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Illusory Signs as Frustrated Expectations: Undoing Descartes' Overblown Response*

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Abstract

Descartes held that it is impossible to make true statements about what we perceive, but I go over alleged cases of illusory experience to show why such a skeptical conclusion (and recourse to God) is overblown. The overreaction, I contend, stems from an insufficient awareness of the habitual expectations brought to any given experience. These expectations manifest themselves in motor terms, as perception constantly prompts and updates an embodied posture of readiness for what might come next. Such habitual anticipations work best when they efface themselves, so it is easy to blame perception when our expectations get frustrated. I illustrate this misdirected blame with the example of a stick partially in water: it is only because we expect the stick to be straight that its appearance as bent is deemed problematic. I thus conclude that, if we factor in the habitual interpretations operative in perception and switch to a processual view that allows practical engagement, we can deflate the worries that led Descartes to rule out perceptual truths. Distancing myself from the naïve "sign" of folk semiotics, my critique draws inspiration from the triadic semiotic model developed in some late medieval schools of Portugal.

Keywords: habit, perception, pragmatism, prediction, semiotics, skepticism, truth.

Introduction

Most of us aspire to make true claims. Looking at what is present before us seems conducive to that truth-telling aim, but is perception capable of supporting truths? René Descartes had a lot to say about how the world appears to—or more appropriately hides from—an experiencing subject. His skeptical conclusions have been so influential that most philosophers have since felt it necessary to describe our common environment as "the external world."[1] However, for many,

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doubting what seems least doubtful is a misuse of our rational powers. Hence, my aim will not be "to answer sceptical questions, but to begin to see how it might be intellectually respectable to ignore them, to treat them as unreal, in the way that common sense has always wanted to."[2]

For bad intuitions to be dislodged, they must be replaced by something better. The history of philosophy can help us do that. Because philosophy of signs or semiotics pre-dates Descartes,[3] its outlook can be used to bypass skeptical concerns. I thus argue that a more rigorous understanding of signs and their action can explain what is amiss in Descartes' sweeping distrust of perception.

Here is a thumbnail sketch of how I will proceed. I will start by introducing the semiotic ideas I intend to use in my diagnosis and critique. I will then go over Descartes' worries about perception and apply the ideas introduced earlier to undo those worries. I will conclude by suggesting that common misunderstandings about signs are of a piece with Descartes' mistaken views.

The action of signs involves more than sign-vehicles

Since my concerns are more philosophical than historical and since semiotics is the least known branch of philosophy ending in –ics, let me introduce the main ideas I will use with a tangible example. One of my neighbors has a van in his driveway which says, on its side, "Signs for sale." My neighbor no doubt makes a good living from this, but the philosopher of signs will know that he cannot actually be selling "signs." To be exact, my neighbor is in the business of crafting sign-*vehicles*.[4] By "vehicle," I don't mean the van, but rather anything which *serves as* a sign. This is very different. You can paint whatever you want on whatever surface you choose, but those designs will become a "sign" only once they are *interpreted* as *standing for* something. Thus, topologically, what my neighbor sells is a node in a triadic relation. Without the arcs connecting that node

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1. E.g., Bertrand Russell, *Our Knowledge of the External World* (New York: Routledge, 2009).
2. John H. McDowell, *Mind and World* (Cambridge, MA: Harvard University Press, 1996), 113.
3. John N. Deely, *Four Ages of Understanding* (Toronto: University of Toronto Press, 2001).
4. The neutral expression "sign-vehicle," which has become standard in the academic profession, was first proposed by Charles W. Morris, *Foundations of the Theory of Signs* (Chicago: University of Chicago Press, 1938), 3.

to other nodes, the physical thing that he produces would mean literally nothing—although it would forever retain a potential to be interpreted.

In a way, those working in the sign-vehicle-making industry already know this, since I occasionally see unpurchased advertisement spaces on public benches and municipal recycling bins that say "You just proved that these signs work." The idea, in sum, is that the very act of reading this statement confirms that the cleverly-placed advertisement can reach potential customers, because it just did. Without such a reading, however, whatever is present becomes just another brute thing in the world. Considered merely as a material thing, the advertising sign makes no difference on the conduct of anyone—apart maybe from obstructing one's path. When I fail to notice the ad, my consumer habits go on as they would have. By contrast, when I fail to notice the recycling bin, my motor habits get ruptured, and I hurt my shins. This polar me-hitting-it and it-hitting-me clash can nevertheless grow into a relation that is more topologically complex, since an encounter with the advertising sign can alter my actions. I can stop, not just to avoid the obstacle, but to consider what the ad has to say. Invariably, such a reading changes me in some minor or major way. When this happens, the relation becomes triadic, giving rise to semiosis or the action of signs.

Semiotics (to use the name given by John Locke) is a well developed field of inquiry,[5] but I doubt that my neighbor would be moved by any of this philosophical nitpicking. As far as he is concerned, he builds signs, full stop. As a result, "it seems unlikely that the practice of referring to the sign-vehicle simply as 'sign' will ever fall fully to desuetude."[6] Yet, if the insight regarding the necessity of triadicity and insufficiency of the vehicle is so true and important, why is the folk conception of "sign" bent on identifying the whole triad with only one of its parts? The answer—which will prove pivotal for my arguments—is that the sign-vehicle is the part most directly available. This availability or foregrounding leads us to forget that the other parts are always operative. On my reading, this forgetfulness is what lands Descartes in trouble. Let me now unpack that diagnosis.

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5. Marc Champagne, "Semiotics," *Oxford Bibliographies in Philosophy*, edited by Duncan Pritchard (2014), https://doi.org/10.1093/OBO/9780195396577-0179.

6. John N. Deely, "'Semeion' to Sign by way of Signum: On the Interplay of Translation and Interpretation in the Establishment of Semiotics," *Semiotica* 148, no. 1–4 (2004): 217, https://doi.org/10.1515/semi.2004.006.

How interpretation hides from view

As a triad, the sign has a part that appears, a part that does not, and a third part that uses what appears to gain access to what does not appear. Following standard nomenclature,[7] let us call these parts sign-vehicle, object, and interpretant, respectively. This action of signs pervades our cognitive lives, so examples are not hard to find. For instance, I see a scar on your arm and use this visual experience to leapfrog to an accident that occurred long ago. I hear the sound "milk" and use this auditory experience to leapfrog to the idea of the protein-rich liquid. I run my fingers on a wooden pencil's surface and use that tactile experience to leapfrog to my son's tendency to chew on the pencil stick. I taste a soup and use this gustatory experience to leapfrog to the idea that my partner forgot to add salt. I smell acrid odours and use this olfactory experience to leapfrog to the idea that the soup may have been on the stovetop for too long.

These multimodal examples involving seeing, hearing, touching, tasting, and smelling illustrate how the action of signs constitutes the warp and woof of experience. In the same way that a *modus ponens* stays the same wherever it is realized, the triadic leapfrogging structure of semiosis remains constant, since it exploits what is present to reach something that is not present. This is what Augustine captured when he defined the sign as "something which is itself sensed and which indicates to the mind something beyond the sign itself."[8]

Importantly, just as a *modus ponens* can recycle its conclusion into a premise and start anew, the leapfrogging function enabled by the sign does not have to stop at one hop. On the contrary, waking mental life is best described as an almost-incessant passage from one association to another. To continue with the tactile example previously given: having touched the bumps on the pencil, I think of my son's chewing and then use this to leapfrog to his anxiety, which in turn makes me think that I should probably ask him if something is bothering him. I leapfrog as many times as needed until, ultimately, I act. I can then take stock of the consequences of my actions and resume the sequence.

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7. Edmundo Balsemão, "Categorias e semiosis: Notas introdutórias ao pensamento do individual em C. S. Peirce," *Revista Filosófica de Coimbra* 2, no. 3 (1993): 115–168, http://hdl.handle.net/10316.2/33664.

8. Remo Gramigna, *Augustine's Theory of Signs, Signification, and Lying* (Berlin: De Gruyter, 2020), 23.

Naturally, what the shorthand "leapfrog" captures is a type of inference, which can range in strength from the conclusive (deductive) to the probable (inductive) to the purely conjectural (abductive). On this account, our mental life is not a no-man's land that escapes description, but rather a perfectly natural object of study that exhibits stable relational patterns, which is why Charles Sanders Peirce regarded semiotics and logic as continuous pursuits.[9]

Now, it is common in logic for arguments to rely on premises that are unstated. I want to suggest that the same unstated reliance happens in perception, where many background assumptions *do* inferential work yet *hide* from view. The basic structure of the triadic sign invites such hiding. The sign's object is, by definition, absent—or at any rate not fully revealed; otherwise it would not require a surrogate to make itself known. The interpretant that glues together this passage from the visible to the less visible is even harder to discern, since the entire value of habituation is to rely effectively on a habit without allocating any conscious awareness to it. So, in terms of phenomenological salience, an absent object and evanescent interpretant simply cannot compete with a present sign-vehicle. This uneven distribution of salience explains "the continuing tendency to confuse the element of representation in the foreground of signification, what we now would call rather the *sign-vehicle*, with the sign itself."[10] I will argue that, in the end, this part-whole confusion generates many misguided skeptical worries.

Descartes' attempt to (re)start everything from scratch

Even if two-thirds of the triadic sign essentially hides from view, it is a mistake to equate the sign with its vehicle. The other parts—the object and interpretant—are vital. Inheriting and improving Augustine's definition, some Coimbra scholars of the late sixteenth century defined the sign as "what is sensible itself and represents to the mind something other than itself."[11] They were thus sensitive to the fact that, when crediting a perceptual episode as being representational, "one should explain its

9. Francesco Bellucci, *Peirce's Speculative Grammar: Logic as Semiotics* (New York: Routledge, 2018), 3.
10. Deely, "'Semeion' to Sign by way of Signum," 195.
11. Conimbricenses, *The Conimbricenses: Some Questions on Signs*, translated by John P. Doyle (Milwaukee: Marquette University Press, 2001), 39.

relation to the knower (the subject) and the thing signified (the object)."[12] In the Coimbra schools' commentaries—a series of works "conceived to give a 'philosophical canon to the aspirations of Portuguese culture and at the same time has assured the education of youth against the doubts of the century'"[13]—we find the example of smoke which, unless it reveals "a hidden fire […] to some potency, would never bring knowledge of anything […]."[14]

The works of the Coimbra school or Conimbricenses were collectively written, so careful scholarship would be needed to track who said what. In any event, the account of the sign as a triadic relation would later receive an even fuller treatment and vindication in the work of John Poinsot (Joannes a sancto Thoma), who studied under the Coimbra scholars.[15] An explicitly triadic model of the sign can thus be found in late medieval philosophy. Yet, the Western history of ideas took a very different turn, as the distinctive semiotic account that flourished in the sixteenth and seventeenth century would lay dormant for centuries. Arguably, the person most responsible for triggering this vast span of neglect is the French philosopher and mathematician René Descartes.

Descartes was exposed to the works of the Coimbra school. In a letter to Marin Mersenne dated September 30, 1640, Descartes writes that, from his Jesuit education, "I remember only some of the Conimbricenses."[16] Despite being trained in the scholastic tradition of his time, Descartes discarded what he learned. In his 1637 *Discourse on Method*, published five years after Poinsot's *Tractatus*, he explains his reasons:

> From my childhood I have been nourished upon letters, and because I was persuaded that by their means one could acquire a clear and certain knowledge of all that is useful in life, I was extremely eager to learn them.

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12. Mário Santiago de Carvalho, *The Coimbra Jesuit Aristotelian Course* (Coimbra: Coimbra University Press, 2018), 64.
13. Mário Santiago de Carvalho, "Medieval Influences in the Coimbra Commentaries," *Patristica et Mediaevalia* 20 (1999): 19, https://estudogeral.uc.pt/bitstream/10316/91190/1/Medieval_influences_in_the_Coimbra_Comme.pdf.
14. Conimbricenses, *Some Questions on Signs*, 41.
15. John Poinsot, *Tractatus de Signis: The Semiotic of John Poinsot*, translated by John N. Deely and Ralph A. Powell (South Bend, IN: St. Augustine's Press, 2013); see also Marc Champagne, "Poinsot versus Peirce on Merging with Reality by Sharing a Quality," *Versus: Quaderni di studi semiotici* 120 (2015): 31–43, http://versus.dfc.unibo.it/arc1b.php?articolo=845.
16. René Descartes, *The Philosophical Writings of Descartes, Volume 3*, translated by John Cottingham, Robert Stoothoff, Dugald Murdoch, and Anthony Kenny (Cambridge, UK: Cambridge University Press, 1991), 154.

> But as soon as I had completed the course of study at the end of which one is normally admitted to the ranks of the learned, I completely changed my opinion. For I found myself beset by so many doubts and errors that I came to think I had gained nothing from my attempts to become educated but increasing recognition of my ignorance. And yet I was at one of the most famous schools in Europe, where I thought there must be learned men if they existed anywhere on earth. There I had learned everything that the others were learning; moreover, not content with the subjects they taught us, I had gone through all the books that fell into my hands […].[17]

The commentary tradition alive in the philosophical schools of Europe championed a debate-based method requiring one to constantly find flaws and raise objections. In a way, Descartes would reprise this model in the *Objections and Replies* that followed his *Meditations on First Philosophy*, perhaps reflecting the influence of the Coimbra school.[18] However, centuries of cataloguing he-said-she-said arguments left layers almost impossible to track. Descartes thus wanted to start anew since, in his estimate, the opinions of past authorities did not add up to a tenable worldview: "[C]onsidering how many diverse opinions learned men may maintain on a single question—even though it is impossible for more than one to be true—I held as well-nigh false everything that was merely probable."[19] What resulted was a completely different paradigm, where old certainties lost their purchase, similar words acquired different meanings, and new problems sprang forth.[20]

Descartes' slide from "*could* be mistaken" to "*is* mistaken" became the leitmotif of his philosophical project. The problem, however, is that most of the leapfrogs we make are less than conclusive. We have the rare privilege of deducing some of the time, but the bulk of our living is earned by guessing and generalizing. Our inferential predicament is not like mathematics but rather is closer to hunting, where the stakes are high yet risky and uncertain shots remain the norm. Abduction and induction can

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17. René Descartes, *The Philosophical Writings of Descartes, Volume 1*, translated by John Cottingham, Robert Stoothoff, and Dugald Murdoch (Cambridge, UK: Cambridge University Press, 1985), 112–113.
18. Alfredo Gatto, "Descartes and the Coimbra Commentaries: A Critical Source of the Cartesian *Meditations*," *Quaestio* 18 (2018): 557–569, https://doi.org/10.1484/J.Quaestio.5.118134.
19. Descartes, *Philosophical Writings, Volume 1*, 115.
20. Marc Champagne, "What Anchors Semiosis: How Descartes Changed the Subject," *Recherches sémiotiques / Semiotic Inquiry* 28–29, no. 1–3 (2008): 183–197, https://doi.org/10.7202/1005869ar.

indeed be mistaken, but such less-than-deductive inferences are indispensible. Of course, a philosopher accustomed to manipulating the simplified models of mathematics or geometry will suffer from disciplinary bias and regard complete certainty as a desirable standard. The downside is that, when one agrees with Descartes that the possibly-mistaken should be regarded as definitely-mistaken, one stops studying experience as it actually unfolds.

Trust, prediction, and their (occasional) frustration

In one of his most memorable phrases, C. S. Peirce invited us to stop pretending "to doubt in philosophy what we do not doubt in our hearts."[21] Whatever students and professors may say during class time, none of us live as skeptics. For the most part, we believe that things are as they seem. When my partner pours me a glass of orange juice in the morning, I drink it without hesitation, even though I know (on a purely intellectual level) that it is well within her powers to poison that juice. The same goes for our habitual expectations, which we *can*, *do*, and *must* trust.

This does not mean we should stick to our beliefs come what may. We should stand ready to revise any beliefs that fail to match with the world. But, unless we have been given a real cause to suspect that our habitual expectations fail us, we rely unthinkingly on those habits to guide our actions and decisions. A belief, in Alexander Bain's compact phrase, is "that upon which a [person] is prepared to act."[22] For example, the belief that one's car is in good working order is not revealed by any verbal declaration or private mental imagery, but rather by the fact that a driver switches on the ignition, without checking under the hood beforehand.

This account of belief as an act or disposition to act, which gave rise to the pragmatist school,[23] captures well what it means to exist in time. To live is to predict what will happen next and adopt a corresponding posture of readiness.[24] This predictive element may be most apparent when, say,

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21. Charles Sanders Peirce, *The Collected Papers of Charles Sanders Peirce*, edited by Charles Hartshorne, Paul Weiss, and Arthur W. Burks (Cambridge, MA: Harvard University Press, 1931–58), vol. 5, para. 265.
22. Alexander Bain, *Mental and Moral Science: A Compendium of Psychology and Ethics* (London: Longmans, Green and Company, 1872), 372.
23. Max H. Fisch, "Alexander Bain and the Genealogy of Pragmatism," *Journal of the History of Ideas* 15, no. 3 (1954): 413–444, https://doi.org/10.2307/2707763.
24. Andy Clark, "Whatever Next? Predictive Brains, Situated Agents, and the Future of

we invest money in the stock market or speculate about who will win a major election. But, at every moment, we make a host of micro-predictions that we don't notice. As I walk, for instance, my right foot expects to land on something firm. That expectation proves correct, which leads my left foot to anticipate and confirm a similar outcome, and so on—until something in my path ruptures that habitual chain. A simple motor activity like walking thus strings together minor beliefs, each of which is a bet about what will happen next. We can add an extra layer of commitment to our predictions by making them explicit in a linguistic community.[25] But, the pervasive phenomenon of anticipation shows that predictions can be and usually are sub-discursive. The perfect match between our predictions and what we perceive explains why we can't tickle ourselves.[26]

As the example of tickling makes plain, some anticipations are inconsequential. If, for instance, the surface I step on is not as firm as I initially predicted, my walking style can simply make adjustments. I might perhaps twist my ankle if I fail to adjust my actions properly, but the cost of being wrong is relatively low. Other anticipations, by contrast, are more consequential. My trust in my partner's fidelity, for example, underpins countless other actions. That trust might be ruptured by the discovery of poisonous orange juice, so abandoning my mistaken belief in her trustworthiness would demand a vast reworking of my web of beliefs.[27] However, in this action-oriented account, revisions of one's habitual beliefs are undertaken only when one is given real cause to do so. Unless I detect that the surface of the sidewalk is uneven or slippery, I don't walk ultra-cautiously. Similarly, unless I discover evidence that my partner is homicidal, I continue to trust her. The world may not always be as I expect it, but I let mismatches reveal themselves, if and when they occur.

We get to know the world by leapfrogging from what is present to what is less so and act as if those predictions will bear out because, for the most part, they do. Still, on some rare occasions, the smoke discussed by the Coimbra school might be caused, not by a fire, but by a Hollywood

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Cognitive Science," *Behavioral and Brain Sciences* 36, no. 3 (2013): 181–204, https://doi.org/10.1017/S0140525X12000477.

25. Robert B. Brandom, *Making it Explicit: Reasoning, Representing, and Discursive Commitment* (Cambridge, MA: Harvard University Press, 1994).

26. Sarah-Jayne Blakemore, Daniel Wolpert, and Chris Frith, "Why Can't You Tickle Yourself?" *Neuroreport* 11, no. 11 (2000): R11–R16, https://doi.org/10.1097/00001756-200008030-00002.

27. Willard V. O. Quine and Joseph S. Ullian, *The Web of Belief* (New York: McGraw-Hill, 1978).

special effects company. As Umberto Eco wrote in *A Theory of Semiotics*: "Every time there is possibility of lying, there is a sign-function."[28] How should epistemology respond to this possibility of error or deception?

According to Descartes, the only conclusions that pass muster are those that resist all conceivable doubt. This certainty-only epistemology sets the bar quite high, since detecting even the slightest possibility of error requires that we totally abandon a belief. So, just as a person fearing infidelity might opt for perpetual celibacy, a person fearing mistaken beliefs can opt for skepticism. Given that our beliefs are acquired by habituating to the inputs of our five senses, one of the first things to go in Descartes' inquiry is the evidence of those senses. With this single decision, the whole world vanishes. Indeed, near the end of his first meditation, Descartes supposes that…

> an evil genius, supremely powerful and clever, […] has directed his entire effort at deceiving me. I will regard the heavens, the air, the earth, colors, shapes, sounds, and all external things as nothing but the bedeviling hoaxes of my dreams, with which he lays snares for my credulity. I will regard myself as not having hands, or eyes, or flesh, or blood, or any senses, but as nevertheless falsely believing that I possess all these things. I will remain resolute and steadfast in this meditation, and even if it is not within my power to know anything true, it certainly is within my power to take care resolutely to withhold my assent to what is false, lest this deceiver, however powerful, however clever he may be, have any effect on me.[29]

After Descartes, it became common for Western philosophers to doubt everything related to the senses—this, at a time when modern science was routinely making groundbreaking empirical discoveries. Yet, philosophy and science did not have to part ways. The medieval philosophical tradition, for example, was able to successfully deploy the devil's advocate as an instrument for the advancement of knowledge—without having that heuristic device destroy all knowledge. Peirce summarized the situation as follows: "Descartes is the father of modern philosophy, and the spirit of Cartesianism—that which principally distinguishes it from the scholasticism which it displaced—[…] [is] that philosophy must

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28. Umberto Eco, *A Theory of Semiotics*, translated by David Osmond-Smith (Bloomington: Indiana University Press, 1976), 58.
29. René Descartes, *Discourse on Method and Meditations on First Philosophy*, translated by Donald A. Cress (Indianapolis: Hackett, 1998), 62–63.

begin with universal doubt; whereas scholasticism had never questioned fundamentals."[30]

Western history followed Descartes, but it didn't have to be that way

The call to doubt everything is motivated by a fallacy. Indeed, one of Descartes' ablest critics, Pierre Gassendi, wondered why Descartes "did not make a simple and brief statement to the effect that you were regarding your previous knowledge as *uncertain* […]. Why instead did you consider everything as *false*, which seems more like adopting a new prejudice than relinquishing an old one?" (emphasis added).[31]

To better grasp Gassendi's criticism, imagine that I show you a cardboard box and tell you that there is a rabbit in it. The box being opaque and closed, you cannot check its contents to verify my claim. You can leapfrog from the visible box to any non-visible content you wish, but this would be pure conjecture—the weakest inference on the abduction-induction-deduction spectrum. However, in this scenario, the most reasonable conclusion is not "There is *no* rabbit inside," but rather "There *may* be a rabbit inside." After all, for all you know, things might turn out exactly as I said they would. Naturally, one would have to explore the box's contents to confirm this. Still, to conclude that there is no rabbit inside the box is to draw a conclusion stronger than what the premises permit. What the situation calls for is a noncommittal stance, not a commitment to falsehood.

Thankfully, we are usually able to explore the contents of a cardboard box. When the delivery person brings me a package, I don't sit still, pondering what she might have delivered. Rather, I open the darn box. True, there are some things that we humans will never know. But, more often than not, this is simply because there are things that we will never be *in a position* to know. Whether or not there are an even or odd number of stars in the universe, for example, is a perfectly soluble question—even though limits on our exploratory capacities may forever leave us unable to render a verdict either way. Such limits are a contingent part of the human condition, but they in no way eclipse the instances where we *are* able to verify what is the case. We are finite, but reality in principle does not elude

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30. Peirce, *Collected Papers*, vol. 5, para. 264.

31. In René Descartes, *The Philosophical Writings of Descartes, Volume 2*, translated by John Cottingham, Robert Stoothoff, and Dugald Murdoch (Cambridge, UK: Cambridge University Press, 1984), 180.

us. It is therefore overblown to put truth and reality out of reach, merely on account of our finite position and ability to make errors.

In a remark that anticipates the distinction between genuine doubt and "paper doubt,"[32] Gassendi tells Descartes that "no one will believe that you have really convinced yourself that not one thing you formerly knew is true, or that your senses, or God, or an evil demon, have managed to deceive you all the time."[33] The simplest explanation is not that the world has vanished, but rather that one is being disingenuous.[34] We can politely listen to Descartes explain his reasons for disbelieving the evidence of his senses. But, to the extent that a belief is that upon which a person is prepared to act, we are entitled to reply: that is all well and good, but you don't really believe any of it. As David Hume wrote, skeptical ideas "flourish and triumph in the schools […]. But as soon as they leave the shade, and by the presence of the real objects […] are put in opposition to the more powerful principles of our nature, they vanish like smoke, and leave the most determined sceptic in the same condition as other mortals."[35] To use a recent expression,[36] skepticism is a "luxury belief."

Interestingly, Descartes first had the idea of retreating to first-person experience in November 1619, when he spent a night in the silence and solitude of a large stove. Meditations indeed deliver valuable insights. But, it is rather hard to maintain conviction in the illusion of things when one is, say, digging a deep trench with a shovel.

Detouring to God to see what is right before us

To be clear, Descartes regards skepticism as transitional, since he thinks that he can eventually quell all radical doubts with carefully-chosen axioms such as God's benevolence and the obviousness of his own thinking. So, in fairness, his intent was never destructive. On the contrary, he decided early on to "devote my whole life to cultivating my reason and

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32. Peirce, *The Collected Papers of Charles Sanders Peirce*, vol. 5, para. 376.
33. In Descartes, *Philosophical Writings, Volume 2*, 180.
34. Erik J. Olsson, "Not Giving the Skeptic a Hearing: Pragmatism and Radical Doubt," *Philosophy and Phenomenological Research* 70, no. 1 (2005): 108–114, https://doi.org/10.1111/j.1933-1592.2005.tb00507.x.
35. David Hume, *Enquiry Concerning Human Understanding and Other Writings*, edited by Stephen Buckle (Cambridge, UK: Cambridge University Press, 2007), 139.
36. Coined by the psychologist Rob Henderson.

advancing as far as I could in the knowledge of the truth."[37] So, if we gauge the man by his truth-telling intents, he is beyond reproach. Still, in hindsight, what Descartes bequeathed to future generations is not some triumphant solution, but rather plaguing worries that "the senses misrepresent the material world and its properties in normal circumstances."[38]

Given that reality eludes us even in the best of cases, Descartes will invoke God's benevolent character in order to migrate his thinking Ego from its solitary confines to the "external" world. We can summarize his grand strategy as follows:

> God, being supremely perfect, cannot be a deceiver on pain of contradiction: this is the metaphysical foundation on which the certainty of human knowledge rests whenever it achieves a clear and distinct conception, "because every clear and distinct perception is undoubtedly something, and hence cannot come from nothing, but must necessarily have God for its author." Descartes says it forty or fifty different ways, but the unshakeable foundation of truth for him comes always back to the same point: not to the "Cogito ergo sum," as vulgarly taught even among Cartesians, but to the realization that God is and can be no deceiver.[39]

If God indeed exists, then his benevolent influence subtends all knowledge, without any need to list it as a premise.[40] The detour to theological assumptions is thus tantamount to resetting the universe to the moment of the Big Bang simply because one's ketchup bottle got clogged. Just give it a few more smacks on the back, one is tempted to say, and everything will fall into place.

Nevertheless, despite its radicality, Descartes' distrust of the senses had a lasting influence. So, if the history of Western philosophy took a wrong turn when it embraced Descartes' account of knowledge and perception, what went wrong? One thing we can do is backtrack to examine what was going on before a mistake was made. Indeed, "whatever else is to be said of the philosophy of Descartes and the colleagues it inspires over the modern centuries, you can see that it proceeds blithely unaware of

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37. Descartes, *The Philosophical Writings of Descartes, Volume 1*, 124.
38. Raffaella De Rosa, *Descartes and the Puzzle of Sensory Representation* (Oxford: Oxford University Press, 2010), 1.
39. Deely, *Four Ages of Understanding*, 518.
40. Marc Champagne, "God, Human Memory, and the Certainty of Geometry: An Argument against Descartes," *Philosophy and Theology* 28, no. 2 (2016): 299–310, https://doi.org/10.5840/philtheol2016102158.

the carefully developed Hispanic Latin" account of the sign.[41] With this in mind, I think we should recover the semiotic insights that were left behind when Descartes decided to start anew.

Peirce, who was set against Descartes' method of doubt[42] and was well acquainted with medieval semiotics,[43] stressed that the three parts of the sign are "bound together […] in a way that does not consist in any complexus of dyadic relations."[44] My hypothesis is that, if we make room for this triadicity of sign-action, we nip Cartesian skepticism in the bud.

Neglect of the interpretant as the root cause of the mistake

In their discussions of perception and deception, Descartes and his peers often brought up the example of "a stick [that] is partially immersed in water,"[45] which was first introduced by the French Franciscan thinker Petrus Aureoli. Let us focus on this concrete example.

Suppose that you partially fill a glass with water and plunge a pencil in the water, such that the bottom half of the pencil is submerged while the top half is above the water. When one looks down at the glass, the wooden pencil stick will appear bent, with a (more or less pronounced) bend appearing at the surface where water and air meet. Now, pencils are straight and cannot be bent without breaking, so ostensibly something is amiss. The argument from illusion thus "asserts that we sometimes have perceptions that do not match things as they really are, as when we see a stick bent in water [...]."[46]

A first indication that this puzzlement might be remedied comes from the fact that the specific angle of the bend will change as one adopts different vantages. As an embodied act involving two eye sockets that are spaced apart, vision produces depth perception. Moreover, vision involves affordances that prime motor responses.[47] Touch, it turns out,

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41. Deely, *Four Ages of Understanding*, 520.
42. Robert G. Meyers, "Peirce on Cartesian Doubt," *Transactions of the Charles S. Peirce Society* 3, no. 1 (1967): 13–23, https://www.jstor.org/stable/40319490.
43. John Boler, "Peirce and Medieval Thought," in *The Cambridge Companion to Peirce*, edited by Cheryl Misak (Cambridge, UK: Cambridge University Press, 2004), 58–86.
44. Peirce, *Collected Papers*, vol. 2, para. 274.
45. Descartes, *Philosophical Writings, Volume 2*, 231.
46. Robert Pasnau, *Theories of Cognition in the Later Middle Ages* (Cambridge, UK: Cambridge University Press, 1997), 182.
47. James J. Gibson, *The Ecological Approach to Visual Perception* (New York: Taylor and

contributes to sight. Now, someone might object that cognitive scientists misunderstand the nature of philosophical problems. However, one could also say that Cartesian philosophers misunderstand the cognitive nature of perception.[48] As Quine explains: "The sceptic's example of the seemingly bent stick owes its force to our knowledge that sticks do not bend by immersion; and his examples of mirages, after-images, dreams, and the rest are similarly parasitic upon positive science, however primitive."[49] So, if one is going to invoke a model of perception to motivate one's skeptical doubts, one better make sure that this model is scientifically accurate.[50] Human vision is *not* akin to a still photo. On this score, phenomenology corroborates our best vision science.[51]

Gassendi reminded Descartes that "we sometimes have an understanding of the truth, as […] when the stick is taken out of the water," and in such a case there cannot "be any doubt at all about the truth."[52] Gassendi's fix is simple and, I would argue, correct. He notes that, "[o]wing to refraction, a stick which is in fact straight appears bent in water. What corrects the error? The intellect? Not at all; it is the sense of touch. And the same sort of thing must be taken to occur in other cases. Hence if you have recourse to all your senses when they are in good working order, and they all give the same report, you will achieve the greatest certainty of which man is naturally capable."[53] The (questionable) idea of God notwithstanding, it is very strange for a human to complain about the greatest certainty of which a human is naturally capable.

Even so, let us suppose for the sake of argument that one's perspective on the glass and pencil stay absolutely fixed, such that one enjoys only a

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Francis, 2014).

48. See Luis H. Favela and Anthony Chemero, "An Ecological Account of Visual 'Illusions,'" *Florida Philosophical Review* 16, no. 1 (2016): 68–93, https://cah.ucf.edu/fpr/wp-content/uploads/sites/3/2019/11/Favela_and_Chemero-1.pdf; as well as Matthew Crippen, "Embodied Cognition and Perception: Dewey, Science and Skepticism," *Contemporary Pragmatism* 14, no. 1 (2017): 112–134, https://doi.org/10.1163/18758185-01401007.

49. Willard V. O. Quine, "The Nature of Natural Knowledge," in *Mind and Language*, edited by Samuel Guttenplan (Oxford: Clarendon Press, 1975), 68.

50. Stephen Maitzen, "How not to Argue from Science to Skepticism." *International Journal for the Study of Skepticism* 4, no. 1 (2014): 21–35, https://doi.org/10.1163/22105700-03031081.

51. Thomas Fuchs, "The Not-Yet-Conscious: Protentional Consciousness and the Emergence of the New," *Phenomenology and the Cognitive Sciences* (2022), https://doi.org/10.1007/s11097-022-09869-9.

52. Descartes, *Philosophical Writings, Volume 2*, 231.

53. Ibid., 282.

static visual experience. What, one might ask, is wrong with the picture seen? In a way, absolutely nothing. Using the terminology introduced at the start, we can say that what makes this image show up on the skeptic's radar is the *interpretant* she brings to it. Specifically, skeptics and realists alike come to this picture with a prior habit and thus expect the pencil to be straight. It so happens that, when a pencil is plunged in water, it does not look straight. The habitual expectations we bring to the situation thus get frustrated. Yet, absent such prior expectations of straightness, why should bent figures be regarded as more suspect or troublesome than straight ones? When we compare straight and crooked figures, what we see are shapes; nothing more, nothing less. To maintain that an angled K-shape is inherently more dubious than an H-shape would be nonsensical, akin to saying that the number 5 is melancholic.

We know beforehand that pencils are straight, so naturally we apply this collateral information to the image before us. This creates a mismatch between what-we-are-used-to-seeing and what-we-now-see. Once again, Quine understood this well:

> The basis for scepticism is the awareness of illusion, the discovery that we must not always believe our eyes. Scepticism battens on mirages, on seemingly bent sticks in water, on rainbows, after-images, double images, dreams. But in what sense are these illusions? In the sense that they seem to be material objects which they in fact are not. Illusions are illusions only relative to a prior acceptance of genuine bodies with which to contrast them. In a world of immediate sense data with no bodies posited and no questions asked, a distinction between reality and illusion would have no place. The positing of bodies is already rudimentary physical science; and it is only after that stage that the sceptic's invidious distinctions can make sense.[54]

The very notion of a mismatch makes no sense apart from a comparison. It is a bit like stepping on a scale and seeing that one weighs 80 kilos. If you do not bring to that number any prior expectation about your weight, you cannot be surprised of a weight gain or weight loss, nor can you have any reason to think that the instrument is malfunctioning. Anyone wishing to make a fuss about bent pencils or 80 kilo displays must therefore import that fuss from elsewhere. To put the same point another way, were this the first pencil one saw, one would conclude that pencils are crooked.

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54. Quine, "The Nature of Natural Knowledge," 67.

Without conflicting habits, nothing is misleading about visual experience. Slowing down the situation and identifying the components of semiosis, the image experienced is a sign-vehicle which is crooked but "stands for" something straight as the object, in virtue of a habitual interpretant. Such an analysis helps, but what makes the situation tricky is that the interpretant which ties together the triadic sign usually effaces itself. Habits are of no use when we are conscious of them. So, looking at the pencil in water, we expect the pencil to be straight, yet we forget to inventory this expectation in our philosophical account.

This neglect is understandable. Normally, we don't spend time consciously mentioning the various anticipations that we bring to each experience. Still, habits are operative in everything we do. Hence, anyone puzzled by the partially immersed pencil must know a thing or two about pencils. The proof is that, if we remove all habits and study only the image, nothing will be amiss. Indeed, "even in […] cases where doubt is permissible, at least we may not doubt that things appear to us in such and such a way: it cannot but be wholly true that they appear as they do."[55]

Interestingly, Descartes agreed. However, he does not think that the manifest character of appearances accomplishes much since "the point at issue […] concern[s] the truth about the things located outside us."[56] Perceptual deliverances, on this Cartesian picture, are merely "inside" us. So, for Descartes, we need something more to pierce the veil of appearances and reach the way things "really" are. He will engage in a massive detour to get there, visiting God Himself to get to what is right before him.

It is an impressive story, to be sure. Yet, as was mentioned, keeping our vantage fixed is merely a provisional constraint, introduced only for the sake of argument. So, to find out whether the stick is bent or straight, there is something we can do, namely pull it out and feel it with our hands.[57] I see no reason why accounts of truth should ban such recourse to exploration. Double-checking may be more involved than checking, but it is certainly more parsimonious than summoning the All-Mighty.

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55. Descartes, *Philosophical Writings, Volume 2*, 231.
56. Ibid., 265.
57. Favela and Chemero, "An Ecological Account of Visual 'Illusions,'" 74.

Knowing the world, no detour required

Descartes, as we saw, dispels the alleged illusory status of sensory experience by appealing to God's (taken-for-granted) benevolence. This is a made-up solution for a made-up problem. Indeed, a grandiose recourse to theology is not needed, since there was no deception to begin with. This is because what one sees is a-stick-in-water, not just a-stick. In fact, given the presence of water and the optical laws of refraction, seeing a straight stick would count as a deception. The senses can thus indicate features that one has not yet scientifically understood. Our senses, then, are not just reliable;[58] they are *more* reliable than we think, since they are the guardrails of self-correcting processes.

Hence, far from putting reality out of reach, a proper investigation of the stick in water ought to re-invigorate our confidence in the possibility of attaining truth. Semiotic theory makes room for error and lying, as Eco famously noted.[59] But, less famously, it also makes room for interpretative processes capable of gradually overcoming transient mistakes.[60]

In perceptual experience, things appear thus-and-so, but such appearances mean little until and unless a thinking agent *judges* that things are *indeed* thus-and-so. Judgment is usually regarded as an intellectual act, but our organs often perform that step on their own, instinctually and without conscious effort.[61] Either way, judgments of veridicality are essentially a bet: when I judge the stick to be bent, I bet that it will stay bent once removed from the water. Conversely, when I judge the stick to be straight, I bet that subsequent experiences will yield a verdict of straight. Crucially, to count as rational, such judgments must be all-things-considered judgments. Hence, in the case of the partially submerged stick, past inputs from our other senses need to be considered. What we know beforehand thus colors what we are prepared to bet on.

Similarly, future inputs from our senses must figure in the deliberation, since it is only once the pencil is removed that we can discover whether

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58. David C. Kelley, *The Evidence of the Senses: A Realist Theory of Perception* (Baton Rouge: Louisiana State University Press, 1986).

59. Eco, *A Theory of Semiotics*, 58.

60. Paul Forster, *Peirce and the Threat of Nominalism* (Cambridge, UK: Cambridge University Press, 2011), 130–156.

61. Maria Luisi, "Percept and Perceptual Judgment in Peirce's Phenomenology," *Cognitio-Estudos: Revista Eletrônica de Filosofia* 3, no. 1 (2006): 65–70, https://revistas.pucsp.br/index.php/cognitio/article/view/5476/3923.

our bet was wise or misguided. Hence, on my diagnosis, everything hinges on the habitual expectations that we bring to our experiences. The stick in water can be deemed illusory only if we bring to it a history of associating pencils with straight forms. Such learning-based expectations must never depart from a tenable theoretical account, for it is only when interpretation takes an experienced image as a sign *of* something that the question of truth or falsehood can even be raised. In the argot of the Coimbra scholars,[62] appeals to present-moment experience (*"demonstrativa"*) become capable of justifying knowledge claims only when they draw on the past (*"rememorativa"*) and foreshadow the future (*"prognostica"*). Vision is not akin to a still photo—and neither is justification.[63]

We mentioned earlier how, to have a mismatch, you need two things—in this case a present visual experience and a memory—plus a third thing that takes stock of their similarity or difference. To illustrate how pervasive this comparison is, consider the following: "In one big gulp, he drank the cock tail." There is nothing inherently problematic about the letters strung together here, so the only thing that licenses talk of a mistake is our expectation to find the one-word arrangement "cocktail" at the end of the sentence. A typo is indeed present. But, remove the seven words that came before and everything is fine. What we said earlier about straight and crooked lines can thus be said here too: why should "cock tail" be regarded as intrinsically more suspect or troublesome than "cocktail"?

Surely, it would be overblown to conclude that the alphabet is unreliable because its arrangements can sometimes deviate from how we expect them to be. I submit that the same applies to sensory inputs, which are innocent by themselves yet can sometimes be conjoined in unexpected ways.

Folk semiotics and Descartes commit the same mistake

To rectify a widespread error, one must not only explain that error, but also why it is widespread. Let me therefore conclude by sharing a conjecture about why the overblown response of Cartesian doubt continues to be deemed so plausible by so many.

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62. Conimbricenses, *Some Questions on Signs*, 54–55.

63. Marc Champagne and Ahti-Veikko Pietarinen, "Why Images cannot be Arguments, but Moving Ones Might," *Argumentation* 34, no. 2 (2020): 207–236, https://doi.org/10.1007/s10503-019-09484-0.

People, as we saw at the outset, routinely conflate sign-vehicles and signs. The sign-vehicle is necessary, but folk semiotics elevates it to sufficient. While this confused way of thinking does not bother my neighbor, it remains a mistake. Likewise, Descartes takes a stand-alone visual experience—a static photographic shot, if you will—and talks about it as if it was somehow "representational." Yet, how could a stand-alone visual experience be representational, if we do not factor in what it is a representation *of* and the *habitual expectation* that makes it that way? To say that x represents "falsely," one must first say that x *represents*. This cannot be done, I have argued, without appealing to whatever it is supposed to stand for, plus the habitual interpretation that brings that "standing for" expectation to bear on the sign-vehicle.

My inquiry has favored argumentation over exegesis, but we can see that this is essentially the account of the sign developed by the Coimbra scholars and Poinsot: x stands for y to z. Ignorant of this account, Descartes pulls the x away from y and z—yet he continues to hold x answerable to representational standards. In so doing, he tries to have it both ways. This explains why specialists cannot agree on whether Descartes regarded the senses as representing or not.[64]

Like Descartes, late medieval semioticians took a keen interest in perception. "For since all our knowledge takes its origin from sensation and a sign is that by which we are brought to the knowledge of some thing, from this it results that men first call those things signs which move the senses."[65] Is this process reliable enough to let us grasp truths? Investigations of this question suffer from a handicap, since we rely so much on the action of signs that we easily cease to notice its contribution. Even so, the Conimbricenses rightly warned that, "in any sign there are two directions or respects, one to a thing signified and another to a potency for which it signifies."[66] Heeding that warning—which Peirce understood well[67] and helped to topologically formalize[68]—I have essentially been giving these neglected "directions" their due.

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64. See De Rosa, *Descartes and the Puzzle of Sensory Representation*, 3–4; as well as Kim-Sang Ong-Van-Cung, "The 'Argument from Illusion' and the Cartesian Philosophy of Ideas," *Revue de métaphysique et de morale* 42, no. 2 (2004): 217–233, https://doi.org/10.3917/rmm.042.0217.
65. Conimbricenses, *Some Questions on Signs*, 39.
66. Ibid., 41.
67. Peirce, *Collected Papers*, vol. 7, para. 356.
68. Jacqueline Brunning, "Genuine Triads and Teridentitiy," in *Studies in the Logic of*

Ostensibly, the realization that perceptions without interpretations could never reach anything beyond themselves is a lesson that each generation must learn anew. Richard Rorty may have done truth a disservice when he promoted "*conversation* as the ultimate context within which knowledge is to be understood" (emphasis in original)[69] but his criticisms of the simplistic "mirror" view were spot-on. Subjects do not spectate, passively. Instead, they act. They can, moreover, collaborate and pool their findings. So, faced with the question "Is the pencil in fact straight or bent?," the proper reply is not "Who can tell?" but rather "Let's find out!" Since habits are general tendencies extending beyond the present, and since confirmation of what we deem or hope to be true is an achievement of active exploration, truth-makers (and defeaters) are often located *in futuro*.[70] Luckily experience, unfolding in time from multimodal sources, constantly supplies us with further signs—enough, in most cases, to eventually come to a verdict: it is straight. Claims to that effect can therefore be regarded as *true*.[71]

Descartes finds the stick in water deceptive because he has artificially extracted that experience from the very sequence that endows it with meaning. This isolation is something that can be allowed only with great caution, since sign-vehicles by themselves are not signs.[72] Are the vacant advertising "signs" for sale on park benches and recycling bins really *signs*? Once we keep in mind the additional components needed to answer yes, the possibility that an advertisement or submerged pencil might lead to the wrong object becomes deflated—a trivial consequence of the fact that the habitual expectations we bring to situations do not always pan out as planned.

Admittedly, it does not come naturally for us to be mindful of the evanescent habit that lets us reach an intended object. How many habitual expectations is one bringing to this experience, right now? Ten? One hundred? A million? One will notice only the tacit expectations that are frustrated, like when we encountered "cock tail" where we expected to

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Charles Sanders Peirce, edited by Nathan Houser, Don D. Roberts and James van Evra (Bloomington: Indiana University Press, 1997), 252–263.

69. Richard Rorty, *Philosophy and the Mirror of Nature* (Princeton, NJ: Princeton University Press, 1979), 389.

70. Peirce, *Collected Papers*, vol. 2, para. 148.

71. Marc Champagne, "Disjunctivism and the Ethics of Disbelief," *Philosophical Papers* 44, no. 2 (2015): 139–163, https://doi.org/10.1080/05568641.2015.1056964.

72. Marc Champagne, *Consciousness and the Philosophy of Signs* (Cham: Springer, 2018).

find "cocktail." The other words escaped our notice. So, if we remind ourselves that, owing to our micro-predictions and anticipations, there is always more to experience than meets the eye, we can begin to realize that some of the philosophical problems that Descartes sets out to solve are not actually problematic—and do not require any drastic overhaul of our theory of truth and knowledge.

Hence, in an elegant loop, it turns out that platitudes about never truly knowing "the external world" are of a piece with the widespread practice "of referring to the sign-vehicle simply as 'sign.'"[73] I submit that, if one corrects this folk semiotic misconception, one will grasp why Cartesian skeptical worries about perception are overblown.

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73. Deely, "'Semeion' to Sign by way of Signum," 217.

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