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SPECIAL FEATURE: CONCEPTUALITY AND NON-CONCEPTUALITY IN BUDDHIST EPISTEMOLOGY

The essays that follow grew out of a workshop held at the Center for Buddhist Studies, University of California, Berkeley, in March 2018, on the topic of conceptuality and non-conceptuality in Buddhist philosophy. Discussions at the workshop focused specifically on the tenability of the claim made by the two Buddhist epistemologists Dignāga and Dharmakīrti that perceptual cognitions are non-conceptual and yet also contribute to the contents of conceptual thought. The four contributions collected here present just a few of the resulting reflections.

Pac-Man to the Rescue? Conceptuality and Non-conceptuality in the Dharmakīrtian Theory of Pseudo-perception



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Introduction

This essay explores the Dharmakīrtian¹ notion of a “concept” (*vikalpa*) in the specific context of a “pseudo-perception” (*pratyakṣābhāsa*), that is, cognitive events that appear to be instances of perception, but actually are flawed or erroneous (*bhrānta*) in a way that disqualifies them from being genuine cases of perception. The distinction between the conceptual and the non-conceptual in this context raises a key issue in the Buddhist philosophy of perception: to what extent does perception involve the type of constructive process implied when one identifies a cognition as “conceptual” or *savikalpaka*? In particular, it seems possible that, on the Dharmakīrtian analysis, some form of *vikalpa* is involved in the mere selection of sensory objects through a process of binding an object’s features together. If perceptual binding (perhaps along the lines of feature integration)² in a sensory modality is *savikalpaka* or “conceptual,” then Dharmakīrtian claims about the *nirvikalpaka* or “non-conceptual” nature of perception become difficult to interpret.³ In the process of examining this issue, we will encounter important implications for the overall role of philosophy in Dharmakīrti’s project.

Below, I begin by assessing what is at stake in drawing a distinction between conceptual and non-conceptual error by focusing on a crucial issue for Dharmakīrti and his followers, namely the notion that the fundamental error that distorts all ordinary cognition—and which must be removed to obtain the highest soteriological goal—is itself a form of non-conceptual error. Second, I will move on to a consideration of Dharmakīrti’s account of different forms of pseudo-perception, with particular attention to the type of conceptuality involved in the binding problem noted above. Third, a concrete example of pseudo-perception will enable us to explore the boundaries of the conceptual and non-conceptual. And finally, I will conclude by reflecting on the way that the interaction between the conceptual and non-conceptual may hold important implications for the role of philosophy in Dharmakīrti’s soteriology.

What’s at Stake: The Internal Distortion

As with all Buddhist philosophers, Dharmakīrti’s work is shaped by soteriological concerns, and a key issue is the notion of ignorance (*avidyā*), since it is only through the elimination of ignorance that those highest soteriological concerns can be achieved.⁴ Dharmakīrti discusses ignorance at various points, but one especially intriguing passage involves his distinctive philosophical method, in which he deploys arguments at multiple levels of analysis (see Appendix 1 for a translation of the passage).⁵ In that passage, Dharmakīrti first speaks from the standpoint of “External Realism” (*bāhyārthanaya*—literally, the “System [that asserts] External Objects”); this level of analysis assumes a nominalist ontology that involves the real existence of extra-mental stuff in the form of irreducible particles of matter. From this standpoint, ignorance is primarily manifested through errors inherent in conceptuality; indeed, Dharmakīrti goes so far as to say “Ignorance is conceptuality” (*vikalpa eva hy avidyā*).⁶ And since perceptual cognitions are, for Dharmakīrti, inherently non-conceptual, there is no concern that these cognitions themselves are distorted by ignorance.

At this point in the passage, Dharmakīrti moves to his highest level of analysis: Epistemic Idealism (*antarjñeyanaya*, literally the “System [that holds] Objects of Awareness to be Internal”). For External Realists, it would seem that the elimination of ignorance does not change perception itself; instead, eliminating ignorance just corrects the perceptual judgment that follows on the initial, non-conceptual presentation of a *grāhyākāra* or phenomenological form of the object.⁷ In contrast, for Epistemic Idealism, ignorance manifests even in sensory perceptions, which are necessarily non-conceptual in Dharmakīrti’s system. Specifically, ignorance manifests as an “internal distortion” (*antarupaplava*) that constitutes the intentional structure of subject-object duality (*grāhyagrāhaka*) that is always present in ordinary perceptual consciousness. Thus, eliminating subject-object duality—the

internal distortion that is the manifestation of ignorance—is the new soteriological goal from the standpoint of Epistemic Idealism, Dharmakīrti's highest level of analysis.

To clarify further what is at stake here, it is helpful to recall that, according to Dharmakīrti's highest level of analysis, the ultimate nature (*tattva*) of the mind is “emptiness of duality” (*dvayaśūnyatā*), where “duality” (or, more literally, the “dyad”) refers to the duality constituted by subject-object intentionality.⁸ Ordinary beings, however, do not experience the mind as empty of duality, and, pointing to the dualistic nature of ordinary experience, Dharmakīrti thus says:

Even though the nature of awareness is undifferentiated, those with distorted experience (*viparyāśīṭadarśana*) characterize it as if it were differentiated into object, subject, and awareness.⁹

And also:

In accord with [confused] experience, object, subject, and awareness are construed as the structure (*sthiti*) of a reliable cognition's object, means, and result, even though that structure does not [ultimately] exist.¹⁰

To describe the way that this error of subject-object duality emerges, Dharmakīrti uses a stock example.¹¹ Here is Cat Prueitt's translation:

For example, clay shards and such appear otherwise to those whose eyes are distorted by mantras, etc., even though these [shards] do not have that nature because they do not appear in just that way to those whose eyes are not distorted.

The point of this example is that when the spell is cast, the clay shards now appear otherwise—the usual example is horses, elephants, and such—to the persons affected by the spell. In other words, when they say “I see a horse!” they are not misreporting the apparent contents of their visual experience. Here, as noted above, an even more typical example is *timira*, the “optical floaters” that appear in one's vision due to an impairment in the visual faculty. For Indian philosophers, floaters typically look like hairs floating in the visual field, and here again, when one says “I see hairs!” this error is not a matter of misreporting experience. Instead, as Prueitt says, “The key to non-conceptual errors is that they are given in the cognitive image itself” prior to the conceptual interpretation of that image in a perceptual judgment.¹²

With this in mind, Dharmakīrti responds to an objector who still believes that, for Dharmakīrti and other Epistemic Idealists, the error that constitutes subject-object duality must be a conceptual act. This objector maintains that errors involve falsely attributing qualities to a perceived object due to being deceived by an apparent similarity between that object and some previously experienced one. Here the stock example is a mirage, where the heat waves

are misinterpreted to be water due to a certain similarity in appearance. The objector maintains that, since Dharmakīrti (in his Epistemic Idealist mode) holds that there are no extra-mental objects at all, one could never wrongly interpret one's perceptions as involving external objects that are not actually external. One could never make this mistake because one could not be interpreting one's present experience under the influence of some similarity to a prior experience in which one actually did see external objects. There could never be any similarity to that prior experience of extra-mental objects because, according to Epistemic Idealism, one has never had an experience of extra-mental objects even once.¹³

To respond to this objection, Dharmakīrti says:

There is that kind of error [involving similarity], but there is also the one that by its nature arises flawed in that it originates from an internal distortion (*antarupaplava*). As is the case with the perception of hairs by a person with optical floaters and so on, it contains a false (*vitatha*) cognitive appearance without depending upon seeing similarity and such.¹⁴

Here, we can see the crucial role that the non-conceptual plays in Dharmakīrti's thought, especially in the context of non-conceptual error. By raising and responding to the objection about error through similarity, Dharmakīrti has effectively closed the door on any interpretation of subject-object duality as emerging from a conceptualization of perceptual content that, prior to its conceptual interpretation, is not already flawed. Instead, for Dharmakīrti the flaw that causes duality is present in the cognitive system as the aforementioned "internal distortion" that, like the case of optical floaters, introduces error prior to any conceptual interpretation. And clearly, that internal distortion lies at the root of Dharmakīrti's soteriological concerns, since his highest soteriological goals require its elimination. If we assume that Dharmakīrti's explicit emphasis on soteriological issues (as evinced by the *Pramāṇasiddhi* chapter of his *Pramāṇavārttika*) is not mere lip service, then distinguishing between non-conceptual and conceptual error is clearly of the utmost importance for him. It is to that topic that we shall now turn.

Conceptual Forms of Pseudo-perception

As with most topics in Dharmakīrti's *Pramāṇavārttika*, the issue of pseudo-perception (*pratyakṣābhāsa*) is discussed in relation to the account given by Dignāga in his *Pramāṇasamuccaya*, a text on which the *Pramāṇavārttika* is a rather prolix commentary. Here, we will examine some relevant features of Dharmakīrti's account, along with some key interpretations from his first commentator, Devendrabuddhi. An original translation of the relevant verse from Dignāga's work (PS 1.7cd–8ab) and the corresponding block of verses in Dharmakīrti's *Pramāṇavārttika* (PV3.288–300) is found in Appendix 2.¹⁵

For Dharmakīrti, in the end there are really just two types of pseudo-perceptions: the conceptual and the non-conceptual (see PV3.300), although conceptual error can also be divided into three sub-types. As is evident from Dharmakīrti's verses and his commentators, the Dharmakīrtian interpretation of Dignāga's verse ends up largely ignoring the typology that Dignāga proposes for conceptual error, whereby error should be considered as involving "erroneous cognition" (*bhrāntijñāna*), "cognition of the conventionally existent" (*saṃvṛtisajjñāna*), and some loosely defined third category that is exemplified by inference, memory, and yearning (*abhilāṣa*). Instead, Dharmakīrti proposes a threefold distinction of (1) conceptual cognitions that are "based on a convention" (*saṃketasaṃśraya*), (2) those that involve the "superimposition of another object" (*anyārthasamāropa*), and (3) those that require the "recollection of what has been [previously] experienced" (*anubhūtasmarāṇa*). Moreover, for Dharmakīrti, the third category is simply a way of pointing to cases that clearly illustrate why the first two must be conceptual (PV3.289). Thus, it is the first two categories that are especially relevant to the question of pseudo-perception.

To be specific, these first two types of cognition—those based on conventions and those that impute another object—can occur so quickly after a moment of sensory perception that it can appear that they are actually part of the sensory process (PV3.290). In brief, both of these cognitions operate as conceptual judgments that follow upon what must be, in Dharmakīrti's view, an initial, *non-conceptual* presentation of sensory content represented as a "phenomenal form of the object" (*grāhyākāra*).¹⁶ Thus, when, for example, one sees a water jug (a stock example of an object), the cognition that one is seeing a "jug" is not actually part of perception *per se*; rather, it is a judgment occurring subsequent to the aforementioned non-conceptual presentation of phenomenal content. Dharmakīrti notes that other philosophers maintain that such perceptual judgments do count as perception,¹⁷ and according to him it is precisely for this reason that Dignāga raises these cases (PV3.289).

To explore this issue further, we need to have some account of those forms of conceptuality—those based on conventions and those that impute another object—that are actual candidates for being falsely construed as part of the perceptual process. Alas, coming to a truly clear account of these categories is no simple task, for they cause problems for Dharmakīrti's commentators. One issue is that they must somehow be mapped back to Dignāga's own categories, and the other is that the latter category ("imputational") ends up being entirely dependent on the former ("convention-based"). Fortunately, these commentarial details need not concern us in this context. Instead, we can simply explore what the categories tell us about the (pseudo-)perception of a "jug."

The earliest commentator, Devendrabuddhi, launches into an account of these two primary conceptual categories at the very outset of Dharmakīrti's

discussion of pseudo-perception (PV3.288).¹⁸ Taking up the typical example of a “jug,” Devendrabuddhi says:

First of all, with respect to a jug, in regard to the accomplishment of a single effect such as holding water, [property-particulars] such as form are different from things other than them that do not possess that effect; being different from those other things, [those property-particulars are thus] nondifferent. People (*jig rten = loka*) apply the word [“jug”] in that case for the purpose of connecting that collection of [particulars] such as form all at once to their own effect [of holding water, etc.]. Later, on the basis of that linguistic convention (*saṃketa*), the concept of a “jug” operates through superimposing onto [form and so on] that are also different from other things [that do not hold water, etc.] a unity of being a jug and so on.¹⁹

Here, Devendrabuddhi draws upon the *apoha* theory to explain how the conceptualization of a perceived “jug” is operating. Additionally, he seems to understand the “convention-based” cognition as an instance of first applying a learned concept to some sensory object. This is then followed by an “imputational” use where the concept “jug” is applied to bind the various constituents of a jug into a single whole that is the putative object of perception, even though the creation of that whole is actually the result of a conceptualization.

Here, Devendrabuddhi’s comments allude to Dharmakīrti’s own discussion of the *apoha* theory in a closely parallel context in his *Svavṛtti*. This is the context where, given one’s interest in a particular effect such as holding water, one uses a concept such as “jug” to put multiple particulars into a single, conceptually constructed object that is the “jug”:

[Those particulars], being all of such a kind (*evaṃjātīya*), are expressed by expressions that indicate a certain conglomeration (*saṃūha*), continuum (*santāna*), or state (*avasthā*). Those particulars that when conglomerated perform a single effect have no distinction from each other with regard to that effect. Therefore, it would be pointless to express any such distinction. For this reason, in order to refer to all of them at once, people (*loka*) apply one expression to them, such as “water-jug.” Those [i.e., the particulars that form a water-jug] are all equally different from their respective homologues and heterologues, but since they contribute to the accomplishment of that single purpose [such as containing water], they are distinguished from others that do not do so. Hence, they are cognized as non-distinct due to that nondifference.²⁰

After discussing various ways in which, for example, one can speak of the particulars that participate in the causal effects of what we call a “jug,” Dharmakīrti then makes an important remark about the “jug” itself:

Other [than those particulars] there does not exist here any substance [such as a jug] that has characteristics in the manner described by those expressions. It does not exist because one does not perceive that kind of substance.²¹

As Dharmakīrti shows, the concept of a “jug” in a sense puts the jug together, such that all of the various particulars that constitute it are now presented as the single thing that is the “jug,” even though in reality there is no “jug” there at all. In this vein, commenting on Dharmakīrti’s statement, the early commentator Śākyabuddhi makes a crucial observation: “Moreover, in the third chapter, [Dharmakīrti] will explain the way in which just infinitesimal particles are the object of perception without there being any whole [that is the ‘jug’].”²²

Returning now to the pseudo-perception that is the conceptualization of one’s perceptual content as a “jug,” these passages suggest that when we seem to see a jug we are already engaging in a conceptual act that enables us to construe certain elements of our visual field into a single thing, in this case the discreet object that is the jug. And this raises a crucial question: does this apply to all acts of object selection? In other words, is it the case that any time we have selected a distinct object within our visual field we have already engaged in a conceptualization, perhaps one that is based on some previously learned convention (*saṃketa*)?²³ With some hope of gleaning an answer to that question, let us turn to a series of tests for non-conceptual error proposed by Dharmakīrti.

Non-conceptual Pseudo-perception

The question of whether Dignāga actually endorsed a non-conceptual form of pseudo-perception is controversial,²⁴ and Dharmakīrti himself acknowledges that this interpretation must be defended (PV3.294). While he points to a passage (PS 1.15) in which Dignāga’s commentary does seem to endorse non-conceptual pseudo-perception, our goal here is just to assess Dharmakīrti’s views, and not their degree of fidelity to Dignāga’s.²⁵

For Dharmakīrti, the case of non-conceptual pseudo-perception is an “exception” (*apavāda*) to the general rule that a genuine perception is “devoid of conceptuality” (*kalpanāpodha*). In the cases described above, the pseudo-perception of a “jug,” for example, is due to the failure to recognize that the cognition of a “jug” is actually conceptual, even though it follows very quickly upon the presentation of the non-conceptual content that is construed as a jug. In contrast, in the case of non-conceptual pseudo-perception, the issue is not that some unnoticed conceptuality has crept into the moment of perception itself; rather, the problem is that cases such as seeing ocular floaters (*timira*) actually *are* non-conceptual, as is marked by the fact that they appear vividly in cognition (PV3.299). They might thus be construed as genuine cases of perception, but they are not.

In his discussion of pseudo-perception, Dharmakīrti does not lay out the reasons that explain why the perception of floaters is not a genuine perception. He need not do so because he has already discussed the issue at the start of the third chapter (PV3.7–9).²⁶ The upshot of these arguments

is that, with the exception of being regarded just as phenomenal events, the apparent “hairs” in such cognitions cannot be taken as the objects of “practical action” (*vyavahāra*) in the world. Thus, even though we see clearly something that we might call “hairs” when we have optical floaters, and even though the initial perceptual moment is non-conceptual, it is nevertheless not a genuine perception because genuine perceptions must be relevant to practical action.

Be that as it may, our main interest here is not with those arguments, but rather with the criteria that distinguish non-conceptual pseudo-perceptions from conceptual ones. As noted in our discussion of the internal distortion, and again to quote Cat Prueitt, the key feature of non-conceptual errors is that they are “given in the cognitive image itself” prior to the conceptual interpretation of that image in a perceptual judgment.²⁷ The condition that induces this distortion at the very outset of the perceptual process is a distortion (*upaplava*) or impairment (*upaghāta*) in some aspect of the embodied process of perceiving. The case of optical floaters is thus a clear example, in that they are an impairment to the visual faculty itself.

As Dharmakīrti unpacks this idea, he engages in a debate with an opponent who insists that even this case, as with the conceptual cases, is actually mental (*mānasa*) such that the error is a result of a faulty conceptualization. Responding to this opponent, Dharmakīrti lays out some criteria that enable us to distinguish non-conceptual cases from conceptual ones. He says:

[If non-conceptual errors such as the two-moon illusion were conceptual, then] like the error (*bhrānti*) of the snake and so on, there could be the cessation of that [two-moon illusion] even while there is still impairment of the faculty; and [the illusion] would not cease even when the impairment in the faculty had ceased // (PV3.297)

It could sometimes be placed in the minds of others with words [in the same way that the snake illusion can be induced by shouting “Snake!"]. It would require the recollection of what has been seen. And it would not appear very vividly // (PV3.298)

Whether one is asleep or awake, an awareness with a vivid appearance is non-conceptual. An [awareness that appears] otherwise [i.e., not vividly] is in both cases conceptual // (PV3.299)

In these verses, Dharmakīrti lays out three criteria that distinguish conceptual instances of pseudo-perception from non-conceptual ones. Here, for the first time in this passage, Dharmakīrti actually engages with the notion of an “erroneous cognition” (*bhrāntijñāna*), one of Dignāga’s three examples of pseudo-perception. For Dharmakīrti, such a cognition is a special case of an “imputational” cognition (*samāropa*). Recall that the imputation of “jug” to a set of particulars is warranted by the fact that those particulars are

interacting causally in such a way as to hold water. Thus, even though this type of imputation is problematic in that it may be incorrectly construed as a perception, it can still be trustworthy, in that it enables us to obtain our goal of holding water. In contrast, an erroneous cognition involves imputing a concept to stuff that does not actually have the capacity to perform the effects that we seek. In the verses above, Dharmakīrti uses the typical example of the rope-snake where, under the right circumstances involving low light and such, one may mistakenly think that a rope lying on the path is a snake.

There are three key features of this example. First, the erroneous conceptual judgment “That’s a snake!” can be eliminated by the correct conceptual judgment, “That’s a rope,” independently of any change in the non-conceptual content that precedes the judgment. In other words, this non-conceptual content can lead to both interpretations, although one interpretation is mistaken. Second, the erroneous cognition of a “snake” can actually be induced by being primed with the concept “snake” when, for example, someone nearby says, “Snake!” And third, the cognition of the “snake” is not as clear as an actual perceptual experience. In other words, the content of the erroneous cognition of a “snake” when we have actually just seen a rope, is in some sense vague or indistinct.

These three criteria likewise point to key features of a non-conceptual pseudo-perception. The first is that, while the non-conceptual error may be followed by an equally erroneous conceptual cognition (“Those are two moons”), one cannot eliminate the non-conceptual error by correcting the conceptualization (“Those are not two moons”). In other words, the phenomenal content of the perception persists, regardless of the conceptualization. Second, the non-conceptual error cannot be induced by being primed with a concept; I will not see two moons even if someone shouts “Two moons!” And third, the phenomenal content of a non-conceptual pseudo-perception is vivid and distinct. When I see two moons, I see them vividly.

These criteria thus give us a kind of checklist for distinguishing non-conceptual instances of pseudo-perception from conceptual ones:

1. *The “Not a snake” test.* The rope-snake error, which is conceptual, can be corrected just by reappraising the contents of visual perception. Likewise, can the error under examination (e.g., two moons appearing in my perception) be eliminated by reappraising the contents of perception (“Those are not two moons”), or does the erroneous phenomenal content persist despite reappraisal?

2. *The “Look, a snake!” test.* Can the error be induced by being primed with a concept?

3. *The “Brilliant moons” test.* Does the erroneous phenomenal content present itself in a vivid, distinct manner?

With these three criteria in place, let us now turn to a concrete example that may help us to understand the implications of this model.

The Kanizsa Triangle Contour Illusion (and the Pac-Man method)

Figure 1 contains one of the best-known examples of a contour illusion. Having looked at the image, you are invited to report on what you saw: specifically, did you see a triangle? It is highly likely that you did indeed see a triangle, although, strictly speaking, it is not there. This Kanizsa Triangle Contour Illusion (KTCI) arises due to properties of the human visual system that are involved in binding objects together in the visual field.²⁸ Since the triangle that you see is not actually there, this is clearly a case of erroneous

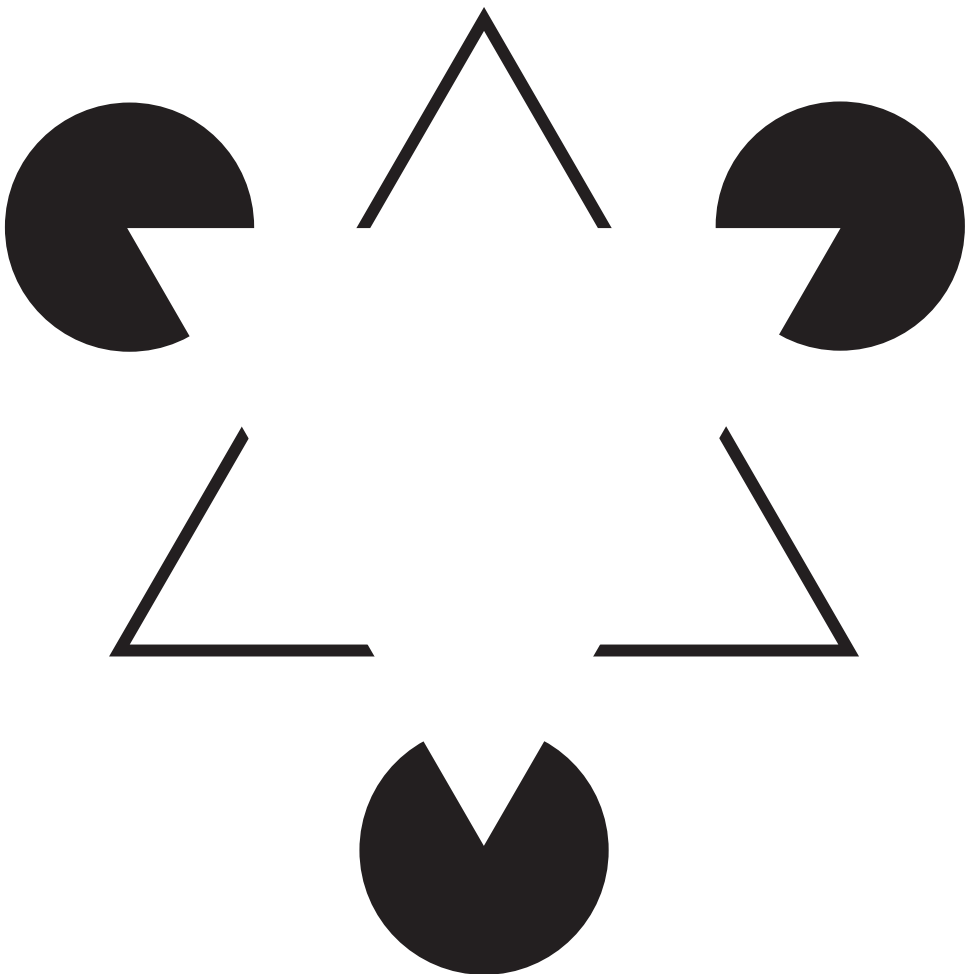


Fig. 1. Kanizsa Triangle Contour Illusion (Fibonacci, Own work, CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=1788215>).

cognition (*bhrāntijñāna*), at least on a Dharmakīrtian account. And in this context, an obvious question comes to mind: is this illusion a case of conceptual or non-conceptual error?

To answer this question, let us apply our tests in reverse order. First, is the illusory triangle vivid? There do not appear to be any reports in the scientific literature of any human subject who fails to see the triangle, but the degree of vividness with which the triangle is perceived can be variable.²⁹ The question of what precisely counts as “vivid” here is clearly a key issue, and although the context would seem to demand some unpacking of the criteria for vividness, neither Dharmakīrti nor his early commentators do so, perhaps because this point seemed obvious. That is, it would seem that vividness is easily exemplified by the distinction between the phenomenal presentation in a reliable visual perception that induces the conceptual cognition “I see a water jug” and the phenomenal presentation in the conceptual cognition involved in just thinking about a water jug. The point is presumably that, in the former case, the phenomenal presentation in visual awareness appears with noticeably greater phenomenal clarity than the water jug presented when I just think of a water jug. With that in mind, it is perhaps possible to answer whether the triangle appears vividly. As noted above, experimental subjects generally report that the triangle has a clear phenomenal presentation, and if it is more vivid than the triangle presented when one simply thinks “triangle,” then the KTCI triangle may be sufficiently sharp to count as “vivid.” Thus, according to the “brilliant moons” test, the KTCI would seem to be a case of non-conceptual pseudo-perception.

Moving on to the next test, the triangle likely appears to you without any need to be primed with the concept of a triangle. The thought “this is a triangle” may sharpen the phenomenal appearance of a triangle, and experimental evidence does suggest that, in at least some cases, conceptual priming can heighten or induce the perception of illusory contours.³⁰ Nevertheless, in the case of the KTCI at least, the illusion seems to appear without any deliberate conceptualization. Thus, according to the “Look, a snake!” test, the KTCI is once again non-conceptual.

Finally, consider the final test: can the illusion be stopped by applying a conceptual interpretation that counteracts the error? Here, drawing on previous research,³¹ I propose a brief phenomenological experiment that involves the early video-game character “Pac-Man.” As you will see, the three figures that are arranged to induce the illusory triangle closely resemble Pac-Man, a term that, amusingly, is now used in the scientific literature on the KTCI to describe these shapes. The technique here is very simple: the next time you gaze at the image, constantly repeat to yourself “Pac-Man” as you stare at the image. You will likely find it most effective to repeatedly say “Pac-Man” aloud while fixing your gaze intently on the image. If you are doing this in a public place, be prepared to receive some very odd looks.

The results of this whimsical “experiment” are thus far strictly anecdotal, and the processes that may be involved—such as redirecting your attention to only one part of the image—are open to multiple interpretations. Nevertheless, anecdotally it does appear that this technique often eliminates the triangle, at least for a few moments. For some people who have little familiarity with Pac-Man, it may be more helpful to repeat “pizza,” since the figures also resemble pizzas with a slice removed. In any case, if (as seems to be the case for most people) you are able to eliminate the KTCI with this method even for just a few moments, this would suggest that the KTCI does indeed respond to conceptual intervention. This might further suggest that, in terms of the “Not a snake” test, the KTCI is conceptual in Dharmakīrtian terms, which contradicts the other two tests. This conclusion, however, may not be entirely warranted, and to examine this issue further, let us conclude by examining the implications of this KTCI “experiment.”

Conclusion: Implications of the KTCI Inquiry

One of the intriguing features of the KTCI is that it may involve the kind of perceptual binding that, in the Dharmakīrtian account, is also provided by the conceptualization of a “jug” that allows one to select “jug” as a single object in one’s visual field. As discussed earlier, in the Dharmakīrtian model, a “jug”-sized object requires this type of conceptualization, which effectively binds together smaller units in the visual field into a single object. One interpretation of the KTCI is that it is related to these types of binding processes.³² Intriguingly, the capacity to perceive contour illusions such as the KTCI develops fairly early in humans (perhaps as early as two months), but this would still be compatible with the interpretation of the KTCI as conceptual, even if pre-linguistic.

A key outcome of all this is that, if the KTCI is conceptual in Dharmakīrtian terms, it would suggest that conceptuality extends all the way down to low-level, basic processes of object-selection that require some kind of binding or feature integration in the visual field. Two important implications are, first—to draw on a well-known distinction in the Abhidharma literature—the initial apprehension of discriminating a blue-patch in vision is not the same as conceptually categorizing that patch as “blue.”³³ The question here is whether that initial discrimination of the blue-patch involves some kind of binding process that, on at least one interpretation of the KTCI, would be conceptual for Dharmakīrti and his followers. At the same time, Dharmakīrtian theorists maintain that perception must be non-conceptual. If selecting a blue patch from within the overall visual field is conceptual—akin to the binding process involved in selecting a “jug”—then how does *non-conceptual* perception even manage to select objects?³⁴ A second implication is that, if the KTCI is conceptual, and if it involves a binding process that occurs even down to the level of a

color patch, then the Dharmakīrtian model would suggest that non-conceptual cognition occurs at such a low level that it would seem to be so subtle as to be inaccessible to conceptual cognition. And inasmuch as philosophy operates conceptually, it would also seem that philosophical analysis would be of only limited use in eliminating the internal distortion. Some other method would be required, perhaps one that alters the physiology of perception itself, as would be the case with some tantric practices.³⁵

Another possible interpretation of the KTCI is that, while the illusion is sufficiently strong to count as vivid (yes to “brilliant moons”), and while it is not just induced by conceptual priming (no to “Look, a snake!”), it is nevertheless susceptible to conceptual correction (yes to “Not a snake”). This would suggest that the KTCI has confounded the Dharmakīrtian distinction between the conceptual and the non-conceptual, since by two tests it should be an instance of a non-conceptual error, but according to “not a snake” it is a conceptual error because it can be corrected by a conceptual intervention, namely the Pac-Man “mantra.” The lesson here might be that the Dharmakīrtian model does not give us any insight into the kind of binding that is relevant to the KTCI.

There is, however, another interpretation of this outcome that has some intriguing implications for the role of philosophy in Dharmakīrti’s soteriology. Based on admittedly anecdotal data, it appears that no one can eliminate the illusory triangle simply by saying or thinking “Pac-Man” just once; instead, it seems necessary to constantly repeat “Pac-Man.” In that case, the KTCI is not truly akin to the rope-snake illusion, which is a conceptual error that in principle can be eliminated by a single iteration of the conceptual cognition “That’s a rope, not a snake.” Instead, like the Dharmakīrtian “internal distortion” that causes dualistic experience, the KTCI is actually a non-conceptual error, so a mere reappraisal will not eliminate it. Nevertheless, even though the KTCI is non-conceptual, it can be affected by a concept that is intently focused upon in constant repetition. Moreover, it seems that those who are unfamiliar with Pac-Man may find some other concept (such as “pizza”) to be more effective at counteracting the illusion, and this suggests that the counteracting concept must not only be repeated with intense focus; it must also be a highly stable and familiar concept.

All this begins strongly to resemble Dharmakīrti’s notion of “yogic perception” (*yogipratyakṣa*), a topic addressed in the section of the *Pramāṇavārttika* that immediately precedes the discussion of pseudo-perception.³⁶ While the precise interpretation of Dharmakīrti’s theory of yogic perception is controversial, it certainly involves repeated and intensive focus on concepts. And on this interpretation, philosophy has a crucially central role to play in the elimination of the internal distortion that is subject-object duality. Specifically, that goal can be achieved through the careful construction of the right kind of philosophical concepts that, having

been deeply studied, are repeatedly and intently applied so as to one day uproot that most fundamental, non-conceptual error. In short, intensive and repetitive focus on the familiar concept of “Pac-Man” may eliminate the KTCI, but a similar technique focused on the concept of “emptiness” (*śūnyatā*) will presumably do much more.

Appendix 1: From PVSV on PV1.98–99ab³⁷

(Note that this passage responds to the position that real universals provide a basis of similarity whereby one can be misled into cognitive error, and without real universals such error is not possible because real universals are necessary for misconstruing objects as similar.)

Conceptual errors do not depend just on external factors. Rather, they also come from internal confusion, as when a person with cataracts erroneously sees hairs.

[Objection]: “But if they are confused because they come from ignorance, then you would be forced to conclude that visual consciousness and such are also [erroneous].”

That is not the case because ignorance has conceptuality as a defining characteristic. That is, ignorance *is* conceptuality. Ignorance leads one astray by its very nature. But sensory consciousnesses are not conceptual in this way. Or [according to a higher level of analysis], this fault still does not apply [to sensory consciousnesses] because they are non-dual, although they appear as dual. I will explain this [in the third chapter]. Although all [cognitions that are contaminated by ignorance] are confused, [we still give] an account of some as reliable and some as spurious. This is done until foundational transformation (*āśrayaparāvṛtti*) [i.e., the eradication of ignorance] through agreement on the intended capacity for telic function.³⁸

*Śākyabuddhi's Comment on PVSV ad PV1.98–99ab*³⁹

Having explained this in terms of External Realism, he now will explain it in terms of Epistemic Idealism by beginning, “Or. . . .” The following is what is being said. Suppose that the meaning that the previous objector has given to the word ‘ignorance’ is allowed to stand. Even so, the fault of over-extension does not apply because we accept [the objector’s interpretation]. That is, there is no fault consisting in the [sensory] consciousnesses such as vision also being distorted; there is no fault because they are also confused. This is explained by the phrase, “because they are non-dual. . . .” The reflexive awareness of visual awareness is non-dual because there is no duality in it. That is to say, [the color] blue and so on are distinct (*vicchinna*) appearances that are apprehended simultaneously with consciousness. That blue is considered to be the object (*grāhya*), but it does not ultimately exist because it does not withstand the analysis of it as either one or many. In relation to that [ultimately unreal object],

there is subjectivity in the form of agency [in the act of perception], but that subjectivity is also unreal. However, the reflexive awareness [of that moment of consciousness] is not unreal because it is a perception.

Someone objects, “If reflexive awareness is non-dual, then since reflexive awareness is a perception, everyone would see ultimate reality.”

This is not the case because, even though it is a perception, there is no [subsequent] determination [of non-duality] due the occurrence of causes for distortion. Therefore, since they are devoid of the duality of subject and object in the manner described, the sensory consciousnesses such as vision are non-dual. But those non-dual consciousnesses appear to be dual; that is, they appear in the form of object and subject. Hence, they are also distorted. This will be explained in the third chapter.

Appendix 2: *Pramāṇasamuccaya* 1.7cd–8ab and *Pramāṇavārttika* 3.288–300 (Collaborative Translations by John Dunne and Alexander Yiannopoulos)

Pramāṇasamuccaya 1.7cd–8ab (Translation based on the *Dharmakīrtian Interpretation*)

Pseudo-perceptions are: [1] erroneous cognition, [2] cognition of the conventionally existent, [3] [cognitions with conceptualizations involving the recollection of previous experience, as in] the inferential and the inferred, and the remembered and the desired, along with [4] cognitions of optical floaters.

Pramāṇavārttika 3.288–300

There are four kinds of pseudo-perception. Three kinds are conceptual, and one is non-conceptual, arisen from impairments (*upaplava*) in the basis. // (288)

Two [types of conceptual error] are discussed in order to establish that they are not sensory (*akṣaja*), since mistakes have been observed [in other philosophers’ theories who maintain that they are sensory]. The mention of inference [which has already been] established [to be conceptual] is just for proving that the previous two [are also conceptual]. // (289)

Two [types of] conceptual cognition—the one based upon a convention (*saṃketa*) and the one that superimposes another object—sometimes cause the error [of seeming to be perceptual] because they immediately follow⁴⁰ a perception. // (290)

A cognition such as a recollection,⁴¹ being the conceptual cognition of a remote object, is dependent upon convention (*samaya*), and it does not apprehend a perceptual object. Likewise, without the recollection of what has been experienced, there is no cognition of “pots” and so on. And a cognition following that [recollection of what has been previously experienced]⁴² is excluded from consideration as a perception. // (291–292)

The fourth [type of error] is an exception [to the general rule that non-conceptual cognitions are perceptual]. Concerning this, he states that [non-conceptual error] arises from impairment (*upaghāta*) [to the faculties]. In this context, “optical floaters” (*timira*) is merely a metonym (*upalakṣaṇa*) for impairment. // (293)

Some say that even this [fourth type] is mental [i.e., conceptual]. But for them, this text [from the *Pramāṇasamuccaya*’s critique of the *Vādaśāstra*] is contradicted: “The sensory faculties are the cause of [erroneous] cognitions such as ‘blue’ or the double-moon [illusion].”⁴³ // (294)

[Opponent:] “[The sensory faculty is] the cause, indirectly.”

When the object of sensory cognition is being examined [in that passage from the *Pramāṇasamuccaya*], what kind of contextual relevance (*prastāva*) is there for the mental here? // (295)

Moreover, what [do you mean by] the sensory?

[Opponent:] “That which is invariably concomitant with the presence or absence of the sense faculties.”

This is common [to both pseudo- and actual perceptions].

[Opponent:] “[Pseudo-perception is] constituted by a warping (*vikriyā*) [in the sense faculty].”

This is exactly that [impairment which we endorse]! Why would it be refuted [by us]? // (296)

[If non-conceptual errors such as the two-moon illusion were conceptual, then] like the error (*bhrānti*) of the snake and so on, there could be the cessation of that [two-moon illusion] even while there is still impairment of the faculty; and [the illusion] would not cease even when the impairment in the faculty had ceased. // (297)

[Illusions such as the double-moon also] would sometimes be placed in the minds of others with words [in the same way that the snake illusion can be induced by shouting “Snake!”]. It would require the recollection of what has been seen. And it would not appear very vividly. // (298)

Whether one is asleep or awake, an awareness with a vivid appearance is non-conceptual. An [awareness that appears] otherwise [i.e., not vividly] is in both states conceptual. // (299)

Therefore, the instrumentality (*prāmāṇya*) of that [non-conceptual error] is denied, even though it is non-conceptual, because it is misleading (*viśamvādāt*). For this reason, pseudo-perception is said to be of two kinds [namely conceptual and non-conceptual]. // (300)

Notes

Abbreviations are used in the text and Notes as follows:

- PS *Pramāṇasamuccaya*. See [Dignāga . . . 2005](#).
PV1 *Pramāṇavārttika*, ch. 1. See [Dharmakīrti . . . 1960](#).
PV2 *Pramāṇavārttika*, ch. 2. See [Dharmakīrti . . . 1938](#).
PV3 *Pramāṇavārttika*, ch. 3. See [Tosaki . . . 1979](#).
PVP *Pramāṇavārttikapañjikā*. See [Devendrabuddhi . . . 2002](#).
PVSV *Pramāṇavārttikasvopajñavṛtti*. See [Dharmakīrti . . . 1960](#).
PVṬ *Pramāṇavārttikaṭīkā*. See [Śākyabuddhi . . . 2002](#).

- 1 – The term “Dharmakīrtian” here refers to the interpretation of Dharmakīrti’s works that begins with the commentator Devendrabuddhi (seventh to eighth centuries C.E.) and passes to Śākyabuddhi and Jinendrabuddhi; others in this lineage include Śāntarakṣita and Kamalaśīla.
- 2 – For a review, see [Quinlan](#), “Visual Feature Integration Theory.”
- 3 – As Ching Keng has pointed out (“What Is Svabhāva-Vikalpa and with Which Consciousness(es) Is It Associated?” pp. 92–93), even the translation of *vikalpa* as a “concept” or “conceptuality” becomes contentious if it is required at such low-level aspects of the perceptual process. Along these lines, Keng proposes (pp. 90–93) that, for Yogācāra thinkers, low-level perceptual processes such as figure/ground distinctions are indeed *vikalpa*, but they are relegated to mental consciousness. Yet, depending on the interpretation of non-conceptual error discussed below, this proposal, too, may come into question. Scholarly discussions of Dharmakīrti’s notion of perception as non-conceptual generally focus on conceptuality as involving linguistic or proto-linguistic features. See, e.g., [Dunne](#), *Foundations of Dharmakīrti’s Philosophy*, and [Coseru](#), *Perceiving Reality*.
- 4 – Vincent Eltschinger has explored this in detail. See [Eltschinger](#), “Études Sur La Philosophie Religieuse de Dharmakīrti (II): L’āśrayaparāvṛtti”; [Eltschinger](#), *Self, No-Self, and Salvation*; [Eltschinger](#), “Ignorance, Epistemology and Soteriology (I).”
- 5 – The translation in Appendix 1 includes Śākyabuddhi’s commentary. For a translation into French of most of the same material, see [Eltschinger](#), “Études Sur La Philosophie Religieuse de Dharmakīrti (II),” pp. 158–159. For a discussion, see [Dunne](#), “Thoughtless Buddha, Passionate Buddha.” For the notion of “levels of analysis” in Dharmakīrti, see [Dreyfus](#), *Recognizing Reality*; [Dunne](#), *Foundations of Dharmakīrti’s Philosophy*; [McClintock](#), *Omniscience and the Rhetoric of Reason*;

Kellner, "Dharmakīrti's Criticism of External Realism and the Sliding Scale of Analysis."

- 6 – The particle *eva* here functions as *ayogavyavaccheda*, which cannot be easily rendered.
- 7 – Eltschinger, *Self, No-Self, and Salvation*.
- 8 – See PV3.213. For a complete translation of the relevant passage with commentary, see Dunne, *Foundations of Dharmakīrti's Philosophy*, pp. 396 ff. Some portions are also translated into French in Eltschinger, "Études Sur La Philosophie Religieuse de Dharmakīrti (II)."
- 9 – PV3.353. See also the French translation of this block of verses (PV3.354–357) in Eltschinger, "Études Sur La Philosophie Religieuse de Dharmakīrti (II)," pp. 167–168.
- 10 – PV3.356. Devendrabuddhi ("Tshad ma rnam 'grel kyi 'grel pa," 547) remarks that this structure is presented "in terms of the way [cognition] appears, but not in ultimate terms" (*ji ltar snang ba bzhin du yin gyi don dam par ni ma yin no*).
- 11 – PV3.354, as translated by Prueitt in "Shifting Concepts," p. 31.
- 12 – Ibid.
- 13 – PV3.360–361ab; see also Prueitt, "Shifting Concepts," pp. 31–32.
- 14 – PV3.361cd–PV3.362. Cf. Prueitt, "Shifting Concepts."
- 15 – Although a complete translation of this section does not appear to be available in the English-language academic literature, other relevant work on this section includes Franco, "Once Again on Dharmakīrti's Deviation from Dignāga on 'Pratyakṣābhāsa'"; Eltschinger, "Ignorance, Epistemology and Soteriology (I)"; Coseru, *Perceiving Reality*; Prueitt, "Shifting Concepts."
- 16 – See Dunne, *Foundations of Dharmakīrti's Philosophy*; Dunne, "Key Features of Dharmakīrti's Apoha Theory."
- 17 – This issue especially emerges in the context of PV2.5d–6, and it is central to the notion that a *pramāṇa* must exhibit novelty (i.e., *ajñātārthaprakāśa*). For a discussion and references to other work, see Dunne, *Foundations of Dharmakīrti's Philosophy*, pp. 298 ff.
- 18 – For a related discussion of this verse and its context, see Eltschinger, "Ignorance, Epistemology and Soteriology (I)," pp. 53–54.
- 19 – PVP ad PV3.288 (PVP 511). For a similar but not identical passage in Sanskrit, see Jinendrabuddhi, *Jinendrabuddhi's Viśālāmalavatī Pramāṇasamuccayaṭīkā*, pp. 58–59.

- 20 – PVSV ad PV 1.137–142 (*The Prāmaṇavārttikam of Dharmakīrti: The First Chapter with the Autocommentary*. ed. Raniero Gnoli. [Roma: Istituto italiano per il medio ed estremo oriente, 1960], p. 68).
- 21 – PVSV ad PV 1.137–142 ([Dharmakīrti](#), *The Prāmaṇavārttikam of Dharmakīrti*, ed. Gnoli, p. 68).
- 22 – PVṬ 1339.
- 23 – This is precisely the problem that, in the Abhidharma literature, surrounds the term *svabhāva-vikalpa*. See [Keng](#), “What Is Svabhāva-Vikalpa and with Which Consciousness(es) Is It Associated?”
- 24 – See, e.g., [Franco](#), “Once Again on Dharmakīrti’s Deviation from Dignāga on ‘Pratyakṣābhāsa’”; [Coseru](#), *Perceiving Reality*; [Chu](#), “On Dignāga’s Theory of the Object of Cognition as Presented in PS(V) 1”; [Funayama](#), “Kamalaśīla’s Interpretation of ‘Non-Erroneous’ in the Definition of Direct Perception and Related Problems.”
- 25 – For an analysis of pseudo-perception that draws on the later interpretations of Śāntarakṣita and Kamalaśīla, see [Coseru](#), *Perceiving Reality*, pp. 182–191.
- 26 – For a translation of the relevant passage, see [Dunne](#), *Foundations of Dharmakīrti’s Philosophy*, pp. 394–395.
- 27 – [Prueitt](#), “Shifting Concepts,” p. 31.
- 28 – [Petry and Meyer](#), *The Perception of Illusory Contours*.
- 29 – [Ringach and Shapley](#), “Spatial and Temporal Properties of Illusory Contours and Amodal Boundary Completion.”
- 30 – [Rock](#), “A Problem-Solving Approach to Illusory Contours.”
- 31 – [Anken et al.](#), “Cue-Dependent Circuits for Illusory Contours in Humans.”
- 32 – [Murray and Herrmann](#), “Illusory Contours.”
- 33 – For an extended discussion, see [Dhammajoti](#), *Abhidharma Doctrines and Controversy on Perception*.
- 34 – This is the type of issue raised by Keng, who notes that the object-selection process (primarily the figure-ground distinction, in Keng’s view) in the Abhidharma literature can be satisfied by *svabhāva-vikalpa*, but for Yogācāra thinkers such as Dignāga and Dharmakīrti, that process must be relegated to a *vikalpa* process in mental consciousness. See [Keng](#), “What Is Svabhāva-Vikalpa and with Which Consciousness(es) Is It Associated?” pp. 88–93.
- 35 – See, e.g., [Wedemeyer](#), *Aryadeva’s Lamp that Integrates the Practices (Caryamelapakapradīpa)*.

- 36 – For the various interpretations of Dharmakīrti’s theory, see [Coseru](#), *Perceiving Reality*; [Franco](#), “Perception of Yogis”; [Eltschinger](#), “On the Career and Cognition of Yogins”; [Dunne](#), “Realizing the Unreal”; [Woo](#), “Dharmakīrti and His Commentators on Yogipratyakṣa.”
- 37 – In [Dharmakīrti](#), *The Prāmaṇavārttikam of Dharmakīrti*, ed. Gnoli (PVSV), pp. 50–51.
- 38 – Note that Śākyabuddhi clearly states that foundational transformation (*āśrayaparāvṛtti*) refers to the elimination of obscurations in the foundation consciousness (*ālayavijñāna*).
- 39 – Śākyabuddhi, “Tshad ma nram ‘grel kyi ‘grel bshad” (=Pramāṇavārttikaṭīkā), in *Bstan-’gyur (dpe bsdur-ma)*, ed. Krung go’i bod kyi shes rig ‘jug lte gnas kyi bka’bstan dpe sdur khang; trans. Subhutiśrī and Dge ba’i blo gros, 98–99 (tshad ma je-nye): 955–1802, 1–714 (Pe-cin: Kruṅ-go’i Bod-kyi Śes-rig dpe skrun khañ, 2002) (= PVṬ), 1229–1230.
- 40 – Reading *pratyakṣāśannavṛttivāt* with [Tosaki](#), *Bukkyō ninshikiron no kenkyū*, p. 386.
- 41 – Reading *smaraṇādikā* with [Tosaki](#), *Bukkyō ninshikiron no kenkyū*, p. 386.
- 42 – The term *anuyams* does not appear to be translated in the Tibetan of the verses, and it is not clear whether it was in either Devendrabuddhi’s or Śākyabuddhi’s commentary. Moreover, Manorathanandin appears to construe *tac ca* with *artham*, but *tat* must be neuter here, whereas *artha* is masculine. Since *anubhūtasmarāṇam* from the first line is neuter, it is the likely referent for *tat*.
- 43 – *nīladvicandrādidhiyāṃ hetur akṣāṇy apīty*. This is more a paraphrase than a direct citation of Dignāga’s comments on PS 1.15.

References

- Anken, Jacques, Jean-François Knebel, Sonia Crottaz-Herbette, Pawel J. Matusz, Jérémie Lefebvre, and Micah M. Murray. 2016. “Cue-Dependent Circuits for Illusory Contours in Humans.” *NeuroImage* 129 (April 1): 335–344. doi:10.1016/j.neuroimage.2016.01.052.
- Chu, Junjie. 2009. “On Dignāga’s Theory of the Object of Cognition as Presented in PS(V) 1.” *Journal of the International Association of Buddhist Studies* 29, no. 2 (January 21): 211–253.
- Coseru, Christian. 2012. *Perceiving Reality: Consciousness, Intentionality, and Cognition in Buddhist Philosophy*. New York: Oxford University Press.

- Devendrabuddhi. 2002. "Tshad ma rnam 'grel kyi 'grel pa" (= Pramāṇavārttikapañjikā). In *Bstan-'gyur (dpe bsdur-ma)*, edited by Krung go'i bod kyi shes rig 'jug lte gnas kyi bka' bstan dpe sdur khang, translated by Subhutiśrī and Dge ba'i blo gros, 98 (Tshad ma che), pp. 3–862. Pe-cin: Kruṅ-go'i Bod-kyi Śes-rig dpe skrun khañ.
- Dhammajoti, Kuala Lumpur. 2007. *Abhidharma Doctrines and Controversy on Perception*. 3rd rev. ed. HKU: CBS Publication Series; Hong Kong: Centre of Buddhist Studies, University of Hong Kong.
- Dharmakīrti. 1938. "Dharmakīrti's Pramāṇavārttika: With a Commentary by Manorathanandin." Edited by Rāhula Sāṅkṛtyāyana. *Journal of the Bihar and Orissa Research Society* 24–26 (Appendices). Patna: Bihar and Orissa Research Society.
- . 1960. *The Prāmaṇavārttikam of Dharmakīrti: The First Chapter with the Autocommentary*, edited by Raniero Gnoli. Roma: Istituto italiano per il medio ed estremo oriente.
- Dignāga. 2005. *Dignāga's Pramāṇasamuccaya, Chapter 1: A Hypothetical Reconstruction of the Sanskrit Text with the Help of the Two Tibetan Translations on the Basis of the Hitherto Known Sanskrit Fragments and the Linguistic Materials Gained from Jinendrabuddhi's Ṭīkā*. By Ernst Steinkellner. www.oeaw.ac.at/ias/Mat/dignaga_PS_1.pdf (April).
- Dreyfus, Georges. 1997. *Recognizing Reality: Dharmakīrti's Philosophy and Its Tibetan Interpretations*. Albany: State University of New York Press.
- Dunne, John D. 1996. "Thoughtless Buddha, Passionate Buddha." *Journal of the American Academy of Religion* 64, no. 3 (September): 525–556.
- . 2004. *Foundations of Dharmakīrti's Philosophy*. Studies in Indian and Tibetan Buddhism. Boston: Wisdom Publications.
- . 2006. "Realizing the Unreal: Dharmakīrti's Theory of Yogic Perception." *Journal of Indian Philosophy* 34, no. 6:497–519.
- . 2011. "Key Features of Dharmakīrti's Apoha Theory." In *Apoha: Buddhist Nominalism and Human Cognition*, edited by Mark Siderits, Tom Tillemans, and Arindam Chakrabarti, pp. 84–108. New York: Columbia University Press.
- Eltschinger, Vincent. 2005. "Études Sur La Philosophie Religieuse de Dharmakīrti (II): L'āśrayaparāvṛtti." *Études Asiatiques* 293, no. 1:151–211.
- . 2009a. "Ignorance, Epistemology and Soteriology (I)." *Journal of the International Association of Buddhist Studies* 32, nos. 1–2:39–83.
- . 2009b. "On the Career and Cognition of Yogins." In *Yogic Perception, Meditation and Altered States of Consciousness*, edited by Eli Franco, 64:169–214. Beiträge zur Kultur- und Geistesgeschichte Asiens.

Verlag der Österreichischen Akademie der Wissenschaften. <http://hw.oeaw.ac.at/6648-1>.

- . 2013. *Self, No-Self, and Salvation: Dharmakīrti's Critique of the Notions of Self and Person*. Sitzungsberichte (Österreichische Akademie Der Wissenschaften. Philosophisch-Historische Klasse), 837 Bd. Wien: Verlag der Österreichischen Akademie der Wissenschaften.
- Franco, Eli. 1986. "Once Again on Dharmakīrti's Deviation from Dignāga on 'Pratyakṣābhāsa.'" *Journal of Indian Philosophy* 14, no. 1:79–97.
- . 2011. "Perception of Yogis: Some Epistemological and Metaphysical Considerations," pp. 81–98. Denkschriften Der Phil.-Hist. Klasse. Wien: Verlag der Österreichischen Akademie der Wissenschaften.
- Funayama, Toru. 1999. "Kamalaśīla's Interpretation of 'Non-Erroneous' in the Definition of Direct Perception and Related Problems." In *Dharmakīrti's Thought and Its Impact on Indian and Tibetan Philosophy: Proceedings of the Third International Dharmakīrti Conference*, edited by Shoryu Katsura. Vienna: Verlag der Österreichischen Akademie der Wissenschaften.
- Jinendrabuddhi. 2005. *Jinendrabuddhi's Viśālāmalavatī Pramāṇasamuccayaṭīkā, Chapter 1—Part 1: Critical Edition*, edited by Ernst Steinkellner, Helmut Krasser, and Horst Lasic. Beijing: China Tibetology Research Center; Vienna: Austrian Academy of Sciences.
- Kellner, Birgit. 2005. "Dharmakīrti's Criticism of External Realism and the Sliding Scale of Analysis." In *Religion and Logic in Buddhist Philosophical Analysis: Proceedings of the Fourth International Dharmakīrti Conference, Vienna, August 23–27, 2005*, edited by Helmut Krasser, Horst Lasic, Eli Franco, and Birgit Kellner, pp. 291–298. Wien: Verlag der Österre.
- Keng, Ching. 2019. "What Is Svabhāva-Vikalpa and with Which Consciousness(es) Is It Associated?" *Journal of Indian Philosophy*, January 7. doi:10.1007/s10781-018-09377-8.
- McClintock, Sara L. 2010. *Omniscience and the Rhetoric of Reason: Śāntarakṣita and Kamalaśīla on Rationality, Argumentation, and Religious Authority*. Boston: Wisdom Publications.
- Murray, Micah M., and Christoph S. Herrmann. 2013. "Illusory Contours: A Window onto the Neurophysiology of Constructing Perception." *Trends in Cognitive Sciences* 17, no. 9 (September 1): 471–481. doi:10.1016/j.tics.2013.07.004.
- Petry, Susan, and Glenn E. Meyer, eds. 1987. *The Perception of Illusory Contours*. New York: Springer-Verlag. www.springer.com/us/book/9781461247609.

- Prueitt, Catherine. 2017. "Shifting Concepts: The Realignment of Dharmakīrti on Concepts and the Error of Subject/Object Duality in Pratyabhijñā Śaiva Thought." *Journal of Indian Philosophy* 45, no. 1 (March 1): 21–47. doi:10.1007/s10781-016-9297-8.
- Quinlan, Philip T. 2003. "Visual Feature Integration Theory: Past, Present, and Future." *Psychological Bulletin* 129, no. 5 (September): 643–673. doi:10.1037/0033-2909.129.5.643.
- Ringach, Dario L., and Robert Shapley. 1996. "Spatial and Temporal Properties of Illusory Contours and Amodal Boundary Completion." *Vision Research* 36, no. 19 (October 1): 3037–3050. doi:10.1016/0042-6989(96)00062-4.
- Rock, Irvin. 1987. "A Problem-Solving Approach to Illusory Contours." In *The Perception of Illusory Contours*, edited by Susan Petry and Glenn E. Meyer, pp. 62–70. New York: Springer-Verlag.
- Śākyabuddhi. 2002. "Tshad ma rnam 'grel kyi 'grel bshad" (= Pramāṇavārttikaṭīkā). In *Bstan-'gyur (dpe bsdur-ma)*, edited by Krung go'i bod kyi shes rig 'jug lte gnas kyi bka' bstan dpe sdur khang, translated by Subhutiśrī and Dge ba'i blo gros, 98–99 (tshad ma je-nye): 955–1802; 1–714. Pe-cin: Kruṅ-go'i Bod-kyi Śes-rig dpe skrun khaṅ.
- Tosaki Hiromasa 戸崎宏正. 1979. *Bukkyō ninshikiron no kenkyū: Hōshō cho "Puramāna Vārutika" no genryōron*. Jōkan 上仏教認識論の研究 : 法祚著 = プラマーナ・ヴァールティカ = の現量論. 上巻. Tōkyō: Daitō Shuppansha.
- Wedemeyer, Christian K. 2008. *Aryadeva's Lamp That Integrates the Practices (Caryamelapakapradipa): The Gradual Path of Vajrayana Buddhism According to the Esoteric Community Noble Tradition*. New York: American Institute of Buddhist Studies.
- Woo, Jeson. 2003. "Dharmakīrti and His Commentators on Yogipratyakṣa." *Journal of Indian Philosophy* 31, no. 4:439–448.