On the Very Idea of Valenced Perception (Penultimate draft, accepted, J. Phil)

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On the Very Idea of Valenced Perception

Abstract:

Tradition contrasts "cold," motivationally-inert, "standard" perception with "hot," motivationally-potent, emotion and affect. Against this backdrop, it has recently been argued that perceptual experiences have another fundamental phenomenal aspect, beyond their sensory aspects–perception in all sense-modalities is (at least often) Intrinsically valenced. Roughly, its phenomenal character is inherently pleasant or unpleasant, feeling good or bad to some degree. Yet, the revolutionary notion of Intrinsically Valenced Perception (IVP) requires elucidation and is fraught with theoretical difficulties. The paper aims to explicate and address some foundational questions regarding the very notion of IVP: What is *required* for perception to be intrinsically valenced? Specifically, if perception itself is valenced, what should be the relations between its valenced aspects and sensory aspects? The paper identifies the relevant notion of IVP by uncovering various principles that express constraints and desiderata that IVP must meet. It further offers a Determination-Dimension Model of the relations between sensory and valenced aspects that aims to resolve the previously identified theoretical difficulties.

Key Words:

Perception, Valence, Affect, Phenomenal Character, Pain.

Common philosophical wisdom identifies the phenomenal characters of perceptual experiences with their *sensory aspects*–aspects like the way it's like to see the blueish color of a coffee mug, smell the odor of a guava, or taste the bitterness of a pint of beer. Against this backdrop, it has recently been argued that perceptual experiences have another fundamental phenomenal aspect, over and above their sensory aspects–perceptual experiences are (at least often) *Intrinsically valenced*: roughly, what it's like to undergo them is inherently pleasant or unpleasant–it feels good or bad to some degree.[1] The beer may taste delicious or distasteful, the odor of the guava may be pleasing or displeasing, and, as recent scientific work (to be discussed below) suggests, even the visual experience of the coffee mug is standardly (if only slightly) agreeable or disagreeable. With regard to many experiences, pleasantness or unpleasantness seems to reside in–be part and parcel of–the perceptual experiences themselves.

By way of initial illustration, consider a really bad headache, or your favorite gustatory experience. Phenomenologically, it seems to be a characteristic of some perceptual experiences

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[1] See, for example, Hilla Jacobson, "Not Only a Messenger: Towards an Attitudinal-Representational Theory of Pain," *Philosophy and Phenomenological Research*, XCIX, 2 (2019): 382-408; Hilla Jacobson, "The Role of Valence in Perception: An ARTistic Treatment," *Philosophical Review*, CXXX, 4 (2021): 481-531; Matthew Fulkerson, "Emotional Perception," *Australasian Journal of Philosophy*, XCVIII, 1 (2020a): 16-30; Matthew Fulkerson, "Perception, Emotion, and the Interconnected Mind," *Journal of Consciousness Studies*, XXVII, 7-8 (2020b): 7-30; and Frederique de Vignemont, "Fifty Shades of Affective Colouring of Perception," *Australasian Journal of Philosophy*, CI, 1 (2023): 1-15.

that they inform us about ways things appear to be in distinctive ways that are particularity engaging–in manners that are appealing or unappealing. Often, when information is delivered perceptually, it does not leave us cold; rather, its registration is marked by our being positively or negatively affected. Relatedly, many experiences appear inherently motivational–at minimum, disposing us to approach or avoid their objects, without the mediation of further attitudes. Repeatedly sipping an exquisite wine, moving away from the intolerable squeak of a fire alarm, or moving closer to the edge of the terrace to get a better view of a magnificent scene, seem to be driven by the respective gustatory, auditory, and visual experiences. Even when not involving desires or intentions, these events are not mere reflexes (such as reflexive knee jerks). Rather, they seem to be actions (or "proto-actions"), which exemplifies the conjecture that the relevant perceptual experiences *themselves* have a motivational, reason-giving force. This reason-giving force, in turn, appears to be intimately related to the fact that those experiences are not "neutral" states, but rather involve "positive" and "negative" phenomenal aspects.

Thus, phenomenological observations and pre-theoretical intuitions, which yet require theoretical and empirical vindication, suggest that perceptual experiences have valenced aspects over and above their sensory aspects. According to this viewpoint, the sensible world, with its odors, tastes, colors and shapes, is not given to us in a "cold," evaluatively-neutral, motivationally-inert manner. Rather, our perceptual interactions with it are infused with valence. The sensible world is a "hot" world, involving both engaging and repellant aspects.

Yet, until recently, this viewpoint was rarely seriously considered, and even explicitly denied. With the exception of pains (and possibly some other bodily sensations), the "perceptual valences" of experiences have not been recognized–the phenomenal characters of perceptual experiences are (at least implicitly) *identified* with their sensory aspects. Moreover, "*cold*," motivationally-inert, "*standard*" *(non-nociceptive) perception* is often explicitly

contrasted with "*hot*," motivationally-potent, *emotion and affect*. Thus, emotion theorists (even those advancing "perceptual" accounts) state that emotions *differ* from sensory perceptions *inter alia* in that the former, *in contrast to the latter*, are standardly "positive" or "negative" and involve an inherent hedonic tone.[2] Within the classic literature on standard (visual, olfactory, auditory, etc.) perceptual experiences, attempts to account for their phenomenal character address only their sensory aspects. Yet such accounts are considered to be *exhaustive*.[3] In fact, even the extant stance toward pains[4] illustrates that valenced aspects are *not* considered intrinsic to *standard* perception. According to this approach, pains *are* a form of intrinsically valenced perception (specifically, interception), involving both sensory and affective aspects. However, due to their affective aspect, accounting for their phenomenal character is considered to present a *special* challenge. It requires *stepping beyond* – enriching[5] or modifying[6]–extant accounts of perceptual experiences. The prevalent stance

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[2] Julien Deonna and Fabrice Teroni, *An Introduction to the Philosophy of the Emotions* (Routledge, 2012); and Christine Tappolet, *Emotions, Values, and Agency* (Oxford University Press, 2016).

[3] For example, Fred Dretske, *Naturalizing the Mind* (MIT Press, 1995); and Alex Byrne, "Intentionalism Defended," *The Philosophical Review*, CX, 2 (2001): 199-240.

[4] For example, Brian Cutter and Michael Tye, "Tracking Representationalism and the Painfulness of Pain," *Philosophical Issues*, XXI (2011): 90-109; and David Bain, "Why Take Painkillers?" *Noûs*, LIII, 2 (2019): 462-490.

[5] For example, Cutter and Tye, "Tracking Representationalism and the Painfulness of Pain," *op. cit.*; and Bain, "Why Take Painkillers?" *op. cit*.

[6] Colin Klein, *What the Body Commands: The Imperative Theory of Pain* (MIT Press, 2015); and Jacobson, "Not Only a Messenger," *op. cit.*

toward pains, then, only reinforces the claim that with respect to standard perception the assumption of a perception/affect contrast prevails.

Parenthetically, I believe that one reason for ignoring or denying the valenced dimension of perception has to do with our tendency to focus on *visual* experiences, in which valenced aspects are phenomenologically least conspicuous (see below). But another, deeper reason, to be discussed at length in what follows, is that there are some serious (even if unacknowledged) obstacles regarding the very idea of *intrinsically* valenced perception. As a precursor, given the plausible assumption that valences are not sensory aspects, in what sense can they be deemed "perceptual" or, indeed, integral to given perceptual experiences? Furthermore, a key characteristic of the pleasant and unpleasant aspects associated with perceptual experiences is that they are *highly variable vis a vis* the sensory aspects of these experiences: while some subjects deeply enjoy the (sensory) taste of eggplants others find it abhorrent, and the same may even be true of the same subject on different occasions.[7] This variability, in turn, seems to imply that the relevant pleasant/unpleasant aspects are independent of the sensory phenomenal aspects of perceptual experiences and are mere external addenda that are inessential to the individuation of these experiences. If the same sensory taste can be both tasty and unpalatable, how can the tastiness be intrinsic and essential to the way the eggplant tastes?

Now, the past few years have seen growing interest in valenced perception. Specifically, there are initial attempts to develop specific (typically, reductive) accounts of the putative intrinsic valenced aspects of perception. It has been suggested that valenced aspects can be accounted for by extending the prevalent representational theory of the phenomenal

[7] Jacobson, "The Role of Valence in Perception," *op. cit.*; and Jacobson, "Not Only a Messenger," *op. cit.*

character of the sensory aspects of experiences ("Evaluativism"), or, alternatively, that we should opt for an attitudinal, non-cognitivist, approach regarding those aspects (see note 1). However, the importance of such attempts notwithstanding, it seems that friends of valenced or affective perception, who attempt to vindicate its existence and account for it, should also address a prior question–namely, what precisely is the purported explanandum of their theories. As already mentioned, the very notion that "ordinary" perception itself *is* valenced–that it has valenced aspects over and above sensory aspects–is a substantive, revolutionary claim, and as such requires elucidation. Thus, my concern in this paper is with the question of what intrinsically valenced perception is, or more accurately (since it is not my central concern to argue that perception *is* valenced) on what it could be. What is *required* for perception to be intrinsically valenced? What follows will hopefully make some headway toward clarifying the notion of intrinsically valenced perception (IVP), spelling out the obstacles surrounding this notion, and overcoming these obstacles.

The plan for the rest of the paper is as follows. In section I, I will briefly motivate the claim that there are tight, interesting, relations between perceptual experiences and valence, which provide *initial* reasons for the notion that perception *is* (at least often) intrinsically valenced within and across sense-modalities. My main goal, though, will not be to vindicate this claim (a task that, I have argued (reference removed for review purposes), ultimately hinges also on empirical evidence), but rather to elucidate it and defend its coherence. This task will be undertaken in section II, which focuses on the initial issue of *how the notion of valenced perception is to be understood*. If perception itself is valenced–if the phenomenal valenced aspects of perceptual experiences are to be "intrinsic" to them–what should be the relations between those valenced aspects and sensory aspects? I will unpack the notion of IVP by identifying various principles expressing constraints and desiderata that IVP must meet. It will turn out that some of these principles are, *prima facie*, in tension with one another,

appearing to pull in opposite directions. In section III, I will further elucidate and defend the principle that best captures IVP and show it to be compatible with the other principles, by offering a more specific model of the relations between sensory and valenced aspects. This model – the '*Valence as Determination-Dimension' Model* – will also pave the way to the idea that there is a sense in which *all* perceptual experiences are valenced.

I. MOTIVATING VALENCED PERCEPTION

An appropriate starting point for motivating the claim that perception itself is (at least sometimes) valenced is the case of pain. I endorse the by now prevalent assumption that pain is (or involves) a *perceptual* (specifically, interoceptive) state, in that it represents the obtaining of a certain bodily condition or disturbance.[8] Given this assumption, standard pain is surely the best candidate for being an intrinsically valenced perception: phenomenologically, there is a negative, unpleasant aspect–"painfulness," that seems to be of the very essence of pain. As Rachels writes, introspectively, "when you twist your ankle or jam your finger, the experience itself seems to hurt; the unpleasantness seems to be right there in it…"[9] Similarly, in explaining

[8] See, for example, David Bain, "Evaluativist accounts of pain's unpleasantness," in Jennifer Corns, ed., *The Routledge Handbook of Philosophy of Pain* (Routledge, 2017); Cutter and Tye, "Tracking Representationalism and the Painfulness of Pain," *op. cit*.; and Jacobson, "Not Only a Messenger," *op. cit.* .

[9] Stuart Rachels, "Is Unpleasantness Intrinsic to Unpleasant Experiences?" *Philosophical Studies: An international Journal for Philosophy in the Analytic Tradition*, XCIX, 2 (2000): 187-210, p. 196.

why pain cannot be exhausted by a representation of a bodily condition, Cutter and Tye stress that "if tissue damage is all that pain experience represents, then it's hard to explain one salient aspect of its phenomenal character… the [felt] physiological disturbance … also feels bad."[10]

In accordance with such observations, the prevalent philosophical and scientific view of pain incorporates the idea that (standard) pain itself is (or involves) valenced perception.[11] This view runs as follows. First, pains are (or involve) perceptual (interoceptive) states that have *sensory aspects:* they represent locations, volumes, intensities, etc. Second, at least typically, pains have (an intrinsic) *valenced aspect*, called '*primary affect.*'[12] Pains *feel bad–*

[10] Cutter and Tye, "Tracking Representationalism and the Painfulness of Pain," *op. cit*., p. 3.

[11] The scientific conception is based on, for example, the discovery of distinct yet interconnected neural pathways, the fact that pain is variably affected by the intensity of the nociceptive stimulus and by psychological factors, and the discovery of several clinical "pain dissociations" (see, for example, Pierre Rainville, Gary H. Duncan, Donald D. Price, Benoıt Carrier, and M. Catherine Bushnell, "Pain Affect Encoded in Human Anterior Cingulate but not Somatosensory Cortex," *Science*, CCLXXVII, 5328 (1997): 968-971; and Donald D Price, "Psychological and Neural Mechanisms of the Affective Dimension of Pain," *Science*, CCLXXXVIII, 5472 (2000): 1769-1772.)

[12] Regarding the qualification 'at least typically': according to the standard interpretation of pain asymbolia, the pains of pain asymbolics are not unpleasant (see, Nikola Grahek, *Feeling Pain and Being in Pain* (MIT Press, 2011); and David Bain, "Pains That Don't Hurt," *Australasian Journal of Philosophy*, XCII, 2 (2014): 305-320). It might be wondered how can unpleasantness be intrinsic to pains (or to any other perceptual experience, for that matter) if it can vary independently of a pain's (or a perceptual experience's) sensory aspects and can even be entirely absent in some cases. Pain, that is, is also susceptible to the tension

they involve an unpleasant phenomenal aspect ('painfulness'). That aspect is inherently motivational–"directly" (without the mediation of further attitudes) leading to, and rationalizing, avoidance behavior. And third, pains often involve an aspect called '*secondary affect*.' Typically, there is a set of reactive attitudes and affective states that *accompany* pains–certain beliefs, desires, and negative emotions and moods. The important point for present purposes is the identification of the second aspect, and the prevalent claim that that aspect–primary affect, in contrast to secondary affect–is constitutive of the experience of (standard) pain itself.

What about perceptual experiences *other than pains*? I will briefly mention two considerations for generalizing the claim regarding valenced perception. The first argument proceeds from relevant similarities between pains and perceptual experiences in various sense-modalities. Its first premise is that, in accordance with the prevalent conception, standard pain *is* valenced. Its second premise is that some perceptual experiences other than pain are phenomenologically and motivationally similar to pains. Regarding the second premise, consider the similarities, between pain and, for example, horrible gustatory or olfactory experiences. As to the phenomenological level, initially, the prime motivation for taking pains to be intrinsically valenced is that they feel bad. Similarly, drinking pure vinegar or smelling pungent durian standardly seem to feel bad–in fact, such experiences can feel much worse than many pains. As to the motivational level, your pain (non-mediately) provides you with a (defeasible) reason to withdraw your hand from the scalding water (thus, alleviating the noxious bodily condition) or take a painkiller (thus, eliminating the experience of pain). Similarly, an awful olfactory experience (non-mediately) gives you a reason to

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between valence being intrinsic to perceptual experiences and what I term 'Valence-Variability,' though less conspicuously. In what follows, I address this challenge.

move away from the source of the stench or plug your nose. Thus, given that pains are valenced perceptions (premise 1), and given the relevant similarities (premise 2), there are reasons for thinking that those other perceptual experiences are intrinsically valenced as well.

The second consideration for generalization appeals to cognitive science and neuroscience. By now, there is some *direct* empirical evidence for intimate relations between perception and valence in other ("non-pain") cases. I will briefly mention such evidence regarding the *visual case*, because, as far as valence is concerned, this case is the one least supported by phenomenological observations. Indeed, it is arguable that, phenomenologically, visual experiences of most "everyday objects" (for example, coffee mugs, chairs) appear neutral, and even with respect to visual experiences of seemingly affectively-loaded objects (for example, flower bouquets and bloody weapons) things are unclear. The claim that the affect or valence associated with such objects is intrinsic to the experiences (rather than merely accompanies, or is caused by, them) conspicuously requires moving beyond introspective evidence. Visual experiences, then, pose the greatest challenge to the intrinsicality claim, and the weight of empirical evidence is greater when what is at stake are such experiences.

Fortunately, there is evidence that even in the case of vision, experience standardly involves an affective aspect. The picture portrayed by the recent "Visual Micro-Valence" literature is as follows:

> While grabbing a coffee mug from the cupboard, a phone call diverts your attention and, in the split second before answering the call, you select a seemingly random mug from your collection. What factors guide you to choose [it]? … we answer by proposing that the majority of physical objects around us possess a subtle valence – a "micro-valence" – which ranges in magnitude but is always present... Much in the same way that we automatically perceive the shape, size, or color of objects, we

> cannot help but perceive [valence]... Valence is not a label applied after the fact to perceptual entities, but rather is an *intrinsic* element of visual perception…[13]

On this picture, then, visual experiences, *quite generally*, involve motivationally-potent valences; but these are typically *fine-grained "micro"*-valences.[14]

Support for this picture is provided in two stages. First, it is shown that visual experiences of everyday objects are *associated* with valence.[15] This hypothesis is supported by both *implicit* measures–for example, participants are asked to *select* seen objects that they would most like to keep–and *explicit* measures–for example, participants are asked to rank order seen objects along the dimension of *pleasantness/unpleasantness*. Strong correlations have been found between the two measures. Second, behavioral and neuroscientific support is provided for an *especially close link* between the associated valences and perceptual experiences. Behaviorally, there is evidence for the claim that valence processing exhibits effects that are known to be *perceptual*, and, in particular, that valence influences object

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[13] Sophie Lebrecht, Moshe Bar, Lisa F. Barrett, and Michael J. Tarr, "Micro-Valences: Perceiving Affective Valence in Everyday Objects," *Frontiers in Psychology*, III (2012): 107.

[14] In the scientific literature, 'valence' is sometimes applied to both experiences and their objects (or represented properties). Scientific talk of 'valenced objects' (or 'valenced properties') should be understood as an abbreviation of 'objects (or properties) that, in a particular context, are associated with experiences with a particular valence.'

[15] See, for example, Sophie Lebrecht, "Micro-Valences: Affective Valence in 'Neutral' Everyday Objects," *Doctoral Dissertation* (Brown University, 2012). Retrieved from https://pdfs.semanticscholar.org/cf07/df6d3ca6eece0df484d72e1b33020ecc8538.pdf; and Sophie Lebrecht and Michael Tarr, "Defining an Object's Micro-Valence Through Implicit Measures," *Journal of Vision*, X, 7 (2010): 966-966.

recognition. For example, in tasks of determining whether seen objects are the same or different response-times are influenced by whether the valences of each pair of objects are congruent or incongruent.[16] As far as brain-based evidence is concerned, there are interesting findings pertaining to the ”early” time(s) and relatively “lower” location(s) in which valence is neuronally encoded.[17] It has been shown that valence is rapidly encoded (as early as 80 to 130 ms after stimulus onset) in a specific region of the prefrontal cortex–the orbitofrontal cortex (OFC), that plays a crucial role in forming predictions that support object perception. Valence is consequently encoded in lower areas in the lateral occipital cortex (LOC) that are part of the “core” network for visual processing, and to which the former areas project. In particular, the encoding of valence in the OFC, provides crucial evidence, as it is taken to be part of the *first* of two stages hypothesized to be involved in object recognition–a fast, gist-based stage, which is then followed by a second, slower stage of refinement. The second stage is assumed to be facilitated by the encoding of valence in the first stage. Thus, cumulatively, the described findings support the researchers' claim that “valence is integral to seeing.”[18]

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[16] Lebrecht, “Micro-Valences,” *op. cit.*

[17] See, for example, Lebrecht, “Micro-Valences,” *op. cit.*; and Lisa Feldman Barrett and Moshe Bar, “See it with Feeling: Affective Predictions During Object Perception,” *Philosophical Transactions of the Royal Society B: Biological Sciences*, CCCLXIV, 1521 (2009): 1325-1334.

[18] Further relevant evidence suggests that due to connections between brain areas that encode for affect (for example, the amygdala) and sensory areas (including “early” visual ones, as low as V1), “core affect” *modulates sensory processes*, resulting in, for example, the sharpening and increased salience of sensory encoding of stimuli, and even affecting which

II. INTRINSICALLY VALENCED PERCEPTION

Yet, in what sense can valence be intrinsic or integral to perceptual experiences? What is required for perception to be valenced? I now turn to this central question.

Some perceptual experiences are surely closely *associated* with valence: there is a sense in which they are "positive" or "negative," and connected with specific pleasant/unpleasant "feels" and action-tendencies. But in order for the claim that some

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specific sensory features (such as the degree of perceived contrast) the stimuli is perceptually represented as having (Seth Duncan and Lisa Feldman Barrett, "Affect is a Form of Cognition: A Neurobiological Analysis," *Cognition and Emotion*, XXI, 6 (2007): 1184-1211; Luiz Pessoa, "On the Relationship Between Emotion and Cognition," *Nature Reviews Neuroscience*, IX, 2 (2008): 148-158; Antoine Barbot and Marisa Carrasco, "Emotion and Anxiety Potentiate the Way Attention Alters Visual Appearance," *Scientific Reports*, VIII, 1 (2018): 1-10). The visual system, then, is sensitive to "early appraisals" associated with valences, thus making it "*prima facie* plausible that visual experiences *can be* affectively charged" (de Vignemont, "Fifty Shades of Affective Colouring of Perception," *op. cit.*, p. 4, emphasis added). It should be noted, though, that the idea that perception is intrinsically valenced *also* requires that the influence of affective factors on the visual experience will not be restricted to their influence on sensory encoding. It requires that the perceptual experience involves both sensory and valenced aspects that are somehow (in a manner yet to be characterized) phenomenally integrated, so that this experience itself would be phenomenally "positive"/"negative."

perceptual experiences are valenced to be interesting and non-trivial it should be stronger. I will term the non-trivial notion of valenced perception I am after *Intrinsically Valenced Perception* ("IVP"), as 'intrinsic valence' is commonly used in the paradigmatic case of pain and reflects some pre-theoretical intuitions. I will strive to *identify* a sense in which valence can be said to be intrinsic to perception.

To get a better grip on what I mean by more and less interesting notions of valence associated with perception, consider a few cases that would be described by subjects as *involving unpleasant experiences*. (To clarify, I am not arguing or assuming that any of these cases exhibits IVP; I merely mean to suggest that they are rather plausible *candidates* for IVP. This is enough for thinking that *if* there are cases of IVP, then the consideration of these cases and their introspectively available phenomenological features provides guidance for how we should understand IVP.)

First, and most conspicuously, consider a nociceptive case:

(a) Mary, an enthusiastic jogger, stumbles and cracks her knee.

She "feels bad" in more than one respect. Less interestingly in the present context, she is stricken by an immediate pang of fear ("secondary affect") and is deeply annoyed, as she realizes she will have to break her jogging routine. These negative feelings, however, merely accompany what is the best candidate for being an intrinsically valenced perceptual (interoceptive) state–namely, an experience of an acute pain. It certainly seems that the pain in itself is, well, *painful* and feels really bad ("primary affect").

Next, consider a gustatory case:

b) Dinna, a diabetic who strongly dislikes guava, takes a bite of a sandwich, which turns out to contain some guava jam.

Once again, the case plausibly involves several different valenced (unpleasant) states or aspects. Being acutely aware of her diabetes, the sweet taste immediately causes Dinna to

experience fear. Also, her dislike of the taste of guava is so strong that she experiences strong nausea. Lastly and importantly, she would say the guava jam *tastes* really bad.

Finally, consider Fulkerson's description of a visual case:[19]

c) Nadia, who suffers from severe arachnophobia, opens a small box and sees a large and very menacing tarantula.

As Fulkerson says, she would describe the experience of seeing the spider as highly unpleasant. This case, he argues, plausibly involves two different valenced states that are related to Nadia's visual experience in different ways:

> The spider causes an extreme fear reaction in Nadia. This is a paradigm full-blown emotional episode. Nadia's arachnophobia is strong enough that merely being told that there is a spider would elicit the same fear. In addition, for Nadia the visual appearance of the spider is distinctly and especially unpleasant. In her case, it really does *look* unpleasant. Her *visual* experience is affectively and motivationally valenced.[20]

Prima facie, then, in each of these examples, we can identify an "interesting case" in which *the perceptual experience itself* (not just something in its vicinity) *seems to feel bad*: alongside her fear, the spider *looks* unpleasant to Nadia; Dinna is not only worried and nauseated, rather the guava jam *tastes* unpleasant to her; and Mary's being anxious and upset accompanies what really matters in the present context, namely, the condition in the knee *nociceptively feeling* unpleasant to her. Rather than being self-standing affective or emotional episodes that depend on the perceptual experiences only etiologically and that (as in the fear example) are sometimes directed toward the intentional objects of the experiences, it appears

[19] Fulkerson, "Emotional Perception," *op. cit.*, p. 18.

[20] *Ibid.*

that the relevant valenced aspects are aspects of the perceptual experiences themselves. Moreover, in the interesting cases, the sensory aspects and the valenced aspects appear to be bound in a strong sense–they appear *fused together*.

Note that these claims are mere intuitions or starting points in the quest for a coherent notion of IVP. Next, I aim to identify some *phenomenological, theoretical, and empirical desiderata and constraints* that should inform the explication of this notion.

> First, at the most general level, IVP should answer to the following principle:
>
> *(P.1) Individuation.* Valenced aspects, as aspects that are (in a sense yet to be articulated) *intrinsic* to the phenomenal characters of particular perceptual experiences, are essential to the individuation of these experiences *qua* perceptual experiences.

As the cases illustrate, the claim that the valenced element associated with a perceptual experience is an experience in its own right, which exists alongside that perceptual experience, is insufficient for IVP. A complex state consisting of certain sensory aspects and a distinct affective component (for example, fear, nausea, or annoyance) is not intrinsically valenced. Of course, it is possible to stipulate that such a complex state is also a single experience, just as we can stipulate that co-occurring experiences in different sense modalities form a single complex experience. In each case, we can speak of the complex state's "overall phenomenology" (notwithstanding the fact that each component can be individuated separately), yet this would leave the claim that each of the component experiences is intrinsic to this complex true but trivial.

In fact, there seems to be a real challenge here. For, consider: all can agree that, for example, in the visual case, there is an experience with a certain sensory profile consisting of the representations of colors, shapes, etc., and some associated valence. But *is there a*

substantive question as to whether the right description of these cases is that they involve a *single visual experience* or that they involve a *properly visual experience plus a non-visual, affective, component*? I will try to show that there is a notion of IVP that does provide substance to this question.

Next, as is plausibly required by *Individuation* and as the cases suggest, for perception to be (non-stipulatively) intrinsically valenced it must involve a tight relation between sensory aspects and valenced aspects:[21]

> *(P.2) Valenced Aspects are Modality-Specific.* Valenced aspects are strongly bound with sensory aspects of experiences of given sense-modalities ('sensory appearances') in that they characterize (or "qualify") how particular things (objects or instanced properties) look, taste, (nociceptively) feel, etc.

As we saw, Mary's painful experience, unlike her anxiety and annoyance (which could have been tokened independently of any pain experience), is strongly related to the sensory aspects of her pain–the condition in her knee *nociceptively* feels bad. Dinna's unpalatable guava experience, unlike her fear and even her nausea (which could have been brought about independently of the gustatory experience), is related, specifically, to the guava's taste–the guava *tastes* bad. And, as Fulkerson says, in Nadia's case, it seems that there is a sense in which the spider *looks* bad. In contrast, her fear has nothing essential to do with the visual sense-modality–she could have been stricken by a similar fear by sensing a spider crawling on her arm or by being told about its presence in her vicinity.

Valenced aspects, then, are essentially related to (modality-specific) sensory aspects. At the same time, we should note that, plausibly:

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[21] A terminological note: by 'sensory aspect' I mean an aspect corresponding to a look, taste, etc.–whether it represents low or high-level properties.

(P.3) Valenced aspects are not sensory aspects. Strictly speaking, valenced aspects are not looks, tastes, nociceptive feels, etc.

Note that if valenced aspects were sensory aspects, the challenge posed by *Individuation* (P.1) would not have arisen: had the valenced aspect of a visual experience *been* a look, there would be no puzzle as to why the valenced experience is a properly visual experience.

Standardly, (P.3) is implicitly taken for granted.[22] Let me suggest reasons for endorsing this principle. First, even if we assume that valences are representational features, they clearly do not represent low level features–they are not akin to colors, shapes, sweetness, etc. Whereas different visual experiences (a fire engine and a tomato) that represent the same low-level property (for example, a specific shade of red) share a distinct phenomenal quality that characterizes all and only experiences that represent that property, there is no such distinct phenomenal quality that characterizes different visual experiences that are unpleasant to a specific degree (see the discussion of P.4 below). Furthermore, nor are valences akin to sensory aspects that represent high-level properties, such as being a pine tree. As de Vignemont argues,[23] it is highly implausible that the evaluative properties they represent (which are widely held to be thin properties such as being good/bad for me to a certain degree) have distinctive, unique sensory (visual, gustatory, etc.) appearances–unique looks, tastes, etc. This is due to the huge variety of sensory aspects that can, for example, look bad, taste good, etc. For example, a spider, an angry face, and a dirty bandage, which need not share any unique (low-level as well as high-level) visual properties, can all look bad. Thus, as

[22] (for an exception, see de Vignemont, "Fifty Shades of Affective Colouring of Perception," *op. cit.*

[23] *Ibid.*

de Vignemont says, "[v]alence does not look like anything (or it looks like too many things)."[24]

Moreover, I will argue below (see P.7) that valences do not supervene on sensory aspects that represent (low-level) sensory properties–(low-level) sensorily identical experiences can have different valences. The exact same coffee can smell and taste both good and bad (to different perceivers or to the same perceiver on different occasions), and seeing the same table can result in visual experiences with different micro-valences.[25] In contrast, it is plausible that high-level sensory properties supervene on low-level properties. For example, "high-level looks" do supervene on "low-level looks": a given combination of colors and shapes either looks like a pine tree or it does not.

To complicate things further, the combination of (P.2) and (P.3) also poses a challenge: it is unclear how unpleasantness can characterize how the spider looks without being itself a sensory look, or how tastiness can characterize the way something tastes without being itself a sensory taste. (Note that it is not only that, for example, as in the case of fear, the *seen object* is negatively valenced, rather it is *seen* as negatively valenced). More generally, the question arises, how can valence characterize the sensory appearance of an object or property without being itself a sensory appearance?

I now reach two (closely related) principles concerning the *manner* in which valenced aspects are to be bound with sensory aspects in IVP (as is required by P.2).

(P.4) Phenomenal Non-Factorability. Valenced aspects and sensory aspects are *phenomenally* non-factorable. Experiences that differ in their sensory aspects (S_1 and S_2) cannot share a phenomenally distinct valenced component.

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[24] *Ibid.*, p. 10

[25] Lebrecht, "Micro-Valences," *op. cit.*

By way of illustrating P.4, and showing it to be supported by phenomenological observations, let us begin with the case of pain. Consider sensorily different kinds of pains–for example, a throbbing acute migraine and a severe but highly localized burn. Both pains, we can stipulate, feel bad and are unpleasant to a similar extent. Yet, these pains do not share a phenomenally distinct component–there is no exact *feeling* of painfulness that they share. Thus, it is not only that *painfulness* does not characterize perceptual experiences of *other sense-modalities*–for example, painfulness feels different from the unpleasantness of smelling vomit ("*inter*-modal non-factorability"). Rather, *sensorily different kinds of pains* do not share a "*phenomenal* common factor"–they are *not painful in the same way* ("*intra*-modal non-factorability"). This is yet another sense in which painfulness differs from the valenced elements that characterize the less interesting cases, such as a fear that may accompany sensorily different kinds of pains. The fear that accompanies the migraine and the fear that accompanies the burn may feel exactly the same. Furthermore, and most importantly, "sensory-valence non-factorability" is illuminated by its contrast with "sensory-sensory factorability": a visual experience of a red circle and an experience of a rectangle with the same shade of red *do* share a phenomenal common factor–they involve an aspect, that of particular redness, that maintains its phenomenal identity. As far as their color is concerned, the circle and the rectangle *look exactly the same*. This is a sense in which sensory-sensory binding, in contrast to sensory-valence binding, is componential–again, no such distinct phenomenal component is shared by the migraine and the burn-pain.

It is worth noting that this is actually an aspect of the notorious Heterogeneity Problem for the Distinct Feeling Theory of pleasurable and unpleasurable experiences. As Michael Brady notes in the context of presenting this problem, "[a] cracked elbow feels very different from a headache, which feels very different from a paper cut, which feels very

different from jogger's knee, and so on."[26] Importantly, it is not only that these pains differ in their sensory aspects. Rather, it is also that although they all feel bad, and moreover, they all feel bad in the distinctive way characteristic of pains–that is, they are all painful–*they are not painful in the same way*.

Similarly, consider other sense-modalities. As to gustation, phenomenologically, it seems that the tastiness of a pear–the *way* in which it feels good to eat it–cannot be instanced independently of gustatory experiences, and further, that it is different from the tastiness of beer. As to olfaction, the stench of an ashtray full of cigarette butts does not share a distinct phenomenal component with the stink of rotten meat. As to vision, admittedly, the force of phenomenological observations is more limited. Yet, granting that visual experiences are also valenced, unless they form an anomaly, they should "behave" similarly. Thus, according to P.4, the unpleasantness of seeing a spider cannot be tokened in isolation from any visual experience, and it should differ from the unpleasantness of seeing a dirty bandage. A spider and a dirty bandage *look unpleasant in different ways*.[27]

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[26] Michael Brady, *Suffering and Virtue* (Oxford University Press, 2018), pp. 35-36.

[27] Let me note a further complication. It is possible that valence attaches both to aspects representing low-level visual properties, such as colors and shapes, and to ones representing high-level properties, such as a rotten things and predators (for support of "rich visual perception," see, for example, Susanna Siegel, "Which Properties are Represented in Perception," in Tamar Gendler and John Hawthorne, eds., *Perceptual Experience* (Oxford University Press, 2005).). This raises the possibility that two experiences that represent different low-level properties (and thus differ sensorily) but the same high-level property (for example, a leopard experience and a grizzly bear experience) will share a positive or negative look. Their shared valenced aspects will also be *phenomenally* similar, due to their (visually)

We are now in position to move from P.4 to the positive P.5. It follows from P.4–that is, from the phenomenal non-factorability of sensory and valenced aspects–that *if* valence is intrinsic to perception, the relations between those aspects should be very tight. The binding in question should be of a strong kind. Specifically, I suggest the following as a defining characteristic of IVP:

> *(P.5) Intrinsicality as Phenomenal Uniqueness:* An experience with sensory aspect S_1 has its valenced aspect V_1 intrinsically, if (in accordance with P.4) V_1 cannot be tokened in isolation from S_1 *while maintaining its phenomenal identity*; so that when V_1 is bound with S_1 the way it's like to experience V_1 is *phenomenally unique*.

P.4 states that although an acute migraine and a burn both feel bad, and moreover, they feel bad in the distinctive way characteristic of pains–they are all painful–they do not share a phenomenally distinct identical component; phenomenally, they are not painful in the same way. P.5 states that each of these pains–the migraine and the burn–*is painful in its own distinctive way*. In other words, when valenced aspect V_1 is bound with sensory aspect S_1 the way it's like to experience V_1 is *phenomenally unique*.

Similarly, the tastiness of a pear, which is phenomenally different from that of a beer, is *distinctive* of gustatory pear experiences, and, phenomenally, the unpleasant look of the spider is exclusive to sensorily similar visual experiences (or ones visually representing the

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representing the same high-level property (that of being a predator). The more general and accurate characterization of P.4, then, can be put in terms of the relations between *valenced* aspects and the *non-valenced visual aspects* (whether low-level sensory properties or high-level properties) *to which they are bound*: experiences that differ in their non-valenced visual aspects cannot share a phenomenally distinct valenced component (similar comments will apply to P.5).

same high-level property–see note 27). Thus, P.5, provides a sense in which the sensory-valence connection is indeed strong. It is not only stronger than the connection between a perceptual experience and the distinct accompanying emotion or affect (for example, the visual-experience and the fear); it is also stronger than the binding of different sensory aspects (for example, color and shape). Sensory-valence binding, unlike sensory-sensory binding, is non-componential binding.

What can be said in favor of P.4 and P.5?[28] First, as already mentioned, they are supported by introspection and *phenomenological observations*. Relatedly, they appear to cash out the intuitive notion of "sensory-valence *fusion*." Their being thus supported is most

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[28] An important question is what empirical findings would support the principles. One proposal is to enlist the vast literature on the distinction between separable and integral dimensions, as characterized by susceptibility to Garner interferences. Roughly, susceptibility to Garner interferences is supposed to characterize dimensions that are integral, and such dimensions are characterized, at the personal level, as ones in which the processed stimuli "are experienced in their totality as undivided wholes" (Daniel Algom and Daniel Fitousi, "Half a Century of Research on Garner Interference and the Separability–Integrality Distinction," *Psychological Bulletin*, CXLII, 12 (2016): 1352-1385, p. 1353). This is in contrast to separable dimensions in which the processed stimuli "impress the observer as composition of distinct attributes" (*ibid.*). Briefly, integral dimensions – ones that interfere with one another – are such that when subjects are asked to judge a stimulus on one of the two dimensions (the "relevant one"), variations in the other ("irrelevant") dimension would decrease the subjects' speed and accuracy of responding. If it can be shown that sensory and valenced aspects are susceptible to Garner interferences, this may support P.4 and P.5.

apparent in the paradigmatic case of pain, but it is also quite plausible with respect to gustation and olfaction, and it rings true in the case of vision. (Due to the fact that, when it comes to valence, the visual case lends itself less easily to phenomenological observations, when what is at stake are phenomenological issues, I believe we should be guided primarily by the more pronounced cases.)

Importantly, a central consideration in support of *Intrinsicality as Phenomenal Uniqueness* (P.5) is that it seems to answer the desiderata expressed by P.1 and P.2 and is compatible with the constraint expressed by P.3. Clearly, according to *Intrinsicality* (P.5), valenced aspects turn out to be tightly connected to specific sensory aspects in particular sense-modalities, just as required by *Modality-Specificity* (P.2), as they characterize how things look, taste, etc. Next, *Intrinsicality* coheres with constraint (P.3), according to which *valenced aspects are different from sensory aspects,* because (as will be further clarified in section III), according to *Intrinsicality*, valences are phenomenal *ways* of having experiences with specific sensory aspects. As such, visual-valences can characterize how something looks without themselves being looks, and gustatory-valences can characterize how something tastes, without themselves being tastes. Most importantly, *Intrinsicality* certainly provides a sense in which valenced aspects are (non-stipulatively) crucial to the individuation of particular perceptual experiences. It thus answers to *Individuation* (P.1). Further, it answers to *Individuation* in a way that resolves the challenge that seemed insurmountable given (P.3): although a valenced aspect is not a sensory aspect (P.3), Nadia's valenced experience is a proper (unitary) *visual* experience, because its valenced aspect is phenomenally unique to experiences with specific sensory (visual) aspects. Finally, *Intrinsicality* expresses a *modal* claim–according to it, it is *impossible* for valenced and sensory aspects to come apart while maintaining the former's phenomenal identity. Thus, there are phenomenal types of perceptual experiences, such that their tokening necessitates both the tokening of particular

sensory aspects and the tokening of particular valenced aspects. Hence, *Intrinsicality* indeed provides a sense in which valences are *intrinsic* to perceptual experiences.

Intrinsicality as Phenomenal Uniqueness (P.5), then, seems promising. It seems to capture what is required for IVP. However, there seem to be two other constraints on the notion of IVP, and it is not at all clear whether, and if so how, experiences that meet *Intrinsicality* can also meet those constraints. The two constraints may seem in tension with *Phenomenal Non-Factorability* (P.4) and hence with *Intrinsicality* (P.5), thus forming two further challenges for developing a coherent conception of IVP.

The first of these constraints is:

(P.6) Valence-Comparability. Experiences that differ in their sensory aspects (S_1 and S_2), which (according to P.4 and P.5) do not share a *phenomenally* distinct identical valenced aspect, can nonetheless share their valenced aspect (V_1).

Although according to *Non-Factorability* and *Intrinsicality*, S_1 and S_2 (for example, a headache and a paper cut) cannot share a *phenomenally* identical valence, it seems that they can nonetheless be judged to have the same valence–for example, they can both feel bad, and moreover feel bad to a similar degree. Further, the very fact that such experiences can be ranked–for example, that a particular tokening of S_1 can be judged to feel worse than a particular tokening of S_3–testifies that their valences are comparable. Clearly, standard pain-scales presuppose comparability.[29] Similarly, comparability is apparent in other sense-

[29] For example, see the McGill Pain Questionnaire (Ronald Melzack and Warren S. Torgerson, "On the Language of Pain," *The Journal of the American Society of Anesthesiologists*, XXXIV, 1 (1971): 50-59; Ronald Melzack, "The McGill Pain Questionnaire: Major Properties and Scoring Methods," *Pain*, I, 3 (1975): 277-299).

modalities: I prefer the taste of a pear over that of an apple, and I prefer them both over the taste of a guava; it is a common practice to use air fresheners in toilets, as their smell is more appealing than that of urine; and visual-valence scales form the starting point of much of the micro-valence research.[30]

Lastly, perhaps the greatest challenge to *Intrinsicality* (and hence for IVP) is posed by what Jacobson[31] calls 'Valence-Variance' (VV):

> *(P.7) Valence-Variance:* Experiences that share their sensory aspect (S_1) can have different intrinsically valenced aspects (for example, V_1, V_0, or V_{-1}).

Perceptual experiences exhibit (often far-reaching) inter-subjective as well as intra-subjective variability – sensorily similar experiences can differ in their valence. VV is phenomenologically familiar and plausible: I once used to detest the taste of eggplants and I now love it, though it still seems to have the very same sensory taste. Moreover, by now VV is supported by empirical evidence, concerning, for example, the mechanisms that determine valence: the standard mechanism for "acquiring tastes" in all sense-modalities is considered to be Evaluative Conditioning, which is taken to leave intact the sensory aspects of the experiences.[32] Note that even pain exhibits VV (though this phenomenon is more pronounced in other cases): pain-VV is supported both by the prevalent interpretation of pain-asymbolia

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[30] Lebrecht and Tarr, "Defining an Object's Micro-Valence Through Implicit Measures," *op. cit.*; Lebrecht, "Micro-Valences," *op. cit.*; and Lebrecht et al., "Micro-Valences," *op. cit.*

[31] Jacobson, "The Role of Valence in Perception," *op. cit.*; and Jacobson, "Not Only a Messenger," *op. cit.*

[32] See Jan De Houwer, Sarah Thomas, and Frank Baeyens, "Association Learning of Likes and Dislikes: A Review of 25 Years of Research on Human Evaluative Conditioning," *Psychological Bulletin*, CXXVII, 6 (2001): 853.

(in which painfulness is entirely missing), and by the fact that subjects whose pains undergo specific modulations regularly report that, before and after the modulation, their pains have the same sensory aspects (and the same intensity) yet feel differently, due to being more or less unpleasant.[33] Common scientific and clinical wisdom takes these reports at face value (as is also reflected in standard pain questionnaires–see note 29).

Note that VV (P.7) is in *prima facie* tension with previous principles. Consider *Individuation* (P.1) as well as *Intrinsicality* (P.5): how can valenced aspects be essential and intrinsic to the individuation of perceptual experiences with specific sensory aspects if they can vary independently of these experiences' sensory aspects? Indeed, if the sensory aspect of an experience does not determine its valenced aspect, it might be thought that their relation is contingent and that the valenced aspect is an external addendum to the sensory experience. Strictly speaking, Intrinsicality allows for valences to be tokened independently of given sensory aspects, as long as they do not maintain their phenomenal identity. But how can valences be tokened without maintaining their phenomenal identity, given that they are intrinsic phenomenal aspects?

This tension is pressing in light of the requirements made explicit by other principles. Had valenced aspects been just another kind of sensory aspects, this tension would not arise. Similarly, had "valence-sensory binding" been similar to the componential "sensory-sensory binding," the tension would be relieved: it is clear how both the shape-sensory-aspect and the color-sensory-aspect of a perceptual experience are both intrinsic to it and essential to its individuation, notwithstanding "shape-color variability." However, principles (P.3) and (P.4)–*Valenced Aspects are Not Sensory Aspects* and *Non-Factorability*, respectively–negate

[33] See, for example, Richard H Gracely, "Affective Dimensions of Pain: How Many and How Measured?" *APS Journal*, I, 4 (1992): 243-247.

these antecedents. Relatedly and importantly, it may seem that (P.4), which is presupposed by (P.5), clashes with VV for the following reason. It may seem that if experiences with sensory aspect S_1 can be tokened both with and without some valenced aspect V_1, then S_1 and V_1 (just like redness and squareness) *are* decomposable into phenomenally distinct components. But according to *Non-Factorability*, they are not distinct components. Generalizing, for each pair of sensory and valenced aspects (S_n and V_n), the conjunction of *Valence-Variance* (P.7) and *Intrinsicality* (P.5) may seem incoherent.

Thus, it should be shown that the following two claims can both be true: first, that S_n can be tokened in isolation from V_n; and second, that V_n cannot be tokened in isolation from S_n *while maintaining its phenomenal identity*. An appropriate model for IVP should take valences and sensory aspects to be (nomologically) independent (orthogonal) features, yet such that the phenomenal character of a given experience is a non-componential function of both features.[34] In the next section, I suggest such a model.

Before doing so, however, I would like to raise yet another suggestion. My concern in this paper is with what is required for valence to be intrinsic to perceptual experiences. Obviously, we take it for granted that sensory aspects are intrinsic to perceptual experiences, hence I focus on the relations that valenced aspects bear to sensory aspects. Nonetheless, I tentatively propose that the relations between sensory and valenced aspects are symmetric *in the following sense*: parallel principles to *Phenomenal Non-Factorability* (P.4) and *Intrinsicality as Phenomenal Uniqueness* (P.5) also hold in the other direction. Thus,

[34] The independence should be taken to mean that, in accordance with *Valence-Variance*, the aspects can nomologically (empirically) vary independently of each other. Yet, this is fully compatible with the claim that they can causally influence one another.

according to the principles, when a valenced aspect V_1 is bound with sensory aspect S_1 *the way it's like to experience V_1 is phenomenally unique*; when V_1 is tokened with a different sensory aspect–S_2, the way it is like to undergo V_1 would feel differently. Similarly, I now suggest, we should accept the Inverse Principles: when sensory aspect S_1 is bound with valenced aspect V_1 *the way it's like to experience S_1 is phenomenally unique*; when S_1 is tokened with a different valenced aspect–V_2, the way it's like to experience S_1 would feel differently. One who absolutely loves eggplants and one who detests them can share experiences with the same sensory aspects (this, note, is in accordance with a principle that is parallel to Comparability (P.6)); yet, there would be a difference in the way it feels for each of them to undergo the experience, and moreover, the (sensory) taste itself would feel different, as it is "tinted" by the respective valenced aspect. Just as the valenced aspect (for example, the felt unpleasantness) is tinted by the sensory aspect, the sensory aspect (its taste) is tinted by the valenced aspect. Similarly, the way the sensory aspect of a pain-asymbolic feels is different from the way a sensorily similar pain that is excruciating feels: though the two pains can share their sensory aspects (for example, as penetrating to the same degree), the asymbolic pain would *feel* different even when considered "merely sensorily." *Phenomenally*, the shared sensory aspect is not a distinct component. Thus, not only are valences phenomenal ways of having experiences with particular sensory aspects; sensory aspects are phenomenal ways of having experiences with particular valenced aspects.

To the best of my knowledge, the possibility that sensory aspects are phenomenal ways of having experiences with particular valenced aspects has never been considered. Relatedly, whereas the phenomenal non-factorability of valenced aspects (P.4) has been discussed in the context of the Heterogeneity Problem for the Distinct Feeling Theory of pleasurable and unpleasurable experiences, there is no mention in the philosophical literature of phenomenal non-factorability of sensory aspects. Why is that so? I suggest that a central reason for

ignoring this possibility–a reason that is related to the general neglect of IVP–stems from our tendency to focus on visual experiences, and the fact that sensory aspects are in various respects "primary" and more salient in such experiences. To repeat, most of the valences associated with (human) visual experiences are minute, micro-valences. This is one sense in which the visual modality is characterized by the primacy of sensory aspects. Relatedly, although extant scientific literature does assign a role to micro-valences in discriminating and recognizing visual objects and properties, the role of sensory aspects is surely greater. In vision, the role of valenced aspects is secondary relative to that of sensory aspects, and subjects tend to focus on the latter.

Yet, there are reasons for thinking that this is not the case with respect to other sense-modalities. To mention but one example, there is strong support for the primacy of valence in olfaction. Indeed, it has been argued that pleasantness is "the primary axis of olfactory perception".[35] Thus, odorant pleasantness was shown to be the primary aspect of odor spontaneously used by subjects in olfactory discrimination tasks[36] as well as the primary criterion spontaneously used to combine odorants into groups.[37] Similarly, when using

[35] Yaara Yeshurun and Noam Sobel, "An Odor is not Worth a Thousand Words: From Multidimensional Odors to Unidimensional Odor Objects," *Annual Review of Psychology*, LXI (2010): 219-241, p. 227.

[36] Susan Schiffman, "Physicochemical Correlates of Olfactory Quality," *Science*, CLXXXV, 4146(1974): 112-117.

[37] Birgitta Berglund, Ulf Berglund, Trygg Engen, and Gösta Ekman. "Multidimensional Analysis of Twenty-One Odors," *Scandinavian Journal of Psychology*, XIV, 1 (1973): 131-137; Susan Schiffman, David E. Robinson, and Robert P. Erickson, "Multidimensional

various verbal descriptors to describe odorants, pleasantness has been shown to be the primary dimension in multidimensional analyses of the resultant descriptor space.[38] Furthermore, the primacy of valence is supported not only by considering salience of valence-encoding within patterns of odorant-induced brain activation[39] but also, remarkably, by considering odor molecules. Thus, reporting on findings by Khan[40] regarding the principle physicochemical axis of odor space, Yeshurun and Sobel say: "[The researchers] found that the resultant axis, the first principal component of molecular structure, that is, *the axis that best explains the variance in odor structure*, was significantly correlated to the perception of odorant pleasantness."[41] In light of these findings Yeshurun and Sobel go so far as to define an olfactory object as a "given pleasantness" (which is generated by the integration of an external component made of molecules and an internal subjective component). According to

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Scaling of Odorants: Examination of Psychological and Physicochemical Dimensions," *Chemical Senses*, II, 3 (1977): 375-390.

[38] See, for example, Rehan M. Khan, Chung-Hay Luk, Adeen Flinker, Amit Aggarwal, Hadas Lapid, Rafi Haddad, and Noam Sobel, "Predicting Odor Pleasantness from Odorant Structure: Pleasantness as a Reflection of the Physical World," *Journal of Neuroscience* XXVII, 37 (2007): 10015-10023.

[39] Adam K. Anderson, Kalina Christoff, Iris Stappen, David Panitz, D. G. Ghahremani, G. Glover, John DE Gabrieli, and Noam Sobel, "Dissociated Neural Representations of Intensity and Valence in Human Olfaction," *Nature Neuroscience*, VI, 2 (2003): 196-202.

[40] Kahn et al., "Predicting Odor Pleasantness from Odorant Structure," *op. cit.*

[41] Yeshurun and Sobel, "An Odor is not Worth a Thousand Words," *op. cit.* pp. 228-29, emphasis added.

this definition, “if grapes and melon have exactly the same pleasantness for a specific person, then olfactory-wise, grapes and melon are the same object for that person”.[42]

These findings support the conjecture that it is natural to take the valence of an olfactory experience to be its primary aspect and its sensory aspect as its secondary aspect. At the very least, this is to be understood as the claim that valenced aspects are more significant in odor discriminations and identification, which also accords with the prominence of valence in olfactory phenomenology. Furthermore (and relatedly), as far as olfaction (as well as pain) are concerned, the Inverse Principles are, phenomenologically, at least as plausible as P.4 and P.5. And this, in turn, well accords with and explains the notion that in the olfactory case, it is not only that P.4 and P.5 are plausible (for which I have argued earlier), but that the Inverse Principles are (at least as) plausible as well. Accepting that (olfactory) sensory aspects are ways of having experiences with certain valenced aspects is at least as plausible as accepting that valenced aspects are ways of having experiences with certain (olfactory) sensory aspects. When jasmine smells delightful, neither the sensory aspect nor the valenced aspect of the experience are phenomenally distinct components–phenomenally, each is bound to the other non-componentially. Focusing on the inverse direction, in case the jasmine smells terrible, it is impossible to isolate an exact *phenomenal* component corresponding to the sensory aspect of the experience. I propose that the same bi-directional analysis–that is, accepting P.4 and P.5 as well as their inverses–may apply to other sense-modalities.

An alternative analysis, which clearly cannot be ruled out at this stage, would be to endorse only the Inverse Principles in the olfactory case, and only P.4 and P.5 in the visual case. Yet, the bi-directional analysis has some advantages. It accommodates a structural similarity among the (phenomenal) binding principles of sensory and valenced aspects across

[42] *Ibid.*, p. 230.

different sense-modalities, while still leaving room for differences in the *relative* salience and importance of each aspect across those modalities. This, in turn, accords with the plausible hypothesis that there are common functions to experiences in various sense-modalities, yet that some sense-modalities are relatively more geared toward action–for example, toward immediate approach/avoidance responses or prescriptions of "more/less" of the stimulus. Lastly, the proposed analysis accords well with the specific model of the relations between sensory and valenced aspects that I will now present.[43] Further, that model is required for further elucidating *Intrinsicality* (P.5) and defending it from the challenges that arise in light of the other principles. Hence, at this stage, I find the proposed bi-directional analysis more attractive.

III. THE DETERMINATION-DIMENSION MODEL OF INTRINSIC PERCEPTUAL VALENCE

I now move to the final stage of the elucidation of IVP. I will propose a specific model *of the relations between sensory and valenced aspects* that answers the various desiderata and constraints. Most importantly, the model attempts to shed further light on *Intrinsicality* (P.5), while showing it to be compatible with the remaining principles, and, in particular, with *Valence-Comparability* (P.6) and *Valence-Variability* (P.7).

[43] In the model to be presented (DDM), the relations between different determination dimensions are symmetric (notwithstanding the fact that, in some respects, one dimension–for example, hue in the case of color–is more salient).

I suggest thinking of valence as a *determination-dimension* along which phenomenal characters of experiences with specific sensory aspects (or the same "sensory profiles") vary. The notion of a determination-dimension is the notion of a dimension along which different determinates of the same determinable vary.[44] This suggestion allows us to think of the phenomenal characters of experiences as determined according to both their sensory aspects and their valences, where the valences are phenomenal *ways of having experiences with those sensory aspects*.

This requires some unpacking. Let us start with an illustration of the Determination-Dimension Model (DDM) from the realm of color. The model explicates the relations between the dimensions of color (a determinable)–namely, hue, saturation, and brightness: each particular shade (each determinate) has a determinate "value" with respect to each of these dimensions. For example, (collapsing for the sake of simplicity two of the three dimensions) shades with fixed hue and saturation (for example, a slightly brownish red with a medium-low level of saturation) vary along the dimension of brightness. The determinates (depicted by the different shades appearing in figure 1), then, are shades of these hue and saturation that differ in their levels of brightness. Different levels of brightness are thus *ways* of being a shade with this particular hue-plus-saturation profile. Obviously, the level of brightness of a particular determinate color is *intrinsic* to it and *essential to its individuation*.

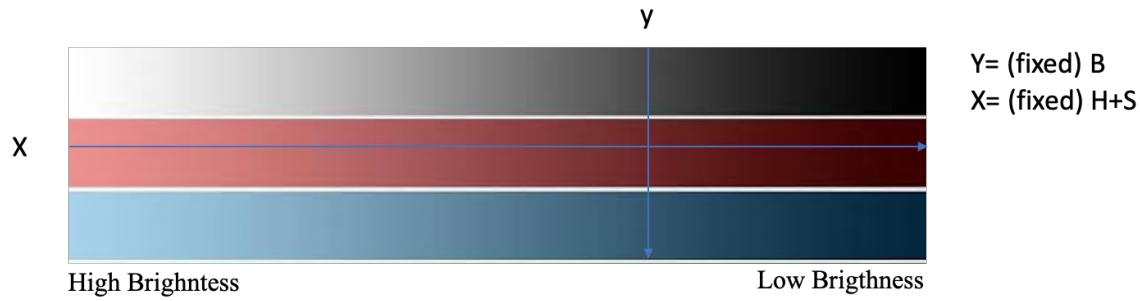
Figure 1

[44] See, for example, William Ernest Johnson, *Logic (Part 1)* (Cambridge University Press, 1921); Eric Funkhouser, "The Determinable-Determinate Relation," *Noûs*, XL (2006): 548-569,

The figure depicts shades with a fixed hue and saturation whose level of brightness is gradually decreased.

Now, what more can be said regarding the relations between hue-plus-saturation aspects and brightness aspects?

Figure 2



Along the (x) axis, the shades differ in their brightness. Along the (y) axis, the shades are identical in their level brightness.

First, as is depicted by the different shades along the vertical (y) axis in Figure 2, specific levels of brightness cannot be tokened in isolation from a specific hue-plus-saturation profile while maintaining their looks or "phenomenal" identity; their binding with a specific hue-plus-saturation profile is "phenomenally" unique. This is in accordance with what might be termed "*Brightness Phenomenal Non-factorability*," which is the analogue of P.4, and with "*Brightness Intrinsicality as Phenomenal Uniqueness*," which is the analogue of P.5. For example, a medium-low saturated red and a medium-low saturated blue that are both very dark *look different*. When a specific level of brightness characterizes two different hue-plus-saturation profiles, the resulting shades do not share a *distinct* look (they are "non-

factorable"): as far as their looks are concerned, their shared brightness aspect (their being characterized by the same high level of darkness) is not a distinct component. This, recall, is unlike the rectangle and the triangle that can share the same color–the 'binding" of hue, saturation, and brightness is *non-componential binding*.

Second (and, again, as depicted by the shades along the y axis), there is a sense in which such shades with *different* hue-plus-saturation profiles can *share* their level of brightness, and moreover a sense in which they can both *look* very dark. This accords with "*Brightness Comparability*," which is the analogue of P.6.

And, third, as is depicted by the different shades along the horizontal x axis, shades with the *same* hue-plus-saturation profile can *differ* in their brightness. This accords with "*Brightness-Variance*," which is the analogue of P.7. A medium-low saturated red can be both very dark and very light. Thus, *Brightness Intrinsicality* is compatible not only with *Brightness Comparability* but also with *Brightness Variance*.

Returning to the relations between sensory and valenced aspects, I suggest that valence is analogous to brightness. If valence is viewed as a determination-dimension along which phenomenal characters of experiences with specific sensory aspects can vary, then it can appropriately be conceived as a *phenomenal way of having those sensory aspects*. This surely provides a sense in which valenced aspects are essential, and intrinsic, to the individuation of perceptual experiences with given sensory aspects. Far from being a mere stipulation, the valenced aspect turns out to be part and parcel of what it is like to have a particular sensory experience. Thus, DDM as applied to sensory aspects and valences accords well with P.1, namely with *Individuation*.

Also note that, *as values of a determination dimension*, valences cannot be instanced independently of what they determine–that is, specific sensory aspects such as specific tastes

and looks. Further, they are strongly *"bound" with* and *characterize* the sensory aspects of specific determinates–they characterize or qualify how things taste and look. This delivers P.2, namely, *Modality Specificity*. At the same time (and, again, just like brightness) valenced aspects, *as values of a separate dimension along which specific tastes and looks vary*, are not themselves distinct tastes and looks. They are not sensory aspects "in their own right," as valences and sensory aspects belong to different categories. The model, then, implies P.3–it implies that *Valenced Aspects are not Sensory Aspects*. Furthermore, it resolves one of our *challenges*: P.2 and P.3 turn out to cohere with each other, as valences characterize how things sensorily appear without being themselves sensory appearances.

Importantly, according to the DDM model, sensorily different experiences *cannot* share a *phenomenally* identical valenced component. The claim that they cannot share such a component is precisely *Non-Factorability* (P. 4). A valenced aspect that characterizes an experience with a specific sensory aspect cannot be tokened in isolation from this sensory aspect *while maintaining its phenomenal identity;* rather, when thus instanced it is phenomenally unique. This is the defining characterization suggested for IVP, namely, *Intrinsicality* (P.5). Again, *Intrinsicality* and *Non-Factorability* follow from viewing specific valences *as values of a determination dimension*: as such, they are (phenomenal) *ways* of having the specific parameters they determine, rather than distinct components. Relatedly, as we saw, particular values of different determination dimensions are related to each other non-componentially.

The model also accommodates *Comparability* (P.6) (and its coherence with *Non-Factorability* (P.4)): it sheds light on the claim that although two sensorily different experiences (for example, a headache and a cracked elbow) cannot feel good/bad in the same way and share a *phenomenally* distinct component, they *can* share their valence–they can

both feel good/bad to the same degree. This is what happens when sensorily *different* experiences *have the same "value" along the valence determination-dimension*.

Finally, the model implies that perceptual experiences can have phenomenal characters with specific sensory aspects *in more than one phenomenal way*–specifically, *in different valenced ways*. This is the principle of *Valence-Variance* (P.7). According to DDM, this is what happens when sensorily identical experiences *have different "values" along the valence dimension*. Thus, according to the model, the following two claims are both true. First, in accordance with *Valence-Variance* (P.7), two experiences can share the same sensory profile S_1 (for example, that of a cracked elbow), while only one of them has a valenced aspect V_1 (is painful to degree x). And second, in accordance with *Intrinsicality* (P.5), V_1 and S_1 are not two separable components such that V_1 can be tokened in isolation from S_1 while maintaining its phenomenal identity–when V_1 is tokened with a different sensory aspect S_2, the result is phenomenally unique. This resolves the final challenge: *Valence-Variance* does not imply factorability and is compatible with *Valence Intrinsicality*.

Let me end by raising a question with interesting implications regarding the conceptualization of valence as a determination dimension. The question is how to account, within DDM, for the specific case in which a sensory profile is putatively tokened in isolation from *any positive or negative valence.* Examples might be the "painless pain" of a pain-asymbolic and a gustatory experience of an apple that is neither pleasant nor unpleasant, even to the slightest degree. Before briefly addressing this issue, it is worth noting that according to the micro-valence literature, what may appear as the "neutral" category is replaced by fine-grain differences in micro-valence close to the center between the extremes of strongly positive and strongly negative; the implication being that *truly* neutral valence would require an extremely unlikely coincidence. In fact, Barrett and Bar go so far as to claim that

whenever we see, we see "with feeling",[45] and Lebrecht asserts that "micro-valence" "ranges in magnitude but is always present".[46] Nonetheless it is important to inquire how, within DDM, can such (even if only theoretically) neutral experiences be treated.

I tentatively suggest that we may understand the "neutral" case as one in which *there is* a valenced aspect that is *neutral*. The model allows us to understand "neutrality" as just one of the specific values that are included in the valence determination-dimension. According to this suggestion, valences vary along an axis, from negative to positive (V_{-n} – V_{+n}), and a neutral valence is simply the middle point (V_0) of that axis. Having a neutral valence is still a way–and moreover, a valenced way–of having phenomenal characters with specific sensory profiles. Thus, according to this proposal, all perceptual experiences vary along the determination-dimension of valence.[47]

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[45] Barrett and Bar, "See it with Feeling," *op. cit.*

[46] Lebrecht et al., "Micro-Valences," *op. cit.*, p. 1.

[47] In a similar vein, we can depict levels of brightness as varying along a negative-positive axis and take the middle point of that axis–that in which a shade with a specific hue-plus-saturation profile is neither dark nor light–to be the point of "neutrality" with respect to brightness. Admittedly, a relevant difference between the case of brightness and that of valence with respect to DDM is that it may be more *natural* to view brightness as a dimension that varies along a positive axis ($B_{0\text{-}n}$), where zero brightness–a black shade–lies at the beginning of the axis, and a maximal, 100% level of brightness–a white shade–lies at its end. According to this depiction, shades that occupy the middle position of the axis are those whose brightness level are 50%, and it may not be natural to describe such shades as "neutral." In the case of valence, in contrast, it is more *natural* to depict the different values (that is, valences) as occupying a continuum with opposing endpoints (that is, negative and

IV. CONCLUDING REMARKS

I have aimed to shed light on the notion of Intrinsically Valenced Perception (IVP). Granting that, given a certain explication of IVP, the hypothesis that there are cases of IVP requires empirical vindication, the main objective of this paper was to provide such an explication. Thus, the central question driving the paper was what is *required* for perception to be intrinsically valenced. Drawing on phenomenological, theoretical, and empirical considerations, I have identified central principles that specify requirements that IVP must meet. These principles shed light on the relations between sensory and valenced aspects in IVP and distinguish between putative cases of IVP and ones in which there is a merely "external"–*albeit* strong–relation between perceptual experiences and affective or emotional states.

I have argued that valenced aspects characterize how something looks or tastes (P.2), without being themselves looks or tastes (P.3). Also, sensory and valenced aspects are orthogonal in that sensorily different experiences can share their valence (P.7) and

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positive ends). Indeed, perceptual valences are depicted in this manner in the scientific literature (for example, the micro-valence literature), though, admittedly, their forming such a continuum is an empirical conjecture that may require further vindication (one aspect of which is whether 'zero' valence is encoded by the system, or whether the system is simply 'silent' with regard to valence in cases of neutrality). In this paper, I assume that they are. Most importantly, the noted disanalogy between valences and colors, even if it obtains, is inessential for our purposes, because it is inessential to DDM: the model leaves it open whether a determination-dimension forms a positive/negative continuum.

experiences that differ in their valence can share the same sensory aspects (P.6). Most importantly, despite this orthogonality, in any given experience the two aspects are strongly, non-componentially, bound with one another at the level of their phenomenal character–at that level, the two aspects are inseparable. The valenced aspect of an experience with a given sensory aspect cannot be tokened in isolation from that sensory aspect while maintaining its phenomenal identity. Rather, when a specific valenced aspect is bound with a specific sensory aspect, the way it's like to experience that valenced aspect is phenomenally unique (P.4 and P.5). This, in turn, explicates the requirement that valenced aspects are indeed intrinsic to the phenomenal characters of particular perceptual experiences and are (non-stipulatively) essential to their individuation.

Lastly, the relations between sensory and valenced aspects is further elucidated by the Determination-Dimension Model, according to which valence is a determination-dimension along which the phenomenal characters of experiences with specific sensory aspects (or the same "sensory profiles") vary. On this model, the phenomenal character of each experience is determined according to both its sensory and its valenced aspects (just as a specific shade is determined according to both its hue-plus-saturation profile and its level of brightness), in a manner that entails that valences are ways of having experiences with those sensory aspects. The claim that valence is intrinsic to the phenomenal character of experiences with certain sensory profiles is thus given a clear sense.