Φ . Rather, they let them *have* the experience of Φ -ing themselves (albeit in a simulated or imaginary fashion). While simulated experiences certainly differ in some respects from actual ones, it is hard to see why they couldn't function as grounds for experiential learning.

ascribed, or justified? These questions need to be carefully answered if are to make experientialism hold any water.

In addition, the assumption that experiential knowledge is *non-propositional* can be challenged. A quick argument to this effect goes like this. (1) The traditional (Rylean) view sees “knowing-how” as a non-propositional kind of knowledge. Against this account, it can be argued that knowing how to Φ is analyzable as knowing *that* there is a certain way that is a way to Φ (Stanley & Williamson 2011). Thus, “S knows how to fish” is true iff, for some way w , S knows that w is a way to fish. (2) Now, suppose that experiential knowledge is indeed a form of know-how; for instance, that knowing what is it like to Φ is typically equivalent to knowing how it feels to Φ (Stoljar, 2018, 110). Holding (1) and (2) together, experiential knowledge can be seen as propositional. For instance, one could propose that Alfred knows what it is like to be a war victim iff there is a way w such that Alfred knows that w is a way it feels to be a war victim²⁹. If this picture is right, the fact that experiences have a rich phenomenal component does not mean that their content cannot be conveyed in propositional terms. The introduction of a distinctively experiential and *sui generis* type of knowledge would therefore seem unwarranted.

Another worry is that we could doubt that the experiences afforded by videogames can be a genuine source of *knowledge*. Indeed, experientialism also faces the problem of justification mentioned above (Putnam 1978, 90-91). Suppose that playing *This War of Mine* leads me, through imagination and empathy, to form certain experiential beliefs on the condition of war victims. These beliefs might be true. Yet, the game does not itself justify them, as it does not provide evidence that its representation of “what it is like to be a war victim” is faithful or tethered to the facts. It could equally be unreliable, biased, or inaccurate, so that it gives players a wrong experiential picture. Nothing, if we stick to the game itself, gives us reason to think that the experiential beliefs it generates are justified. This hints that our encounters with games do not afford us experiential *knowledge*, but at best provisional experiential *beliefs*, which stand in need of confirmation from external sources.

Lastly, the experientialist account only seems to work with videogames that involve fictions, and more particularly, fictions that are sufficiently elaborated, lifelike, and relatable to allow us to empathize with the characters or situations there depicted. Videogames, however, often fail to satisfy these desiderata. Think, for instance, of games such as *Pac-Man* (Namco, 1980), *Hearthstone* (Blizzard, 2014), or *Tekken 5* (Namco,

---

²⁹ Things are in fact a bit more complicated. Stanley and Williamson argue that, in order to know how to Φ , one ought to know *in the appropriate manner* that w is a way to Φ , i.e., practically rather than theoretically (2011, 427-9). This explains why knowing some truths about ways of Φ -ing isn’t enough for knowing how to Φ . *Mutatis mutandis*, one would know that w is a way it feels like to Φ just in case one knows Φ in the appropriate, “phenomenal” way (see the discussion in Cath 2019).

2004)—respectively, a classic arcade title, an online multiplayer card game, and a fighting game. All involve depictions of fictional events or characters. These fictions, however, mostly seem to be there in order to justify or back up the gameplay, so that their function seems essentially instrumental or decorative. These games do not portray scenarios that are similar or related in any obvious sense to real-life. They do not explore in depth particular viewpoints. They do not really intend to give a sense of “what it is like” to be in such or such situation. Nor do they encourage empathy or identification to the characters that they depict. It is unlikely, for that matter, that one could acquire any experiential knowledge from playing them³⁰. Experientialism, that is, seems ill-equipped to account for the epistemic value of these videogames—which plausibly are a majority—where the needs and purposes of gameplay and entertainment take over that of providing a compelling and relatable narrative.

Here again, however, I do not think that these various challenges suffice to establish that experientialism cannot support VC. First, it should be granted that experientialists owe us a more detailed account of what exactly experiential knowledge is supposed to be. But even if the latter turned out being a particular form of propositional knowledge, this wouldn’t count as an issue for a proponent of VC. It would simply mean, indeed, that experientialism is a brand of propositionalism, and that what seemed at first to be distinct types of cognitive successes belong to one and the same kind after all (i.e., propositional knowledge). We need not consider that experiential knowledge is *sui generis* to see it as an epistemically valuable achievement. The fact that players come to know propositions of the form “that way is a way it feels to Φ ” through videogames is enough to ground the view that the simulated experiences afforded by these artefacts are epistemically valuable.

Second, the justification challenge may receive the same sort of responses as those considered above. Experiences, whether simulated or not, seem able to play an evidential part (see Conee & Feldman 2008). If this is so, the experiential beliefs generated by a videogame could in principle receive evidence or justification from the simulated experience itself. Alternatively, experientialists are free to claim that it is the *players* who must bring justification to the experiential beliefs that they form through videogames. These beliefs would become justified, depending of “how well they cohere with existing and well-confirmed beliefs” (Novitz 2004, 1002). Although this amounts to the weaker claim that videogames only afford experiential *beliefs* to their players, this proposal

---

³⁰ Such a worry might extend to the vast majority of videogames, whose stories generally fall short of the sophisticated literary or filmic narratives on which experientialists generally base their view. As Koster remarks: “By and large, people don’t play games because of the stories. The stories that wrap the games are usually side dishes for the brain (...) Games are good at objectification. Stories are good at empathy. Games tend to quantize, reduce, and classify. Stories tend to blur, deepen, and make subtle distinctions. Games are external—they are about people’s actions. Stories (good ones, anyway) are internal—they are about people’s emotions and thoughts” (2005, 86). Also see Tavinor (2009, 114-120) for a related discussion.

seems sufficient to defend VC. The acquisition of true experiential beliefs, indeed, is a cognitive success in its own right.

Lastly, it is unclear that the complaint regarding the restricted applicability of experientialism has much weight. First, there seem to be instances where experiential learning exists in the absence of a sophisticated narratives or relatable characters: *Euro Truck Simulator 2* (SCS Software, 2012) and *Kerbal Space Program* (Squad, 2011), for instance, give the player a sense of what it is like to drive trucks or to build and orbits rockets, without involving an elaborated narrative or relatable characters. Second, even if we granted that videogame stories are often simplistic or ham-fisted, the recent years have seen an increased sophistication of narratives in games, thereby giving more grounds to the experientialist picture (see Tavinor 2009, 120). Finally, we should once again insist that a proponent of VC may perfectly admit that videogames are epistemically valuable in different ways. For that matter, the fact that certain videogames do not, or even cannot, afford experiential beliefs/knowledge does not entail that they are deprived of epistemic value. Experientialists need not pretend that their account applies to *all* games, or that it exhausts all there is to say about the epistemic value of videogames.

Neocognitivism

A last major strategy to defend AC is what some have called “neocognitivism”. This label refers to a family of theories centered on “the denial that cognitive value is always a matter of truth and knowledge” (Gibson 2008, 585). Many neocognitivists, in particular, insist that the epistemic value of art should be sought in its ability to advance our *understanding*³¹. As I shall argue in this final section, this sort of claim is a particularly promising strategy to defend VC.

From Knowledge to Understanding

Understanding is a type of cognitive success which can very roughly be characterized as the “grasping” of a certain proposition or subject matter³². In the recent years, a number of epistemologists have argued that understanding isn’t simply a species of knowledge. Intuitively, this conclusion can be supported on the grounds that it seems possible to know something without understanding it. Suppose I have the true justified beliefs that Napoleon lost the battle of Waterloo, or that salt melts snow. This is entirely compatible with a failure to understand why or how this is the case. It seems, then, that understanding requires *more* than knowledge. Many, drawing on similar considerations,

---

³¹ For a defense of this type of account, see for instance Baumberger (2013), Goodman & Elgin (1988), Elgin (1992, 2002, 2018), Novitz (1987, 2004).

³² Understanding can bear on individual propositions and facts (“propositional understanding”), or on comprehensive accounts or subject matters (“objectual understanding”). On this distinction, see Kvanvig (2003) and Elgin (2018).

have come to agree that understanding is a cognitive success which is more valuable than mere knowledge (see Kvanvig 2003).

Besides the fact that knowledge does not seem sufficient for understanding, various other reasons have been advanced in favor of their distinction. The former, in contrast to the latter, seems partially immune to Gettier-type cases, as it is arguably compatible with a certain form of epistemic luck (Kvanvig 2003, 197-198). It can also be argued that understanding is *transparent* in a way that knowledge is not (Zagzebski 2001, 246-7), and that it differs from knowledge in that it is not *factive* (see Elgin 2009, 2018). Lastly, while it is standard to assume that we can and do acquire knowledge through testimony, it seems that understanding cannot be reached by such means (Baumberger, Breisbart & Brun 2017).

Supposing that knowledge and understanding differ in kind, what is distinctive of the latter? Some think that it requires the subject to seize explanatory relations, or other forms of dependencies between facts or beliefs. Others link understanding to an ability to answer counterfactual questions. Understanding might also be equated with an increase in coherence and relatedness of one's beliefs. Regardless of one's preferred account, it seems that understanding, in all its forms, involves and leads to something like a know-how. As Elgin puts it, "someone who understands a proposition knows how to wield it to further her cognitive (and perhaps practical) ends. Someone who understands a topic knows how to use the epistemic resources her take on that topic affords" (2018, 46). Understanding places agents in a position to *do* something. It enables them to draw inferences, to construct arguments, to seize or derive explanations, to subject the target to counterfactual reasoning, to assess it, or to devise thought experiments, among other things.

While much more could be said about the epistemology of understanding, what matters here is to see how this notion can be used to mount a defense of AC and VC. As I will try to show below, this neocognitivist strategy is attractive for at least two main reasons. First and foremost, it does not require of videogames to afford any sort of *knowledge* in order to count as epistemically valuable. As such, the objections framed against propositionalism and experientialism can simply be ignored by neocognitivists. Second, this view does not hold that cognitive advancement reduces to the acquisition of knowledge or the discovery of truths (see e.g., Goodman & Elgin 1988). A gain in understanding may involve the formation or revision of categorial schemes, the revision or refinement of beliefs already held, the acknowledgement of features, patterns, similarities and differences hitherto overlooked, among other things. As a result, neocognitivism enriches the typology of cognitive successes that artworks, including videogames, could be taken to afford.

Understanding Through Videogames

Neocognitivism, as I shall now argue, is a promising strategy to defend VC, as videogames can indeed advance our understanding in ways which do not amount to the acquisition of propositional or experiential knowledge.

A first way by which videogames can advance the understanding of their players is by presenting *categorical schemes* which relate, and can be applied back, to the actual world. Simply put, a categorical scheme is a categorization or typology, which allows to differentiate various types of things, or to sort them into kinds. In the context of games, an interesting example of categorical scheme is that of the “alignment system”, which is a game mechanic found in certain role-playing videogames. Originally a feature of pen and paper RPGs, alignment systems are tables of categories of character traits, which specify different possible moral outlooks and attitudes of the characters found in the game. For instance, they clarify what is the nature of their relation towards the law and order, whether they tend to favor egoistic or altruistic pursuits, and so on. While alignment systems vary in nature and complexity, the most famous one is perhaps that of *Dungeons & Dragons* (Gygax and Arneson, 1974), which is implemented in some videogames, such as *Baldur’s Gate II* (Black Isle, 2000). This particular system consists of a total of nine categories. It combines one of three values—“Lawful”, “Neutral”, or “Chaotic”—with one of three others—“Good”, “Neutral”, or “Evil”. For instance, “Chaotic Good” characters are free spirits who will not hesitate to challenge the authorities in order to protect the poor or the weak. A “Lawful Evil” character, like a corrupt officer or a greedy merchant, will on the contrary have no qualms about hurting others to get what they want, within the limits of the laws or a certain code of conduct.

The alignment systems found in RPGs are categorical schemes: they map and configure a certain domain, in this case the psychological and moral characteristics of the in-game fictional persona. From a ludic standpoint, they also offer players guidelines for the role-play of their own characters (since players choose the alignment of their own character before they start the game). They may also occasionally lead to particular interactions or affordances within the game. But the interest of this game mechanic stretches further: as categorical schemes, alignment systems single out and highlight a range of conflicting ethical stances and attitudes. By presenting motivations, principles, and attitudes in polarized contrasts, alignment systems correspond quite closely to what Carroll has labeled “virtue wheels”: “a virtue wheel or virtue tableau comprises a studied array of characters who both correspond and contrast with each other along the dimension of a certain virtue or package of virtues” (Carroll 2002, 12). Put otherwise, virtue wheels embed moral archetypes and principles through opposite or complementary characters. As Carroll argues, these devices play a crucial part in the explanation of how artistic fictions can be epistemically valuable.

Admittedly, alignment systems in RPGs aren't generally as sophisticated as the virtue wheels found in literary masterpieces. They remain broad typologies, and might even strike one as clichéd or overly simplistic. Yet, they are not devoid of epistemic value. Alignment systems can be used to reflect back on actuality. Trying to determine what would be the alignment of your colleague or stepmother can be an enlightening exercise. Seizing the differences between some alignments (e.g. between Neutral Good and Chaotic Good) involves making discriminations that we may later come to recognize or apply in our real lives. Alignment systems, like virtue wheels, also fine-tune the sensibility and discriminatory powers of the players with respect to ethical matters: they "prompt the audience to apply concepts of virtue and vice to the characters, thus exercising and sharpening their ability to recognize instances of these otherwise often vaguely defined or highly abstract concepts" (Carroll 2002, 13). Moreover, this game mechanic leads players to contextually explore and assess different ethical standpoints, as they get to see, and even decide, how characters with different alignments react to a certain situation—lying for one's profit, stealing from the rich, betraying one's friends for the greater good, etc. For that matter, alignment systems are ethical sandboxes. The playful exploration of a certain alignment may also foster realization. Playing a Lawful Good character, for instance, may bring players to measure that honor can be blinding and even harmful, so that lawfulness isn't sufficient for virtue. Lastly, non-binary alignment systems exemplify that there are possibly different ways of being vicious or virtuous; and even, in fact, different ways of perceiving what it is virtue or vice. Alignment systems, that is to say, introduce players to issues surrounding value and ethical pluralism.

The alignment systems found in certain role-playing videogames, then, can be epistemically valuable. This does not seem adequately captured in terms of knowledge. A categorial scheme, being neither true nor false, is not truth apt (Goodman 1978, 129). For that matter, getting acquainted with a new scheme cannot be considered as a gain in propositional knowledge/belief (although it might *lead* to such cognitive successes). A table of categories, by itself, does not provide any sort of experiential knowledge either. At any rate, it is not obvious that alignment systems prove epistemically valuable solely by leading players to imaginatively explore various perspectives. The epistemic value of such categorial schemes, instead, may lie in the divides that they introduce, the parallels they draw, the differences and patterns they allow to recognize. Convolving the notion of understanding here explains why this can be epistemically valuable. By presenting new categories, or disrupting existing ones, videogames can contribute to the player's understanding of various issues and phenomena (not only ethical ones, of course, although this is the case I have been focusing on above).

Videogames can also advance the understanding of players by drawing their attention to certain issues. Imagine that you have never given much of a thought about the

possibility of “strong” artificial intelligence. If you play the action-RPG game *Fallout IV* (Bethesda Game Studios, 2015), you will encounter artificial beings that are called “Synths”. These come in several generations. First-gen synths are rather crude, terminator-looking robots, which are rigidly programmed for simple tasks (murdering you, for one). Third-gen synths, by contrast, are composed of lab-grown bodies and are almost entirely biological. They cannot be directly told apart from human beings, as they exhibit all the appearances of consciousness, autonomy, and sentience. Some third-gen synths have mingled with the human population—the result being that virtually anyone could be a synth. The different factions involved in *Fallout IV* have different ideologies towards these artificial beings. “The Railroad” fights so that society recognizes their freedom and autonomy (at least, in the case of third-gen models). “The Institute,” which is responsible for the creation of the synths, only sees them as valuable but disposable tools. Lastly, the “Brotherhood of Steel” advocates their destruction plain and simple, as it takes them to be nothing other than dangerous weapons. It is up to the players to decide which faction and ideology they will rally. Many quests are also pushing them to adopt a certain attitude or moral stance towards the synths.

Through this plot element, the player is presented conflicting viewpoints. The first accepts a reductive notion of personhood: AIs, however sophisticated, cannot be considered as persons, and thus, cannot enjoy the same moral status as human beings. This anthropocentric stance can be motivated on the ground that synths, even those from the sophisticated third generation, only exhibit an *appearance* of consciousness, free will, and intelligence. These creatures might well be philosophical zombies³³, as they have been designed and programmed to mimic complex human behavior, including the display of emotions. Moreover, synths can be controlled or reprogrammed through the chip lodged in their brain, something which might seem incompatible with crediting them a genuine form of free will or autonomy. Following this stance, there would only be a difference of degree between first and third-gen synths. It is up to the player, at any rate, to decide what it is exactly that synths lack in order to count as genuine persons. The game, however, also allows the player to adopt an alternative outlook, for which the notion of a person is independent from one’s particular make-up and takes a functionalist meaning. Under this perspective, synths ought to enjoy moral rights and consideration if they display the marks that one associates with personhood (e.g. self-awareness, autonomy, free will, sentience). Implicit in this stance is the view that, even if synths were philosophical zombies, they would still possess a moral status. If the player decides to adopt this standpoint, she has to reflect on what legitimates to extend person-

---

³³ Philosophical zombies are not flesh-eating undead, but beings which are supposed to be exactly alike to human persons in all physical respects, while being deprived of all conscious experience. See Chalmers (1996).

hood to synths. She also has to reflect on how being a person is compatible with being equipped of mind-controlling and memory erasing-devices.

Admittedly, these alternative standpoints aren't very sophisticated. It's certainly something that one might see developed with more detail and refinement outside of a videogame. But at the same time, exploring these standpoints through gameplay does yield *some* degree of moral understanding. Playing *Fallout 4* leads the player to reflect on various questions surrounding the ethics of artificial intelligence and personhood. The game invites the player to ask questions such as: "what criteria should I rely on in order to decide whether synths are persons? Is the difference between Gen 1 and Gen 3 synths one of degree or one of nature? If synths are not persons, can I morally wrong them? Could synths possess free will if they behave according to a program and algorithms? Does the fact that synths have a programmed personality or fake memories make their sentiments any less valid?" Such questions are not purely incidental or unrelated to the game, as they are directly intertwined with its gameplay and narrative, thereby meeting what I called earlier the content requirement. *Fallout 4* undeniably seeks to have its players reflect on these matters, which are clearly enough related to real-world issues.

Fallout 4, then, presents meaningful alternatives that players will have to reflectively and playfully explore. This does not count, in any obvious sense, as the acquisition of knowledge. These conflicting stances do not essentially consist or even lead to beliefs or knowledge about "what it is like" to be in a certain situation. They do not, either, amount to a propositional knowledge that so and so is the case. *Fallout 4* does not pretend to deliver truths or definitive answers. A proponent of neocognitivism, however, can maintain that an advance in understanding need not necessarily lie in assertoric content. It can also be conveyed by insightful or apt questions (Elgin 1993, 14; Mikkonen 2015, 27). *Fallout 4*, as I proposed, offers a compelling illustration of this principle: the epistemic value of this videogame has less to do with advancing claims, or presenting particular situated viewpoints, than in prompting players to identify a number of issues. While this process can itself count as a gain in understanding, the game also generates a perplexity for the player which prompts further inquiry. Playing *Fallout IV* can thus lead players to attempt arguments, raise questions, assess conflicting views, or even devise though experiments. Neocognitivism can see these potential outcomes as a mark of the epistemic value of this game.

Space does not allow me here to consider yet other ways through which videogames might be taken advance the understanding of their players³⁴. Although other examples could certainly be discussed, the particulars matter less than the general claim. Video-

---

³⁴ More would have to be said, in particular, on how understanding can be gained through the schematic or idealized models found in certain videogames, especially those belonging to the genre of simulation (see Declos, 2020).

games, I submit, can be a source of cognitive successes which do not primarily amount or reduce to acquiring knowledge (whether propositional or experiential) or to discovering truths, but which may instead be associated with the advancement of the understanding. Neocognitivism is perfectly equipped to make sense of this broader and richer array of cognitive successes. For that matter, it is an efficient—and I think as of yet underexplored—strategy to defend VC.

Conclusion

As I argued in this paper, a number of distinct but compatible strategies support the claim that videogames can be epistemically valuable. In virtue of their ludic and/or fictional features (e.g. gameplay, simulation, interactive representation, narrative), these digital artifacts seem able to afford true beliefs, knowledge (whether propositional or experiential) or understanding to their players. This conclusion, if correct, makes clear that videogames need not be a mindless form of entertainment, and that their cognitive contribution does not reduce to the training and enhancement of various “skills”. Indeed, videogames may contribute in various ways, and in a substantial sense, to the player’s beliefs, knowledge, or understanding about the world. This being said, much remains to be done in the study of this epistemically relevant kind of videogame-based learning. Each of the strategies detailed here stands in need of elaboration. In particular, the view that videogames contribute to understanding seems to deserve further scrutiny, and ought to be assessed in light of the recent epistemological literature on understanding. Lastly, deciding whether videogames allow for a specific or *distinctive* type of learning is a certainly topic worthy of further exploration. Further studies might therefore flesh out the broad defense of VC attempted here.

Games

11 bits studios (2014). This War of Mine
2k Games et al (2007). BioShock
Bethesda Game Studios (2015). Fallout IV
Black Isle, (2000). Baldur’s Gate II: Shadows of Amn
Blizzard Entertainment (1998). StarCraft
Blizzard Entertainment (2014). Hearthstone
Dermuth (2013). Antichamber
Electronic Arts (2001). Black & White
Electronic Arts (2019). Fifa 20
Frasca, Gonzalo (2003). September 12th
Frictional Games (2015). SOMA
Gualeni, Stefano et al. (2017). Something Something Soup Something
Green, Ryan & Larson, Josh (2016). That Dragon, Cancer
Namco (1980). Pac-Man
Namco (2004). Tekken 5
Naughty Dog (2013). The Last of Us
Nintendo (1990). Super Mario World

Nintendo (2006). *Brain Age: Train Your Brain in Minutes a Day!*
 Paradox Interactive (2012). *Crusader Kings II*
 Pope, Lucas (2013). *Papers, Please*
 Rockstar Games (2013). *Grand Theft Auto V*.
 SCS Software (2012). *Euro Truck Simulator 2*
 Squad (2011). *Kerbal Space Program*
 Square Enix (2016). *Hitman*
 Square Enix (2015). *Life is Strange*
 Studio MDHR (2017). *Cuphead*
 Yager Development (2012). *Spec Ops: The Line*
 Valve (2007). *Portal*
 ZA/UM (2019). *Disco Elysium*

References

- Baumberger, C., Beisbart, C. & Brun, G. (2017). What is Understanding? An Overview of Recent Debates in Epistemology and Philosophy of Science. In Grimm S., Baumberger, C., & Ammon, S. (Eds.), *Explaining Understanding: New Perspectives from Epistemology and Philosophy of Science*. New York: Routledge: 1–34.
- Baumberger, C. (2013). Art and Understanding. In Defence of Aesthetic Cognitivism. In Greenlee, M. et alii (Eds.), *Bilder sehen. Perspektiven der Bildwissenschaft*. Regensburg: Schnell + Steiner: 41–67.
- Bogost, I. (2010). *Persuasive Games: The Expressive Power of Videogames*. Cambridge: MIT Press.
- Bogost, I. (2015). *How to Talk About Videogames*. Minneapolis: University of Minnesota Press.
- Blumson, B. (2015). Fact, Fiction, and Fantasy. *Midwest Studies in Philosophy*, 39(1), 46–57.
- Caillois, R. (1961). *Man, Play and Games*. Chicago: University of Illinois.
- Cath, Y. (2019). Knowing What It is Like and Testimony. *Australasian Journal of Philosophy*, 97(1), 105–120.
- Carroll, N. (2002). The Wheel of Virtue: Art, Literature, and Moral Knowledge”, *Journal of Aesthetics and Art Criticism*, 60(1), 3–26.
- Carroll, N. (2011). Philosophical Insight, Emotion, and Popular Fiction: The Case of *Sunset Boulevard*. In Carroll, N. & Gibson, J. (Eds.), *Narrative, Emotion, and Insight* (pp.161-182), The Pennsylvania State University Press.
- Chalmers, D. (1996). *The Conscious Mind: In Search of a Fundamental Theory*. New York and Oxford: Oxford University Press.
- Conee, E. & Feldman, R. (2008). Evidence. In Smith, Q. (Ed.), *Epistemology: New Essays* (pp.83–104), Oxford University Press.
- Currie, G. (1995). Imagination and Simulation: Aesthetics Meets Cognitive Science. In Davies, M. & Stone, T. (Eds.), *Mental Simulation*, (pp.151–169), Blackwell.
- Davies, D. (2007). *Aesthetics and Literature*. London & New York: Continuum.

- Declos, A. (2020). Fact, Fiction, and Virtual Worlds. In Pouivet, R. & Granata, V. (Eds.), *Épistémologie de l'esthétique* (pp. 195-219), Presses Universitaires de Rennes.
- Eichenbaum, A., Bavelier, D. & Green C. S. (2014). Video Games: Play That Can Do Serious Good", *American Journal of Play*, 7(1), 50–72.
- Elgin, C. (2002). Art in the Advancement of Understanding. *American Philosophical Quarterly* 39(1), 1–12.
- Elgin, C. (2009). Is Understanding Factive? In Pritchard, D., Miller, A. & Hadock, A. (Eds.), *Epistemic Value* (pp.322–330) Oxford University Press.
- Elgin, C. (2014). Fiction as Thought Experiment. *Perspectives on Science*, 22(2), 221–241.
- Elgin, C. (2017). *True Enough*. Cambridge: The MIT Press
- Freeland, C. A. (1997). Art and Moral Knowledge. *Philosophical Topics*, 25(1), 11–36.
- Friend, S. (2006). Narrating the Truth (More or Less). In Lopes & Kieran: 35–50.
- Friend, S. (2014). Believing in Stories. In Currie, G., Kieran, M., Meskin, A. & Robson, J. (Eds.), *Aesthetics and the Sciences of Mind* (pp. 227-248), Oxford University Press.
- Gaut, B. (2003). Art and Knowledge. In Levinson, J. (Ed.), *The Oxford Handbook of Aesthetics* (pp.437–448), Oxford University Press.
- Gee, J. P. (2003). *What Video Games Have to Teach Us about Learning and Literacy*. New York: Palgrave Macmillan.
- Gibson J. (2008). Cognitivism and the Arts. *Philosophy Compass*, 3(4), 573–589.
- Goodman, N. & Elgin, C. (1988). *Reconceptions in Philosophy and other arts and sciences*. Indianapolis: Hackett Publishing Company.
- Goodman, N. (1978). *Ways of Worldmaking*. Indianapolis: Hackett.
- Goodman, N. (1983). Routes of Reference. *Critical Inquiry*, 8(1), 121–132.
- Huizinga, J. (1998). *Homo Ludens: A Study of the Play-Element in Culture*. London: Taylor & Francis.
- John, E. (1998). Reading Fiction and Conceptual Knowledge: Philosophical Thought in Literary Context. *The Journal of Aesthetics and Art Criticism*, 56(4), 331–348.
- John, E. (2001). Art and Knowledge. In Gaut, B. & Lopes, D. (Eds.), *The Routledge Companion to Aesthetics*, (pp. 329–340), Routledge.
- Juul, J. (2005). *Half Real. Video Games between Real Rules and Fictional Worlds*. Cambridge MA: The MIT Press.
- Kivy, P. (1997). *Philosophies of Arts: An Essay in Differences*. Cambridge: Cambridge University Press.
- Koster, R. (2004). *A Theory of Fun for Game Design*. Scottsdale: Paraglyph Press.

- Kvanvig, J. L. (2003). *The Value of Knowledge and the Pursuit of Understanding*. Cambridge: Cambridge University Press.
- Lamarque, P. & Olsen, S. H. (1994). *Truth, Fiction, and Literature. A Philosophical Perspective*. Oxford: Clarendon Press.
- Lopes, D. M. & Kieran, M. (Eds.) (2006). *Knowing Art. Essays in Aesthetics and Epistemology*. Dordrecht: Springer.
- Mikkonen, J. (2015). On Studying the Cognitive Value of Literature. *The Journal of Aesthetics and Art Criticism*, 73(3), 273–282.
- Nida-Rümelin, M. & O’Conaill, D. (2019). Qualia: The Knowledge Argument. In Edward N. Zalta (Ed.), *The Stanford Encyclopedia of Philosophy* (Winter 2019 Edition), URL = <https://plato.stanford.edu/archives/win2019/entries/qualia-knowledge/>.
- Nguyen, T. (2017). Philosophy of Games. *Philosophy Compass* 12 (8), 1–18.
- Novitz, D. (1987). *Knowledge, Fiction & Imagination*. Philadelphia: Temple University Press.
- Novitz, D. (2004). Knowledge and Art. In Sintonen M., Wolenski J. & Niiniluoto I. (Eds.), *Handbook of Epistemology* (pp. 985–1012), Kluwer Academic Publishers.
- Nussbaum, M. (1990). *Love’s Knowledge: Essays on Philosophy and Literature*. Oxford: Oxford University Press.
- Prensky, M. (2001). *Digital Game-Based Learning*. New York: McGraw-Hill.
- Putnam, H. (1978). *Meaning and the Moral Sciences*. London: Routledge & Kegan Paul.
- Tavinor, G. (2009). *The Art of Videogames*. Malden: Wiley-Blackwell.
- Salen, K., & Zimmerman, E. (2004). *Rules of Play: Game Design Fundamentals*. Cambridge: MIT Press.
- Shaffer, D. W. (2006). *How Computer Games Help Children Learn*. New York: Palgrave Macmillan.
- Squire, K. & Jenkins, H. (2003). Harnessing the Power of Games in Education. *Insight*, 3(1), 5–33
- Schulzke, M. (2014). Simulating Philosophy: Interpreting Video Games as Executable Thought Experiments. *Philosophy & Technology*, 27: 251–265.
- Stanley, J. & Williamson, T. (2001). Knowing How. *The Journal of Philosophy*, 98(8), 411–444.
- Stock, K. (2017) Fiction, Testimony, Belief and History. In Sullivan-Bisset, E., Bradley, H. & Noordhof, P. (Eds.) *Art and Belief* (pp.19-41), Oxford University Press.
- Stokes, D. (2006). Art and Modal Knowledge, in Kieran & Lopes: 67–81.
- Stoljar, D. (2016). The Semantics of ‘What it’s like’ and the Nature of Consciousness. *Mind*, 125(500), 1161–1198.
- Stolnitz, J. (1992). On the Cognitive Triviality of Art. *The British Journal of Aesthetics*, 32(3), 191–200.

- Stroud, S. R. (2008). Simulation, Subjective Knowledge, and the Cognitive Value of Literary Narrative Introduction. *Journal of Aesthetic Education*, 42(3): 19–41.
- Walton, K. (1990). *Mimesis as Make-Believe*. Cambridge MA: Harvard University Press.
- Walsh, D. (1969). *Literature and Knowledge*. Middletown Conn: Wesleyan University Press.
- Young, J. O. (2001). *Art and Knowledge*. London: Routledge.
- Zagzebski, L. T. (2001). Recovering Understanding. In Steup, M. (Ed.), *Knowledge, Truth and Duty: Essays on Epistemic Justification, Responsibility and Virtue* (pp.236–251), Oxford University Press.