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Title

Stance Pluralism, Scientology and the Problem of Relativism

Abstract

Inspired by Bas van Fraassen's Stance Empiricism, Anjan Chakravartty has developed a pluralistic account of what he calls epistemic stances towards scientific ontology. In this paper, I examine whether Chakravartty's stance pluralism can exclude epistemic stances that licence pseudo-scientific practices like those found in Scientology. I argue that it cannot. Chakravartty's stance pluralism is therefore prone to a form of debilitating relativism. I consequently argue that we need (1) some *ground* or *constraint* in relation to which epistemic stances can be *ranked* by *degrees*, and (2) some way to *demarcate* science from pseudo-science so that we know what epistemic stances are about. Regarding (1), I argue that *empirical detectability* can serve as the ground in relation to which epistemic stances are ranked by degrees. Regarding (2), I argue for ranking sciences on a *continuum* according to established *institutional criteria*, rather than attempting to draw a strict demarcation.

Keywords

Scientific pluralism, epistemic stances, demarcation problem, scientificity, Scientology, Anjan Chakravartty

Introduction

An important question in the philosophy of science relates to what epistemic attitude we should adopt towards the ontologies generated across the sciences. Should we, for example, follow the anti-realist empiricists who adopt a sceptical attitude when they only commit to observable bits of ontology, or should we be optimistic and follow the scientific realists who allow unobservables to inform their ontological commitments? Increasingly, one sees middle way views being represented in the topical literature: views like relativism, perspectivism or pluralism which attempt to glean the best from both realism and anti-realism. Influenced by Bas van Fraassen's Stance Empiricism, Anjan Chakravartty (notably 2017), for example, argues for equanimity between those who adopt different epistemic attitudes in the philosophy of science (see also Chakravartty and van Fraassen 2018). Specifically, we should be pluralists about what Chakravartty calls "epistemic stances" towards scientific ontology. Epistemic stances that meet minimal criteria of internal consistency and respect for successful empirical inquiry are equally legitimate, i.e. they are justified and warranted candidates for stance-choice. Those who adopt different epistemic stances, says Chakravartty, simply have different values regarding ontological investigations into the sciences. I will argue however that Chakravartty's *stance pluralism* (C_{SP}) cannot exclude pathological epistemic stances from its purview of ostensibly legitimate epistemic stances. One such pathological epistemic stance is what I will call the *pseudo-scientific epistemic stance* (PS_{ES}).

We surely do not want pseudo-sciences to count as legitimate sources of epistemic warrant, and it is therefore important that epistemic pluralists are able to formulate their pluralistic theses accordingly. Science plays an undeniable role in advancing human knowledge and understanding; and, if we embrace Chakravartty's model, we should require it to constrain stance-choice in a way that blocks pathological epistemic stances and the pseudo-sciences that licence them. Although I focus specifically on C_{SP} here, the conclusions to my argument should *mutatis mutandis* carry implications for other middle wayers involved in the scientific realism debate, particularly those who endorse some or other version of epistemic pluralism. This paper should moreover make a novel contribution to the topical literature because (1), although several commentators (e.g. Psillos, 2021; Slater, 2021) have recently suggested that C_{SP} may licence pseudo-sciences, there has not been a thorough explication of how exactly it does so; and (2) I take the pseudo-empirical practices found in Scientology to be exemplary of pseudo-scientific inquiry. Philosophers of pseudo-science often discuss e.g. astrology, creationism and anti-vaccination, but they rarely engage with Scientology.

In section 1, I introduce and explicate C_{SP}. In section 2, I outline PS_{ES} and one of its manifestations: Scientology. In section 3, I examine whether C_{SP} can exclude PS_{ES} from its purview of legitimate epistemic stances. In section 4, I conclude that it cannot; and C_{SP} is, by *reductio ad absurdum*, therefore prone to a form of debilitating relativism. In section 5, I offer a possible way forward by outlining two constraining criteria for stance-choice:

1. A *ground* of some sort in relation to which epistemic stances can be *ranked* by *degrees*.
2. Some *demarcation* of science from pseudo-science (even if such a demarcation is vague and pragmatic) so that we know what epistemic stances are *about*.

Lastly, I conclude by identifying loose-ends and consequent avenues for future research related to the above.

Note that my aim is not to dismiss C_{SP}, and replace it with something entirely new. My aim is more modest in suggesting ways to 'tighten up' C_{SP}'s stance-schema by articulating workable constraints that can block stances like PS_{ES} from falling within C_{SP}'s range of legitimate stances. I will also not engage with the debate over the nature of stances and the different kinds of stances that may exist.[1] I am specifically concerned with Chakravartty's epistemic stances which are directed towards scientific ontology.

Note also that when discussing Scientology, my language may come across as evaluative and dismissive. This is because I take it as given that Scientology involves pseudo-scientific practices, and that PS_{ES} is a pathological epistemic stance. I refer anyone unconvinced in this regard to Miller (1988), Dericquebourg (2010) and Urban (2011). The reader should not mistake my demonstration that Scientology can be legitimised within C_{SP} as a personal endorsement of Scientology. Rather, my aim to show that C_{SP} is faulty due to its being incapable of delegitimising Scientology. Even if Chakravartty were to explicitly claim that he excludes Scientology from C_{SP}, my argument is that the logical consequences of his view result in its implicit inclusion.

Lastly, note that my proposed way forward in section 5 is part of work in progress. I therefore merely outline one possible way C_{SP} might be amended to accommodate the conclusions of my arguments in sections 3 and 4.

[1] See the 2011 special issue of *Synthese* (volume 178, issue 1) edited by Darrell Rowbottom and Octavio Bueno for the status of the contemporary debate.

1. C_{SP}: Equanimity of Epistemic Stances

In this section, I briefly outline C_{SP} so that it is clear what Chakravarttian epistemic stances are and in what way they are supposed to be pluralistic (see also van der Merwe 2019). I focus specifically on two purported constraints Chakravartty places on epistemic stances: (1) rationality *viz*. internal coherence of an epistemic stance and (2) respect for – i.e. consistency with – successful scientific empirical inquiry. (1) and (2) are supposed to block unbridled relativism about epistemic stances. A key aim of this paper is to demonstrate that these two constraints are too weak, and then suggest how they can be suitably strengthened.

Epistemic stances, says Chakravartty, are not propositional; they are not truth-apt; and they do not equate to systems of beliefs, nor are they subject to belief. They do however play a role in producing knowledge and beliefs, and they contain truth-apt assertions. Epistemic stances

> are not claims about the world. [An epistemic stance] is an orientation, a cluster of attitudes, commitments, and strategies relevant to *the production* of allegedly factual beliefs. They determine how human agents go about generating claims about the world that they may then believe. [Epistemic stances] themselves are not believed, but rather adopted by people, held by them, and expressed in their actions (Chakravartty 2017, p. 47 original emphasis).

In the context of science, "[d]ifferent epistemic stances… generate different scientific ontologies" (Chakravartty 2017, p. 46). In other words, epistemic stances involve "'meta-level' or 'deeper-level' commitments from which different approaches to and claims about scientific ontology follow" (Chakravartty, 2017, p. 205; see also 2021).

Epistemic stances should not be confused with general philosophical stances. The former are, of course, specifically epistemic, while the latter relate to a broader worldview or general philosophical outlook on things (e.g. empiricism, deflationism, pragmatism or metaphysical realism [see van Fraassen 2002]). For Chakravartty, one's general philosophical stance can nonetheless inform one's epistemic stance towards scientific ontology. Empiricism, for example, is not itself an epistemic stance, but

> a certain [epistemic] stance is *characteristic* of empiricists generally… The commitments typical of this [epistemic] stance are ones that follow from an austere attitude toward ontology and, in particular, a distaste for what is perceived to be the

> excessive nature of metaphysical inference (Chakravartty, 2017, p. 47 original emphasis).

Conversely, metaphysical realists typically adopt a more liberal epistemic stance. They

> find themselves diametrically opposed to their empiricist counterparts in taking seriously the quest to reveal facts about underlying unobservable objects, events, processes, and properties as a means to scientific ontology (Chakravartty 2017, p. 48).

Epistemic stances further "reflect different degrees of epistemic risk one associates with ontological claims" (Chakravartty, 2017, p. 137). Epistemic risk is low when ontological claims are close to a "ground of empirical inquiry", and it is high when ontological claims are largely informed by metaphysical considerations (notably explanatory ones). Anti-realist empiricists typically make the former kinds of claims, while scientific realists typically make the latter kinds of claims. For Chakravartty, the empirical versus metaphysical content of scientific ontological claims thus scale in an inversely proportional way. They reside on what he calls a "spectrum of metaphysical inference". No epistemic stance is uniquely privileged, however. The amount of epistemic risk an ontologist is willing to tolerate comes down to her contextual values. These values are largely given, rather than rationally determined (van Fraassen, 2002, ch. 5; Chakravartty, 2017, ch. 7), and they ultimately determine one's choice of epistemic stance. In the end, stance-choice is "an expression of self".

Following van Fraassen's criteria for philosophical stances, Chakravartty nonetheless places two purported constraints on the legitimacy of epistemic stances:

> C1. Rationality: epistemic stances must be internally consistent, i.e. not self-sabotaging.
>
> C2. Respect empirical inquiry: epistemic stances must be consistent with or grounded in the empirical output of science.

Beyond C1 and C2, C_{SP} does not ostensibly attempt to constrain stance-choice. Chakravartty's aim is rather to emphasise the equanimity and freedom involved. He considers C_{SP} to be advancing a good kind of relativism (as opposed to the bad, unbridled kind) (Chakravartty, 2004; see also Lipton, 2004; Baghramian, 2019). Because we cannot ascend to a stance-transcendent God's-eye view, there is no way to judge between C1- and C2-compatible epistemic stances, and no epistemic stance can establish a non-question begging demonstration of its own legitimacy.

2. PS_{ES} and Scientology's Pseudo-Science

Chakravartty is aware that the permissiveness of C_{SP} may invoke concerns of the bad, rather than the good, kind of relativism. He however thinks that such concerns are unwarranted since C_{SP} does not licence contradictory claims about scientific ontology; it does not allow that both P and ~P can be true. C_{SP} nonetheless emphasises liberalism about choosing between epistemic stances and may not have the proper tools to block pathological epistemic stances from qualifying as legitimate. I argue to this effect in section 3. In this section, I firstly explicate the pseudo-scientific practices found in Scientology (section 2.1), and secondly the pathological epistemic stance associated with it: PS_{ES}.

2.1. What is Scientology?

Founded by L. Ron Hubbard, Scientology is a multi-faceted enterprise composed of numerous arcane doctrines, esoteric rituals and jargon-ridden texts (see Urban, 2011 for a thorough study).[2] Notably, Scientology includes pseudo-scientific inquiry that claims to draw belief-conducive data from experimental studies in order to advance human flourishing. The underlying idea is that all painful memories, although often temporarily lost to awareness, are permanently stored in the subconscious mind as parapsychological clusters called *engrams*. Through retrieving and reliving forgotten traumatic memories one can exorcise these unwanted spiritual blockages, blockages that cause mental illnesses, anxieties, addictions and the like. Scientologists call this form of therapeutic counselling *auditing*. Auditing is Scientology's core practice upon which many doctrinal facets are based. It is Scientology's "most sacred practice" (Harley and Kiefer, 2009, p. 202), a practice that church members maintain is genuinely scientific.[3]

A Church of Scientology advertising supplement titled 'Scientology: What is it?' states the following:

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[2] Scientology originally took the form of what Hubbard called Dianetics (as outlined in his 1950 book *Dianetics: The modern science of mental health*). Once Dianetics began to take on overtly religious tones, it morphed into what we now know as Scientology.

[3] The question of whether Scientology is largely a money-making pyramid scheme rather than a sincere philanthropic religion is often discussed (see e.g. Miller 1988; Cusack 2009; Wright 2013). I will however not engage with this debate since our concern is with the empirical, rather than financial, practices contained in Scientology.

> Scientology is the study of knowledge… For a Scientologist, the final test of any knowledge he has gained is, "did the data and the use of it in life actually improve conditions or didn't it?"… Scientology technology can enable a person to effectively resolve problems that he could not previously handle… to a point where he can gain higher levels of spiritual freedom (Church of Scientology, 2010, np).

The "data" referred to are the supposed empirical outputs from the auditing process. "Technology" includes, among other things, a device called an *E-meter* (sometimes referred to as "spiritual technology"). The E-meter is roughly a modified 'lie-detector' or polygraph instrument that senses electro-thermal activity on the skin via two cylindrical electrodes held in the hands of the *auditee* (the person being audited). A pointer needle on the E-meter's dial displays variations in electro-thermal activity to the *auditor* (the person conducting the audit). The E-meter putatively measures the *mass* of an engram. It does so by detecting the degree to which the body either allows or resists the flow of electrical and/or spiritual energy (Hubbard 1975, p. 1).[4] Auditors use the E-meter readings to locate, bring to conscious awareness, then discharge an engram mass from the auditee's *engram bank*. The E-meter needle dial, in turn, responds positively when this clogging is removed. In this manner, and the auditee slowly progresses up *the bridge* to enlightenment; she progresses from being a *preclear* to becoming *clear*.

The practice of auditing is, in effect, a tech-savvy version of psychoanalytic recovered memory therapy: a "science of the psyche" (see Harley and Kieffer 2009). According to Stefano Bigliardi,

> the E-meter bestows on the whole practice of auditing (and hence on Scientology) an aura of precision and reliability (through a specific, pseudo-scientific and rhetorical discourse) (2016, p. 677 emphasis removed).

E-meter auditors undergo rigorous training on the significance of characteristic needle patterns and on how to adjust various knobs on the machine. These needle patterns are then compared against a preclear's answers to a series of questions. Once recorded, the preclear's now revealed psychological state is registered on an *emotional tone scale* which plots "emotions in an exact ascending or descending sequence" from "body death" at the bottom to "serenity of beingness" at the top (Church of Scientology, 1998, p. 74).

[4] See Bigliardi (2016) for a detailed study of the E-meter, its role in Scientology and its relationship to conventional science and technology.

The preclear's position on the tone scale aids the counselling process; "by knowing where a person falls on the scale, one can precisely predict his actions" (Church of Scientology, 1998, p. 78). For example, someone with an emotional measure of 1 – *fear* – should behave in a predictably anti-social, nervous manner; someone with an emotional measure of 4 – *enthusiastic* – should be joyful and full of vitality. Testing of these predictions outwardly confirmed the reliability of this pseudo-empirical practice. In a detailed study, Michael Ross (not a card-carrying Scientologist) found significant empirical correlations between desirable personality traits and time in the church. The results "suggest that there was a significant increase in social ease and in effectiveness of goal-directed behaviour" (Ross, 1988, p. 630; see also Harley and Kieffer, 2009).

As auditing became widespread within the church, auditees (including Hubbard) began to testify to having memories from past lives. These findings led Hubbard to a further hypothesis. Each of us is an incarnation of an immortal spirit called a *thetan* temporarily trapped in *MEST* (matter, energy, space, and time). By following the auditing method, one can proceed beyond clear up a series of higher levels of esoteric self-actualisation: OT I to OT VIII (operating thetan level one to eight). OT VIII – also known as Truth Revealed – is where the human spirit realises "total freedom and power" (Church of Scientology, 2001, p. 27). At this highest level of self-realisation deliverance from all physical and mental maladies putatively obtains, along with professed telepathic powers and the ability to astral travel (Church of Scientology, 1969, p. 3). Further experimental testing purportedly confirmed the new theory. Russell Targ and Harold Puthoff (1977) documented what they claimed to be "hard" evidence under "rigorous" and "controlled" scientific conditions for Scientological remote viewing (Puthoff appears to have been a practicing member of the Church of Scientology around that time). Conventional science, of course, discredits these findings. However – as will become apparent in section 3 – it is unclear how C_{SP} can reject this kind of pseudo-evidence put forward by practitioners of pseudo-science.

2.2. What is PS_{ES}?

Sven Hansson (2021) suggests that the standard definition of 'pseudo-science' is any activity or teaching satisfying the following two criteria:

1. It is not scientific.
2. It is part of a non-scientific doctrine whose major proponents try to create the impression that it is scientific.

Scientology is not itself a pseudo-science. It is more like a philosophical stance, a special case of a general religious worldview, perhaps. As should be clear from the previous section, Scientology nonetheless involves certain pseudo-scientific practices, practices that meet Hansson's two criteria.

Chakravartty (2021) insists that pseudo-sciences are themselves also not epistemic stances. They are, he says, doctrines or belief systems that can be investigated for truth or falsity. According to C_{SP}'s own criteria, pseudo-sciences can nonetheless be associated with or licensed by epistemic stances (Chakravartty, 2021, pp. 60-61). Scientology is then not itself an epistemic stance, but it can – like other philosophical stances – be associated with a particular epistemic stance. Recall that Chakravartty defines an epistemic stance as "an orientation, a cluster of attitudes, commitments, and strategies relevant to *the production* of allegedly factual beliefs" (section 1). Pseudo-scientists clearly subscribe to some such orientation or cluster of attitudes, commitments etc. I am calling this cluster PS_{ES}, and it seems to meet C_{SP}'s criteria for being a legitimate epistemic stance. Plausibly, Scientologists adopt an epistemic stance towards science and scientific ontology that involves sincere but dogmatic attitudes, ill-informed commitments and flawed strategies relevant to the production of allegedly factual beliefs. In other words, PS_{ES} underlies Scientologists' beliefs and practices, but comes to the fore when they make claims about what exists. PS_{ES} may be pathological and misguided, but it is still an epistemic stance. Perhaps, pseudo-scientists are simply willing to take on more epistemic risk that reputable scientists and philosophers of science (Psillos, 2021 and Slater, 2021 make a similar point; see also Reisch, 1998). The same applies *mutatis mutandis* to other pseudo-sciences. PS_{ES} is not exclusive to Scientology; I have simply used Scientology as a case study. Creationists and astrologers, for example, are also seemingly adopting PS_{ES}.

Chakravartty does not discuss Scientology, but he does think that a "religious stance" rather than an epistemic stance motives creationists (Chakravartty, 2021). Chakravartty is not quite clear on what he means by a 'religious stance'. He does nonetheless state that creationists "discount certain aspects of the empirical evidence because to do so serves a religious purpose" (Chakravartty 2021, pp. 60-61). Presumably then a religious stance is one that puts religious motives before empirical ones. Those who adopt a religious stance (as opposed to an epistemic stance) might be prepared to ignore or fudge certain data in the name of their religious suppositions.

I am however not convinced that creationists and Scientologists necessarily adopt a religious stance in this sense. Some individuals seem to be led to creationism (or its descendent intelligent design) by what they consider to be a thorough investigation of the scientific facts (e.g. Behe, 1996). Although Chakravartty and I would agree that such an investigation must be faulty in some way, creationists do not always start from ulterior religious motives. Scientologists certainly consider themselves to be engaged in genuine scientific empirical inquiry. They seem to sincerely believe that there is scientific evidence for various mystical and parapsychological entities, and that their pseudo-empirical practices count as legitimate science.[5]

3. Is PS_{ES} a Legitimate Epistemic Stance?

One's choice of epistemic stance cannot itself be rationally examined since the values that inform stance-choice are "immune to the… power of philosophical arguments" (Chakravartty, 2017, p. 203). We must therefore investigate the *content* of an epistemic stance to determine whether it conforms to C1 (rationality) and C2 (respect empirical inquiry). If the content of some epistemic stance is suspect, then the beliefs associated with it are presumably also suspect, and it should not be a viable candidate for stance-choice (see also Psillos 2021; Steup, 2021). However, if PS_{ES} conforms to constraints C1 and C2, then it will *ipso facto* be a legitimate candidate for stance-choice in C_{SP}. This would result in the bad kind of relativism even if it does not involve asserting both P and ~P as true.

PS_{ES} is at odds with conventional science and with C_{SP}'s intended range of legitimate stances. However, if PS_{ES} counts as a legitimate epistemic stance by C_{SP}'s own criteria, then something has plainly gone wrong, and C_{SP} will need to be revised accordingly. I now argue that C1 and C2 are too weak to block pathological stances like PS_{ES}.

3.1. C1: Rationality as Internal Consistency/No Self-Sabotage

As mentioned in section 1, C1 states that an epistemic stance is rational if it is internally consistent, *viz*. not self-sabotaging. Chakravartty defines internal consistency of a stance as follows:

[5] These claims rely on us having a level of trust in Scientologists' sincerity. That is, we will have to believe that Scientologists are (on the whole) well-meaning, but misguided pseudo-scientists, rather than charlatans. I do not see how we can make judgements to the contrary without insights into their deep psychological motives (see Hansson, 2017; Dawes, 2018 for more on this issue).

> So long as the adoption of [an epistemic] stance is not demonstrably self-defeating according to its own standards of success, its adoption and the epistemic project associated with it are rational (2017, p. 49).

As outlined in section 2, Scientological auditing appears to be successful by its own standards, i.e. not self-defeating.[6] The avowed goal is to further human flourishing, and there are numerous documented attestations and independent studies (by non-church members) demonstrating that Scientology practitioners recurrently achieve this goal regardless of the outward absurdity of their methodology (see e.g. Urban, 2011, pp. 52-53; Harley and Kiefer, 2009, pp. 186-189). Although some leave the church disgruntled, members and ex-members have often claimed to find the auditing process highly beneficial (Wright 2013).

Gerald Willms interestingly suggests that one can interpret the behaviour of Scientologists "as rational (actions) due to the primary nonrational (ideological) context" (2009, p. 246). In other words, Scientological practices make sense in light of the presuppositions that inform them. As an anonymous review pointed out, "coherence is cheap". Quine (1951), for example, famously maintained that any belief can be held as true, come what may, provided one is willing to make drastic enough adjustments elsewhere in one's "web of belief". By adding auxiliary hypotheses or removing specific assumptions, internal consistency can be achieved by anyone who stubbornly insists on holding onto some belief.

Stefaan Blancke and colleagues interestingly argue that the

> reasons that promote pseudo-science are not intrinsically different from the reasons people use in everyday circumstances. However… science has introduced new norms for reasons and reasoning… [I]rrationality does not arise when people fail to reason or provide reasons, but because their reasons fail to meet the higher standards set by science (2019, pp. 445-446).

This suggests that C1 is not independently effective at blocking PS_{ES} without appeal to some further arbiter: the higher standards set by science, standards that are not themselves indexed to a specific epistemic stance (I return to this issue in section 5.2).

Amanda Bryant has argued convincingly that, on Chakravartty's account, the "minimal standard of rationality is [itself] not beyond the reach of epistemic stances but vulnerable –

[6] Stathis Psillos (2021) argues likewise that creationism is not obviously self-defeating. Matthew Slater (2021) suggests the same for climate change deniers and flat-earthers.

like everything else – to their differential influence" (2021, p. 8). That is, rationality should be a stance-relative, rather than a stance-neutral constraint, and C_{SP} therefore collapses into what Bryant calls "epistemic anarchy" or what I have called unbridled relativism (see also Baumann, 2011; Surovell, 2019; Kusch, 2020; Veigl, 2020 for similar arguments against van Fraassen's Stance Empiricism). Chakravartty recognises that

> limiting the constraint imposed by rationality to internal coherence opens the door to the possibility that more than one stance will count as rational… [A] question inevitably comes to the fore about whether this inherently permissive constraint is strong enough to rule out epistemically pathological stances (2017, p. 224).[7]

I am suggesting that we answer this question in the negative.

3.2. C2: Respect Empirical Inquiry

As mentioned in section 1, C_{SP} considers respect for the empirical output of science to play a constraining role in legitimising epistemic stances. Chakravartty does not however tell us what he thinks science is, and only offers minimal criteria for successful empirical inquiry, *viz*.

> successful predictions, or even better still, novel predictions (i.e. regarding phenomena that we have yet to investigate) that become successful as they are borne out in subsequent observation and experiment (2017, p. 24).

In this section, I investigate whether C2 can block Scientology's auditing method from counting as successful empirical inquiry. If not, then auditing seems to qualify as genuine scientific practice, thereby adding support to PS_{ES}'s legitimacy.

Given C_{SP}'s inclination to permissive pluralism, there seems to be no critical reason to exclude auditing's putative predictive success. For Chakravartty, we can be voluntarists about "questions of what would constitute telling evidence, how this evidence is obtained, and how it is assessed" (2017, p. 219). It is therefore unclear whether he can criticise the methods pseudo-scientists use in gathering evidence and what they regard as telling evidence. As discussed in section 2, Scientology auditees' emotional measure on the tone scale leads to successful predictions about their behaviour. The E-meter is moreover a kind of polygraph

[7] Chakravartty declines to offer examples of pathological epistemic stances. He does nonetheless state that an epistemic stance is pathological if its "associated epistemic policies are transparently flawed" (Chakravartty, 2017, p. 230). PS_{ES} seems to fit this definition.

machine that appears to have some degree of empirical credence.[8] Scientology, at least in a course-grained sense, makes successful predictions – even novel predictions – borne out in subsequent observation and experiment.[9] Without more robust criteria for what constitutes both genuine science and empirical success, C2 seems to licence the pseudo-scientific inquiry practiced in Scientology, and therefore PS_{ES}. Asserting such robust criteria would be analogous to demarcating science from pseudo-science, an enterprise scientific pluralists are naturally reluctant to undertake (see Mahner, 2013). I attempt such a demarcation – albeit a graded one – in section 5.2 by appealing to extant scientific institutional criteria.

C_{SP} also does not explain why we should respect rationality (C1) and successful empirical inquiry (C2) in the first place. This trust in stance-transcendent criteria of rationality and empirical grounding seems inconsistent with C_{SP}'s generic voluntarism. Arguing against van Fraassen's stance pluralism, Martin Kusch (2020) notes that consistency with empirical inquiry – like rational self-consistency – cannot be a stance-neutral criterion by stance pluralism's own rules. Instead, it is a value, and – like other values – only binding for those stances where it serves as a suppositional constraint. Kusch concludes that stance pluralism is, in fact, a form of relativism unconstrained by anything stance-extrinsic (see also Veigl, 2020; Bryant, 2021; Psillos, 2021; Slater, 2021). Although Kusch is targeting van Fraassen, it should be obvious how his argument transfers to C_{SP}.

In sum, PS_{ES} seems to meet C_{SP}'s minimal constraints C1 and C2. There appears to be no way for C_{SP} to counter those who adopt an epistemic stance that gives rise to sets of beliefs affirming pseudo-science and pseudo-technology.[10]Nor can C_{SP} seemingly fault those who judge spiritual or parapsychological entities, such as engrams, to be genuine scientific subject matters, and therefore worthy of ontological commitment. Plausibly, the same conclusion follows for other pseudo-sciences adopting PS_{ES} (e.g. creationism and astrology).

5. A Way Forward: On Constraining Epistemic Stances

[8] The National Academies of Science reports the reliability of polygraph testing as being between 81% and 91% (National Research Council, 2003). See also Lewis and Cuppari (2009) who argue for the empirical legitimacy of polygraphy. Ekman (1996) and Cacioppo et al. (2000) disagree.

[9] Kyle Stanford notes likewise that creationism enjoys "'some' degree of representational accuracy"; the theory is not "wrong or misleading about everything" (2003, p. 567; see also Mahner, 2007, pp. 518-519). According to van Fraassen, there is no clear demarcation between science and religion (2002, pp. 153-155).

[10] See Hansson (2020) for a thorough discussion of pseudo-technology and its relation to pseudo-science.

Given the above, C_{SP} – as currently formulated – appears to tacitly promote a debilitating kind of epistemic relativism. This is because of two central problems with the view:

> P1: No stance-neutral criteria for evaluation of and judgement between epistemic stances.
>
> P2: No demarcation of science from pseudo-science.

Exception-free strict demarcations in both areas are notoriously problematic. A graded ranking of stances and sciences may therefore be more viable. As Hasok Chang (2020) suggests, "responsible pluralism" involves the ranking of "epistemic systems" rather than "equal validity" (see also Boucher 2018). Epistemic systems are not equivalent to epistemic stances, but – as will become apparent – Chang's suggestion carries over from the former to the latter.

Matthew Slater (2021) is similarly concerned that Chakravartty's equal validity thesis does not allow for evaluation of and judgement between epistemic stances. Slater asks,

> should Chakravartty go further in his characterization of epistemic stances? Might we not recognize a hierarchy of stances that do more than encapsulate how we approach matters of epistemic risk, that inform how we arrange these (and related) epistemic policies? (2021, p. 39).

Indeed; Slater however does not outline how to construct such a hierarchy. I attempt to do so in this section. This will involve arguing that the following two norms can serve as solutions to P1 and P2:

> N1: There must be some stance-neutral constraint (or constraints) that allows for ranking epistemic stances.
>
> N2: There must be some stance-neutral criterion (or set of criteria) for ranking disciplines aspiring to scientificity.

N1 does not require some transcendental principle of rationality or the like which quantifies over legitimate epistemic stances. In this section, I argue that epistemic stances can instead be ranked in relation to a ground of *empirical detectability*. Epistemic stances can thus qualify as legitimate to varying degrees.

Regarding N2, we should not assume that everyone knows *ab initio* what constitutes respectable empirical science. Chakravartty's silence on the demarcation problem is odd given that his overall concern is with *scientific* ontology. One should surely delineate science

prior to engaging with scientific ontology. As Martin Mahner (2007, 2013) suggests, there is a burden on one who claims to hold the correct view of some aspect of science to explain (at least vaguely) what their view is *about*. In other words, we need an account of what an epistemic stance (or a plurality of epistemic stances) is directed towards. I argue that that we can appeal to institutional criteria to do so. This does not involve imposing a strict demarcation norm on science, but rather letting science itself tell us what it is (see also Bryant, 2021). As we will see, this results in a ranking of sciences rather than a sharp demarcation.

To satisfy N1 and N2, I propose that C1 (rationality as internal consistency/no self-sabotage) and C2 (respect empirical inquiry) from section 3 can be restated as follows:

> C1′: An epistemic stance is legitimate to the degree that it is concordant with what is empirically detectable using our best scientific instruments (section 5.1).
>
> C2′: A discipline aspiring to scientificity is scientific to the degree that it conforms to a definitional list of criteria empirically gleaned from extant usage in institutionalised science, a list in which empirical detectability is primary (section 5.2).

5.1. N1: Grounding and Ranking Stances

Chakravartty (e.g. 2007, ch. 4) has argued at times for causal realism premised on a distinction between what is scientifically detectable versus undetectable. Starting with a respect for the ontological implications of empirical detection, he infers from there to causal dispositions. Chakravartty's recent overlay of free-to-choose voluntarism however renders his commitment to causal realism merely a personal preference rather than a potential criterion for epistemic constraint. Returning to his causal realist roots may provide Chakravartty with the epistemic device needed to block the runaway of epistemic stances that otherwise follows from C_{SP} as currently formulated. Dispositions could potentially serve as a grounding criterion for stance-choice. Instead of being freely chosen, epistemic stances could be ranked in some way according to their degree of commitment to or concordance with a metaphysical grounding of dispositions. This might fit nicely with Chakravartty's notion of a spectrum of degrees of metaphysical inference (section 1).

We may however not want to commit to a grounding arrived at via *a priori* metaphysical speculation. Can one ground a spectrum of ranked epistemic stances in something *a posteriori*, yet objective and stance-neutral? And, can one do so utilising the tools C_{SP} already has in place? I propose that *empirical detectability* itself fulfil this role. Although often

associated with empiricism, detectability – as Chakravartty (2007, ch. 4) notes – is arguably *the* defining feature of institutionalised scientific inquiry. 'Institutionalised scientific inquiry' should be understood here as scientific inquiry that occurs within academic (typically university) and national (typically government funded) research centres and laboratories (see Ladyman and Ross 2007, ch. 1). Detection involves an act of manipulation or measurement and the subsequent registering of data generated in such a manipulation or measurement. We can think of detection as an extension of observation. 'Detection' is observation enhanced by our best scientific instruments, and 'detectability' is obviously the modal of detection (see also Maxwell, 1962; Hacking, 1983; Alspector-Kelly, 2004; Musgrave, 2018). Our best scientific instruments are not those utilised in making minimally successful (novel) predictions. They are instead those utilised in empirical inquiry resulting in the *most accurate* (novel) predictions (or in corroborating the riskiest predictions, as Popper might put it). It should be uncontroversial (among non-pseudo-scientists anyway) that such kinds of instruments and (novel) predictions are *ceteris paribus* found in institutionalised science (Ladyman and Ross 2007, ch. 1).

This is not to say that the only legitimate epistemic stance is the one most strongly tied to detectability. There is room for both the anti-realist empiricist's ontological conservativism and the metaphysical realist's ontological ambitions. Metaphysics however comes at the cost of lowering the legitimacy of one's epistemic stance proportional to the degree of deviance from a ground of empirical detectability. Ontologically speaking, we thus ground and rank epistemic stances by their degree of concordance with what is detectable. We are not free to choose how much epistemic risk we prefer, as Chakravartty has it (section 1). Instead, the legitimacy of an epistemic stance drops off as a function of the degree to which its ontological commitments are distant from what is detectable, and our confidence in – the degree of warrant we assign to – an epistemic stance should drop off proportionally.

What does it mean for an epistemic stance to be concordant with detectability? A detailed account of this relationship would require its own paper-length treatment. Roughly however to be concordant with detectability, the collection of attitudes, commitments and strategies that constitute an epistemic stance should centre around both the empirical practices associated with detectability and the ontological implications of detectability as practiced in institutionalised science. Such a centring involves the idea that ontological claims which are part of the content of, and are generated by, some epistemic stance should be 'verifiable' through detection. 'Verifiable' is in scare quotes because detection here is not a tool for

epistemic demarcation as strict empiricists might suggest. Verifiability is rather a ranking criterion that can be satisfied to differing degrees. The degree to which some ontological claim is verifiable by detection determines the degree to which the epistemic stance that generates the claim is a viable candidate for stance-choice. This is not to ignore other important facets of successful scientific practices – such as theory and prediction – but merely to grant detectability primacy. Arguably, there can be no scientific theory or prediction without detection. Without detection – without some empirical contact with its subject matter – science would 'just' be metaphysics or mathematics.

We can then, for example, adopt epistemic stances that involve commitment to the existence of both medium-sized observables (e.g. water, organisms and planets) *and* the unobservable entities and structures (e.g. genes, electrons, gravity and distant galaxies) that are detectable by our best scientific instruments (see also van der Merwe 2020, forthcoming). We should however hold epistemic stances that commit to what is beyond the detectable lightly depending on their degree of concordance with detectability. Let us say, for example, that we are considering whether we should adopt an epistemic stance that commits to electrons: an epistemic stance that generates the ontological claim "electrons exist". Electrons play a central role in scientific theory and prediction, but they are not observable nor directly detectable. They are however indirectly detectable through the detection and observation of the tracks they leave in cloud chambers (see Gell-Mann 1994 for detail). On the account I am developing, the claim "electrons exist" is therefore verifiable to a large degree, even if it is not verifiable *simpliciter*. The relevant epistemic stance then exhibits a high degree of concordance with detectability. It enjoys a high degree of legitimacy, and we can therefore adopt it with a suitably high degree of confidence (if not full confidence).

An epistemic stance incorporating an ontological commitment to supersymmetric strings deserves a lower degree of legitimacy and associated confidence given that supersymmetric strings are inferred theoretical entities with, at best, a tenuous degree of concordance with detectability (Smolin 2006). Epistemic stances that commit to supersymmetric strings are tenuously concordant with detectability. And epistemic stances that commit to metaphysical fundamentalia – like dispositions, tropes, haecceities or monads – deserve a very low, but non-zero, degree of legitimacy and therefore confidence (non-zero because metaphysicians generally ensure that their ontological posits are, at least, not contradictory to the results of our best science's empirical practices). Scientology's engrams are, of course, even further away from being detectable in the way outlined above, and therefore deserve the lowest, but

still non-zero, degree of legitimacy and therefore confidence (non-zero for fallibilistic reasons elaborated below).[11]

C1′ follows from the above. C1′ does not strictly outlaw PS_{ES}; pseudo-sciences do sometimes exhibit some minimal empirical success (section 3.1). C1′ will however grant PS_{ES} a very low ranking in my proposed hierarchy of stances.

C_{SP}ists may however object that appeal to such a purported stance-independent criterion leads to an infinite regress of justifications since any such criterion will itself need to be justified by some further criterion and so on. Roderick Chisholm (1973) labels this "the problem of the criterion". Howard Sankey (2010, 2011) has however argued persuasively that a version of *reliabilism* (as naturalized epistemic warrant) blocks the problem of the criterion. First, we establish indisputable instances of (contextual) empirical knowledge, then formulate epistemic norms (stance-independent criteria) there from. We then use these norms to judge new candidate instances of knowledge. This solution to the problem of the criterion fits nicely with the above institutionalised approach to grounding and ranking epistemic stances. The criterion of detection is gleaned from an investigation of successful science itself rather than from the armchair, and is then utilised in a stance-independent way to judge between epistemic stances.

5.2. N2: 'Demarcating' Science from Pseudo-Science[12]

James Ladyman and Don Ross have suggested demarcating "good science – around lines which are inevitably fuzzy near the boundary – by reference to institutional factors" (2007, p. 33; see also Collins et al., 2017). Some discipline is scientific if it is "part of an objective research project fundable by a *bona fide*[13] scientific research funding body" (Ladyman and

[11] Probability theory may offer one way to formalise such a ranking schema. Jared Henderson (2021) has suggested that we can make sense of "partial verification" in terms of probability. Since probability comes in degrees, a claim is more or less verified depending on how probable it is made by the available evidence. In terms of our discussion, we can think of the ontological claims that form part of the content of an epistemic stance as being made more or less probable by the degree to which those ontological claims are verifiable by detection. The more probable an epistemic stance's ontological claims are, the more legitimate it will be, and the more our confidence in it will be warranted.

[12] See Hansson (2021) and for a thorough discussion of the demarcation problem. See Hirvonen and Karisto (2022) for a history.

[13] An anonymous reviewer pointed out that many English speakers mistakenly use the term '*bona fide*' to mean something like 'legitimate', when it, in fact, means 'in good faith'. The context of the Ladyman and Ross quote

Ross, 2007, p. 38). There are however two problems with this purported demarcation. Firstly, Ladyman and Ross' funding criterion excludes private or self-funded scientific research conducted outside the institution, e.g. Google funded AI research or the Wolfram Physics Project. Secondly, we are not told what a *bona fide* funding body is. If it is open to interpretation, then Scientological auditing might qualify as scientific. The general institutional motif in Ladyman and Ross' attempted demarcation may nonetheless be applicable here.

As with legitimate versus illegitimate epistemic stances, we need not stipulate top-down norms that strictly demarcate between science and pseudo-science. The history of the philosophy of science is littered with exception-ridden attempts to do so (see Nickles, 2013). Instead, domains of inquiry aspiring to scientificity can form a graded continuum, a spectrum of sciences. There will then be some overlap between science and pseudo-science (Thagard, 1988, ch. 9; Hoyningen-Huene, 2013; Mahner, 2013; Collins et al., 2017; Dawes, 2018; Hirvonen and Karisto, 2022). I propose that we list the criteria currently operant in institutionalised science for determining whether a discipline deserves the title "science". We are thus defining science according to characteristics of institutionalised lexicological and administrative use. Such criteria arguably include (1) successful empirical practices (centred around detectability); (2) reproducibility of results; (3) theoretical coherence; (4) unificatory and explanatory scope; (5) consistency with other parts of established knowledge; (6) methodological honesty; (7) consensus within the scientific community; and even factors like (8) publication and citation count in reputable journals, (9) number of institutionally recognised prizes awarded; and, of course, (10) funding by a *bona fide* funding body.

This list is drawn from a thorough reading of those who have made similar attempts (notably Sven Ove Hansson, Paul Hoyningen-Huene, Martin Mahner and Paul Thagard) combined with personal observations of the way that institutionalised science operates. My ten criteria are however not intended to be a list of necessary and sufficient conditions for scientificity. Ultimately it is an empirical matter which criteria for scientificity are operant in institutionalised science at whatever time, a matter that could be established via x-phi-style studies. The list is platitudinous in the sense that it is *prima facie* plausible, but open to revision as science progresses. For reasons that will become clear, the first criterion –

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suggests that they intend the former. For consistency, I will follow Ladyman and Ross in using the mistaken sense of the term.

successful empirical practices (centred around detectability) – is however not open to revision.

Some disciplines will meet all of the criteria, others most of the criteria, and still others few of the criteria. The degree to which a discipline meets the criteria will determine its degree of scientificity. As with epistemic stances, the first criterion in this list – successful empirical practices centred around detectability – appears primary in determining scientificity. Some discipline may meet various of the other criteria, but without empirical detection playing a central role, we would not generally consider it a fully-fledged science (String Theory again comes to mind). As with our stance-grounding criterion from the previous section, detection serves as *the* primary ranking criterion when it comes to scientificity. Whether ranking epistemic stances or sciences, detection thus grounds the relevant continuum.

Centring on detection in this way also blocks a kind of possible worlds scenario where respectable scientific institutions might radically change their criteria for scientificity, thereby granting Scientology legitimacy. If Oxford and Cambridge arbitrarily started teaching Scientological auditing as science, or suddenly adopted unreliable criteria for scientificity, auditing would still be pseudo-scientific, and the unreliable criteria would still be unreliable. Hence, the importance of granting primacy to empirical detectability. As Sandra Mitchell notes, "[e]mpirical test remains the arbiter of scientific worth" (2009, p. 108). Even our favourite criteria must, in the end, earn their keep in the tribunal of experience, or more properly, in the tribunal of detection (see also Fahrbach, 2017; Mizrahi, 2020).

I am aware that scientists' work is sometimes largely autonomous from experiment (whether practically or epistemically). An anonymous reviewer pointed out that there are areas of science in which the (sometimes contested) links to empirical work cover vast social distances. These links can be tenuous, indirect and formed by complicated proxies. Such autonomy from experiment, according to the reviewer, does not signify that science is not being practiced. Indeed; my argument is not that scientists must be engaged in experimental work to count as scientists. Rather, my argument is the roughly Popperian one that, to count as scientific, claims must have 'empirical consequences', i.e. they must be (directly or indirectly) testable and they must be revisable pending the outcome of such testing. Someone's work must in some or other way be linked – even tenuously – to empirical detection; otherwise it is not science. And, *ceteris paribus*, the closer to detection it is, the more scientific will be. On my account, mathematicians working on pure mathematics, for example, are not practicing science, but mathematicians working in applied mathematics –

where their formalisms might hold empirical implications – are practicing science (to some degree).

Prima facie then, standardly accepted scientific disciplines – such as condensed matter physics, biochemistry and clinical pathology, for example – deserve the highest degree of scientificity. Evolutionary biology, complexity science and Big Bang cosmology plausibly deserve a slightly lower but still high degree of scientificity. Evolutionary psychology, linguistic anthropology and macroeconomics – having concordance with only some of the eligibility criteria – might deserve a still lower degree of scientificity. While, Quantum consciousness, acupuncture and dowsing, for example, deserve an extremely low degree of scientificity.[14]

Let us look at how Scientology matches up to the criteria of scientificity listed above.

1. Successful empirical practices (centred around detectability): Scientology would only very minimally meet 1. The 'evidence' for engrams is highly inferential. It does not meet the rigorous standards upheld in institutionalised science. If it did, it would presumably have been incorporated into the standard scientific canon.
2. Reproducibility of results: I am not sure if anyone has tried, but we can assume that Scientology's results are only reproducible in a Scientological setting where Scientologists themselves *interpret* the relevant 'experiments'.
3. Theoretical coherence: As far as I can tell, Scientologists do not employ formal theories. As argued, the practice of auditing can however be considered internally coherent, and this does – in some minimal sense – potentially satisfy 3.
4. Unificatory and explanatory scope: As before, 4 will only be satisfied in a minimal sense. Scientology's 'scientific' practices will presumably only enjoy unificatory and explanatory scope within a pre-existing Scientological framework. Outside of that, it has little to zero scope.
5. Consistency with other parts of established knowledge: Scientology will surely fail on 5. The 'knowledge' generated in Scientological practices largely stands apart from the general canon of human knowledge (scientific or otherwise).

[14] As before, if ranking disciplines proves controversial, x-phi studies could empirically establish degrees of scientificity by surveying institutional norms.

6. Methodological honesty: This issue is debatable. As intimated in footnote 4, I think that we should *ceteris paribus* trust in Scientologists' sincerity. It is however plausible that some – particularly among the senior leadership – are 'fudging the data'. That said, we should be suspicious as to whether Scientological practices satisfy 6.
7. Consensus within the scientific community: Scientology will fail on 7 since 'the scientific community' is the institutionalised scientific community, and they obviously reject the 'empirical' results coming out of Scientology.
8. Publication and citation count in reputable journals: I have not done a thorough survey, but I did not come across any Scientological papers in reputable journals while doing my research for this paper. I suspect that this is because there are none.
9. Number of institutionally recognised prizes awarded: This number is probably zero since, as mentioned, the scientific institution rejects Scientology.
10. Funding by a *bona fide* funding body: As mentioned the term '*bona fide*' is problematic. Nonetheless, I cannot find any evidence of Scientological 'research' being funded by a *bona fide* funding body (in the sense that Ladyman and Ross understand the term).

Given the above, we can conclude that – like quantum consciousness, acupuncture and dowsing – Scientology deserves an extremely low degree of scientificity.

In any event, a list of institutional criteria for scientificity, such as the one I have suggested, will be flexible. It will be shortened or lengthened as science evolves generically. Further, new disciplines can join the scientific rankings, while extant disciplines may either shift up or down the ranking continuum or potentially fade into obscurity (see Thagard 1978 for a similar account).

Mario Bunge (1983), Martin Mahner (2007, 2013) and Damian Fernadez-Beanato (2020) have outlined similarly graded and multi-criterial solutions to the demarcation problem. In defining science, says Fernandez-Beanato, we will "be dealing with a vague concept", and pseudo-sciences will sometimes exhibit properties of scientificity (2020, p. 383; see also Dawes, 2018). It is also not necessary that "the list of properties be exhaustive or unchangeable, provided that it conveys a sufficiently complete representation of science" (Fernandez-Beanato, 2020, p. 383; see also Hoyningen-Huene, 2013; Hirvonen and Karisto, 2022).

The schema I am proposing potentially solves the problems with Ladyman and Ross' attempted demarcation. Firstly, extra-institutional science can enjoy an appreciable degree of scientificity since Google's AI research and the Wolfram Physics Project will meet some, if not most, of the listed criteria. Although we are drawing on institutional criteria, we are not specifying that only institutionalised science counts as science. Secondly, a *bona fide* funding body will be a body that funds projects in disciplines that conform to all or most of the institutionalised criteria for scientificity.

C2′ follows from the above. Pseudo-sciences are not strictly excluded from considerations of scientificity, but instead reside at some of the lowest points along a continuum of potential sciences.[15] In fallibilistic spirit, we must, I think, entertain the possibility some pseudo-science like those found in Scientology might turn out to be correct, even if the possibility seems remote (see also Thagard, 1988, ch. 9; Stanford, 2003; Mahner, 2007).

Chakravartty may however respond that he takes it for granted that graded institutional criteria similar to those I have listed should inform our conception of what constitutes science versus pseudo-science. If so, then, firstly, this should be made explicit. As mentioned in the previous section, some gesture at the demarcation problem should arguably be made by all philosophers of science. Secondly, ranking domains of inquiry would introduce the following dilemma for C_{SP}. Scientificity rankings presumably affect our epistemic stances. This is what my introduction of Scientology and subsequent *reductio ad absurdum* argument intended to show. Epistemic stances directed towards the ontologies of high-ranking sciences enjoy a higher degree of legitimacy than PS_{ES}, for example, which is directed towards the ontologies of low-ranking 'sciences'. Our graded continuum of epistemic stances maps onto our graded continuum of sciences (both grounded in detectability). The central tenant of C_{SP} is however that epistemic stances satisfying constraints C1 to C2 are *equally* legitimate rather than ranked. C_{SP} cannot concurrently rank sciences and maintain voluntarism about epistemic stances given that sciences and epistemic stances affect each other's credence, i.e. the degree of confidence we should have in them.

Another potential objection is that ranking disciplines by degrees of scientificity simply introduces many demarcations in need of explication. For instance, there is room for debate

[15] If graphed, this continuum should form a bell curve shape. Legitimate sciences cluster in the centre and pseudo-sciences reside in the long tail of the distribution. See also Mahner (2007) and Boudry (2017) for similar ranking schemas.

over whether certain technological disciplines – engineering and mining, for example – deserve a high versus low scientificity ranking (see Mahner, 2007). Indeed; there is some vagueness here, but – as with epistemic stances – the point of ranking sciences is to counter pathological pseudo-sciences and not to quibble over the status of technological disciplines. My sense is that technological disciplines are scientific to some degree, particularly if they make contact with empirical detection. Arguably however, technological disciplines do not actually aspire to scientific status and so the issue may be orthogonal to the demarcation problem. Either way, there is no doubt that our institutional list will allot Scientology an extremely low scientificity ranking. This is sufficient for our purposes.

In any event, ranking epistemic stances and sciences most importantly avoids C_{SP}'s debilitating relativism. Instead of equal validity, we are thinking it terms of continuums and degrees.

Conclusion

No doubt, questions remain regarding, for instance, how exactly we should measure degrees of concordance with detection; what exactly it means to ground a continuum; and where our two continuums begin and end (i.e. what the absolute minimum and absolute maximum state of stance-legitimacy or scientificity are). Moreover, one may ask what exactly counts as a criterion of scientificity and how are they weighted against each other. Working through these issues is an ongoing project. We nonetheless have a non-relativistic outline that maintains a respect for epistemic diversity and for empirical inquiry without granting pseudo-stances and pseudo-sciences equal status to respectable stances and sciences.

My outline should moreover be fairly easily integrable into C_{SP}. C_{SP} already has the notion of a continuum of metaphysical inference in place. Continuums of epistemic stances and of sciences can potentially be integrated into, and work in tandem with, SP's existing continuum. In doing so, C_{SP} would however need to replace its epistemic voluntarism with notions of grounding and ranking. This would involve sacrificing relativism (whether the good or the bad kind). Nonetheless, if my argument holds, this seems a small price to pay; and it would constitute a positive move forward in, not only providing tighter constraints on stance-choice and on scientificity, but also in combatting pseudo-science.

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