Merleau-Ponty's Immanent Critique of Gestalt Theory

Abstract

Merleau-Ponty's appropriation of Gestalt theory in *The Structure of Behavior* is central to his entire *corpus*. Yet commentators exhibit little agreement about what lesson is to be learned from his critique, and provide little exegesis of how his argument proceeds. I fill this exegetical gap. I show that the Gestaltist's fundamental error is to reify forms as transcendent realities, rather than treating them as phenomena of perceptual consciousness. From this, reductivist errors follow. The essay serves not only as a helpful guide through parts of *The Structure of Behavior* for newcomers, but also offers a corrective to recent trends in philosophy of mind. Such influential commentators as Hubert Dreyfus, Taylor Carmen, and Evan Thompson have, I argue, risked serious misunderstanding of Merleau-Ponty's view, by mistakenly treating "circular causality" as central to Merleau-Ponty's own acausal (dialectical) view of forms.

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1. Introduction

There is widespread agreement that Merleau-Ponty's early engagement with Gestalt theory in *The Structure of Behavior* (hereafter, *SC*) influences his entire *corpus*.[1] With regard to what this engagement *secures*, there is widespread (nominal) agreement that Merleau-Ponty re-appropriates the notion of "form" or "structure" from the Gestaltists. What exactly this re-appropriation amounts to can only be made clear by examining how Merleau-Ponty's engagement with the Gestaltists actually *proceeds*. Systematic analysis of *SC*'s arguments against the Gestaltists has been lacking.[2] However there is widespread (nominal) agreement that Merleau-Ponty's own conception of forms is in some sense "anti-reductive," and that to promote this conception, he combats the Gestaltists' own "reductivist" or "naturalistic-realistic" or "objectivist" understanding of the being of forms.[3] Moreover, there is agreement that somehow the critique is not external to Gestalt theory's own commitments, but rather is intended to turn their own principles against them.

[1]See for example Barbaras (2005, p.213), Dastur (2009, pp.257-258), Flynn (2009, p.122), Madison (1981, p.1), Priest (1998, pp.3-5), Rouse (2005, p.265).

[2]Ted Toadvine laments commentators' general oversight of *SC*, yet even he does not offer an analysis of *SC*'s engagement with the Gestaltists which "follow[s] the details," (2009, p.25), referring the reader to Bannan (1967). Heinämaa (2009) provides one of the most insightful analyses to date of Merleau-Ponty's engagement with Gestalt theory, but discusses only the *Phenomenology of Perception* (hereafter, *PP*) and later texts. Embree gives a chronological overview of Merleau-Ponty's engagement with Gestalt theory, but resorts to a brief list of claims to summarize *SC* (1980, p.109).

[3]Bannan (1967, p.28), Dreyfus (2005, p.142), Flynn (2009, p.122), Embree (1980, p.109),Welsh (2006, *passim*), Toadvine (2009, p.21).

Beyond these generalities, however, there has been a failure to clearly state, let alone reach agreement upon, the details of how this immanent critique of Gestalt theory proceeds. As I shall discuss below, commentators have offered a variety of different conceptions of Merleau-Ponty's "anti-reductivism" in *SC*. Moreover, there has been confusion over where and how *SC* makes its advance against the Gestaltists. At the extreme, one might think with Bannan that Merleau-Ponty "makes his entire case in every chapter, the advance in each being primarily a matter of shifting emphasis" (1967, p.31). On such a reading, *SC*'s critique of the Gestaltists would be scatter-shot and difficult to localize to any one portion of the text.

My goal here is to more sharply clarify the nature and extent of Merleau-Ponty's disagreement with the Gestaltists, and to show precisely where it occurs. *SC*'s progression involves much more than a "shift of emphasis." In *SC*'s Chapters I and II, Merleau-Ponty cites the Gestaltists approvingly to clarify the errors of classical, atomistic physiology and psychology. Throughout this portion of the text, there is an *Open Ontological Question*: "forms" are invoked to describe the phenomena of the nervous system, behavior, and perception, but while these descriptions speak against atomistic ontology, Merleau-Ponty offers no positive characterization of the being of forms. Importantly, he offers no arguments against the Gestaltist's own understanding of the being of forms. It is not until Chapter III that Merleau-Ponty seeks to address the *Open Ontological Question*. There he simultaneously argues against the Gestaltists' view of forms as realities, and promotes his own al-

ternative view of the being of forms as phenomena of perception possessing a dialectical unity. We must look here, and only here, to clarify Merleau-Ponty's "anti-reductivism," and his immanent critique of the Gestaltists.

To provide this clarification, I shall simply proceed systematically through *SC*'s Chapters I, II, and III (§§2, 3, & 4 below, respectively).[4] I focus selectively on Merleau-Ponty's engagement with the Gestaltists, underscoring the switch from provisional agreement with the Gestaltists (against the atomists), to decisive disagreement (regarding the being of forms). One upshot of this analysis is that we must sharply distinguish two different conceptions of "circularity" which are deployed in different portions of *SC*. One notion of circularity, namely *circular causality*, appears early (and sparingly) in *SC*. I argue that it is best understood as a moderate concession to Merleau-Ponty's atomist opponents – one which fails to evade his criticisms. Another notion of circularity, namely the *circular dependence* of forms' non-independent parts as they occur in a dialectical unity, appears late in *SC*. This, I argue, is best understood as part of Merleau-Ponty's own positive conception of the being of forms, and it is of central relevance to his critique of the Gestaltists. A number of recent commentators (Dreyfus, 2005, Thompson, 2007, Carman, 2008) have conflated these notions of circularity, as if the difference between them were merely a subtle "shift of emphasis." Any such view, I suggest, risks precisely the kind of error which Merleau-Ponty accuses the Gestaltists

[4] A focus on the Gestaltists does not license discussion of Ch. IV, as I explain below.

of making: misunderstanding the dialectical unity of forms as any kind of real unity, and reifying forms as transcendent entities discovered through science, rather than apprehending them as perceptual phenomena.

2. Chapter I

SC opens with an illustration of the difference between how naïve consciousness and science approach behavior. If my head turns so that my eyes are continuously oriented towards a moving spot of light, naïve consciousness suggests I have intended to follow the light (a qualitative *phenomenon*). Scientific analysis opposes naïve consciousness: it regards perceptual phenomena as mere appearances of genuine, transcendent reality; this reality is (classically) regarded as atomistic; and no teleological language of "goals" or "intentions" is permitted (*SC*, pp.7-8/5-6).[5] Most importantly, on the classical view, "physical agents cannot affect the organism by their properties of *form* [*de forme*], such as movement, rhythm, and spatial arrangement" (*SC*, p.8/6). Such properties are classically regarded as unreal: there exist only juxtaposed atoms. This approach (variably called "realistic analysis," "causal thinking," "scientific representation") is summarized in the ontological claim that objects in themselves exist "*partes extra partes*" (*SC*, pp.3/1, 93/102, 161/174, 202/218). Thus:

> [A]s soon as one... tries to construct a scientific representation of

[5]Citations provide the page-number in Fisher's (1963) English translation, followed by the page number in the later French editions (those with a preface by de Waelhens).

> the organism... one is led to the classical theory of the reflex–that is, to decomposing the excitation and the reaction into a multitude of partial processes which are external to each other in time as well as in space... the reflex would be... a 'longitudinal' phenomenon. It is the action of a defined physical or chemical agent on a locally defined receptor which evokes a defined response by means of a defined pathway (*SC*, pp.8-9/6-7).

Chapter I then discusses a (large) number of cases where classical accounts of (even) reflex behavior fail. I clarify (§§2.1–2.4) four criticisms of classical theory that involve or foreshadow engagement with the Gestaltists, then discuss (§2.5) Merleau-Ponty's conclusion of Chapter I.

2.1. The 'Stimulus'

Against the atomist, forms *at a moment* have an overall, qualitative effect, irreducible to a sum of basic, atomic stimulations (*SC*, pp. 11-12/9-10). Further, forms (e.g., "rhythms") of stimulation *over time* are effective, which undermines treating the organism as passive: the rhythm of stimulation I undergo when I "follow" a spot of light depends on *my engagement with it*. The organism actively co-constitutes effective stimulation, *via* "its proper manner of offering itself" to stimulation (*SC*, pp.13/11). Merleau-Ponty sometimes (though rarely) describes this as "circular causality [*causalité circulaire*]" (*SC*, pp.15/13, 17/16, 137/148). I revisit it on pp.13, 18 & 22 below.

Merleau-Ponty's first reference to the Gestaltists occurs here. The atomist

proposed to treat reflex-elicitations as "longitudinal phenomena" (see above). If we wanted a view on which "a distinct operation correspond[s] to each stimulus," then the fact that whole *forms* are effective stimuli would lead us to posit corresponding *forms* of responsive activity in the organism. We would posit "transverse phenomena" in the nervous system: interactions between anatomical pathways corresponding to the interactions between non-independent 'parts' of whole stimuli (*SC*, pp.14/13, citing Wertheimer 1912).

2.2. The Elaboration of Stimuli

To explain cases where behavior appears *active* and *adaptive*, the atomists often adopt a "hierarchic conception" of the nervous system (*SC*, p.19/17). Some posit cerebral regulation (e.g., inhibition) of reflexes, or top-down coordination or integration (perhaps merely associative) which blends automatic reflexes into new responses (*SC*, p.18/17). Merleau-Ponty regards these as *ad hoc* constructions with no empirical grounding. A less theory-driven approach admits that "each reflex presupposes an elaboration of stimuli in which the whole nervous system is involved," rather than dividing it into subordinated and regulating parts (*SC*, p.22/19, citing Goldstein 1934).

To characterize this "elaboration" of stimuli, Merleau-Ponty says: "Everything happens as if [the organism] oscillated around a preferred state of excitation which it is the law of our reflexes to maintain and which prescribes to each stimulus its effect" (*SC*, p.28/27). He cites Koffka (1935) for a similar description of a "state of equilibrium" the whole nervous system works to

maintain (*SC*, p.28/28). Merleau-Ponty offers this description as an *analogy* with physical equilibria, and its aptitude as an analogy incurs no physicalistic ontology of the organism (*SC*, pp.27/26-27). The key point is that the atomist's ontological presuppositions prevent adequate descriptions of such holistic phenomena. Merleau-Ponty concludes:

> Thus the excitation [of the nervous system] will never be the passive registering of an external action, but an elaboration of these influences which in fact submits them to the descriptive norms of the organism (*SC*, p.28/28).[6]

2.3. The Problem of Order

The apparent adaptiveness of behavior undermines classical conceptions of fixed, automatic reflex circuits (*SC*, pp.29-32/28-32). Merleau-Ponty's claims here suggest a title for this problem which he deploys later: "the problem of order" i.e., the problem of explaining the orderly and adaptive appearance of phenomena (e.g., of behavior) (*SC*, p.50/53). The atomist can again posit hierarchic regulation to guide behavior (*SC*, pp.31/31). This is again *ad hoc*. But things are worse for the atomist:

> [T]he classical conception is maintained [by positing regulation] only if the regulation is *localized* in certain devices comparable

[6] A footnote here reads: "Concerning the facts which, in the physiology of perception, justify this hypothesis, cf. *infra*, Chapter II' (*SC*, p.28/28 *fn.*53/3, printed on p.228/28). As I read *SC*, it has been shown already that a description of *behavior* reveals the organism as actively co-constituting effective stimulation; the footnote foreshadows another kind of active contribution, uncovered by Ch.II's description of *perception*. See §3.2 below.

> to reflex arcs. But it does not seem to be exclusively bound up with cerebral activity... nor does it seem explicable moreover in each place by automatic devices of association or disjunction... Depending on the case, each part of the nervous system can in turn appear to be inhibiting or inhibited...
>
> In the final analysis, inhibition and control do not explain nerve functioning. They themselves presuppose a process which regulates their distribution (*SC*, pp.31-32/31, my emph.).

Not only is a hierarchic conception *ad hoc*, it fails to account for the phenomena of form or order in nerve function (and thus behavior). The data (which I omit) suggest there is no reflex-like "control circuit" that can *automatically* regulate lesser circuits. The concept of the reflex fails to describe the nervous system in the first attempt, so it is re-posited in the form of an automatic control circuit; this too fails, and the classical theorist must again scramble to actually *apply* the concept. Merleau-Ponty quips that this strategy will

> have to be reinitiated indefinitely; and the solution will always be deferred, never furnished, until the moment when a principle which *constitutes* the order [*un principe qui* constitue *l'ordre*] instead of undergoing it has been introduced... (*SC*, p.33/33).

2.4. Gestalt Theory

No amount of tweaking will save atomism (*SC*, pp.33-46/33-48). In making this claim, Merleau-Ponty makes sustained engagement with the

Gestaltists. Koffka (1935) is cited continuously for apt descriptions of the nervous system as a field of forces which seeks equilibrium against perturbation (*SC*, pp.33-43/33-45). Again, such analogy incurs no physicalistic ontology, it only speaks against atomistic ontology. Note a phrase Merleau-Ponty wields here: "Everything takes place *as if* [*Tout se passe comme si*]" the Gestaltists' descriptions were correct (*SC*, pp.36/36, 37/37; my emph). Thus Merleau-Ponty himself happily employs 'physical models.' In various pathologies the nervous system adapts, exhibiting a "redistribution of functions" which, on a classical view (one function per anatomical device), is

> not comprehensible. It becomes so only if the properties of each [functional unit] are assigned to it, not according to established local devices, but according to a flexible process of distribution comparable to the division of forces in a drop of oil suspended in water (*SC*, pp.41/42-43).

Again, this analogy incurs no physicalistic ontology of the nervous system.

Goldstein (1934)[7] is continuously cited to clarify how the *functional* significance of behavior cannot be determined by partative anatomy, (*SC*, pp.42-45/43-47). Organism-parts do not normally respond to isolated stimuli. Instead whole organisms respond to complex and meaningful situations (*SC*, pp.44/45-46). In the artificial arrangement of the lab, an experimenter might succeed in eliciting a localized response to an isolated stimulus. This shows

[7]Some commentators count Goldstein among the Gestaltists (see e.g. Welsh 2006, p.549.) Others note he did not regard himself as such (see Carman & Hansen, 2005, p.12).

that the reflex exists as a "very special case of behavior," but it is a kind of pathological case, (*SC*, pp.45-46/47), and "*it is not by means of it that the remainder*" of behavior can be understood (*SC*, p.46/48). Merleau-Ponty summarizes this by saying that the reflex is not a "*biological reality*" – it is not the proper object of a science of life and behavior (*SC*, p.46/48).

2.5. Concluding Chapter I: The Open Ontological Question

Merleau-Ponty has followed the Gestaltists, employing a number of physical models to illustrate how atomists misunderstand the nervous system. Köhler (1920) had shown that some physical systems (what he called, emphatically, physical *Gestalten*) exhibit tendencies similar to the nervous system: "these systems evolve to a state of privileged equilibrium and there is a circular dependence [*dépendance circulaire*] among local phenomena" (*SC*, p.47/49). The Gestaltists' insight lies in bringing *forms* into the discussion:

> [T]he 'forms,' and in particular the physical systems, are defined as total processes whose properties are not the sum of those which the isolated parts would possess* (*SC*, p.47/48, mentioning von Ehrenfels but citing Köhler 1920)[8]

This is Merleau-Ponty's first explicit definition of "form." It is borrowed from the Gestaltists, and it is applicable to physical systems. Again it is emphasized that no physicalistic reduction is incurred here:

[8]In passages such as this, an asterisk marks where Merleau-Ponty footnotes a Gestaltist.

> Whatever the fate of Koehler's models, the analogy on which they are founded exists and we can consider it as established. We must still investigate what it is which constitutes the distinctive character of physical forms and determine whether the reduction of 'physiological forms' to 'physical forms' can be accepted in principle (*SC*, p.47/50)

Thus the first Chapter of *SC* cites the Gestaltists' concept of "form" approvingly, so as to adequately describe the nervous system and orderly behavior. We have a negative claim against atomistic ontology, but there remains an *Open Ontological Question* regarding how to positively understand the being of forms. In particular, as this passage shows, no "anti-reductive" conception of the being of forms has yet been clarified.

In the remainder of Chapter I, Merleau-Ponty resists the objection that the category of "form" is anthropomorphic (and thus somehow inadmissible in a science of behavior) (*SC*, pp.49-50/52-53, 51/54). He also argues that the category of "form" cannot be discarded by taking up a more "functionalistic" and less "anatomical" orientation in physiology (*SC*, pp.47-49/50-51; 50-51/53-54). I clarify this latter point in ending discussion of Chapter I.

The functionalists[9] seek to solve the "problem of order" (see p.8 above) by positing a temporary synchronization of reflex circuits' operations, which

[9]Note that the "functionalism" of, say, James and Dewey in the early 20th century is not to be casually read as synonymous with the functionalism of, say, Fodor and Pylyshyn in the later 20th century.

causes the unfolding of orderly behavior (*SC*, pp.48/50-51). This is a hierarchic account, in which some regulating unit of the nervous system causes the synchronization (*SC*, pp.48-49/51). Merleau-Ponty is skeptical: the puzzle is not to find the right *kind* of regulation (inhibition, control, synchronization) to *cause* order. Instead, he remarks, "the problem of order has no meaning if we make it a second problem of causality" (*SC*, p.50/53). Functionalistic and anatomical accounts face the same, *in principle* difficulty. A causal relation can at best *propagate* pre-existing order, but what we need is "a principle which *constitutes* the order instead of undergoing it" (*SC*, p.33/33, original emph.). It is the *constitution* of order which must ultimately be explained.

It is in this light that we must understand Merleau-Ponty's notion of "circular causality" (see p.6 above). This was originally introduced in countenancing the organism's co-constitution of temporally-extended forms (or rhythms) of stimulation. To introduce the notion, he says:

> Since all the movements of the organism are always conditioned by external influences, one can, if one wishes, readily treat behavior as an effect of the milieu... since all the stimulations which the organism receives have in turn been possible only by its preceding movements which have culminated in exposing the receptor organ to the external influences, one could also say that the behavior is the first cause of all the stimulations (*SC*, p.13/11).

Circular causality, so-construed, *cannot solve the problem of order*. It matters little whether one looks for causes outside the organism, inside the organism, or both. The in-principle problem is to account for the *constitution* of order, and this cannot be done by any more elaborate causal analysis – neither a "functionalist" nor a "circular" one. The active role of the organism in offering itself for stimulation highlights a set of *instances* of orderly behavior, of the sort that all causal analyses fail to explain. Here I foreshadow disagreement with Thompson (2007) and others, which I revisit in §4.1 below.

I thus reject Bannan's claim, that Merleau-Ponty "makes his entire case in every chapter, the advance in each being primarily a matter of shifting emphasis" (1967, p.31). Much work remains undone: characterizing the being of forms, accounting for their constitution, and critiquing the Gestaltists.

3. Chapter II

Discussion of Chapter II will be brief. I skip discussion of Pavlov's reflexology (*SC*, pp.52-60/55-64), and of how cortex underwrites higher behavior (*SC*, pp.62-76/66-84). This is another round of "criticizing psychological and physiological atomism" (*SC*, p.76/84). I pick up the thread when Merleau-Ponty turns to examine "under what categories the phenomena brought to light by this critique can be conceptualized positively" (*SC*, p.76/84).

3.1. Gestalt Theory in Chapter II: Overview

Unsurprisingly, the category of *form* is invoked to characterize the phenomena at hand. The attempt has again been made to simply "*correct*

atomism by the notions of *integration* and *coordination*" (*SC*, p.76/84). As above, no hierarchic, *causal* account can solve the problem of the constitution of order (*SC*, pp.79/87; 87-88/96-97). Merleau-Ponty again cites the Gestaltists to underscore the problem (cf. *SC*, p.77/85, citing Koffka 1935). In the passage below, the concept of form highlights what causal analysis fails to explain. Here I will reproduce Merleau-Ponty's footnote, marking where it appears in-text (as footnote 99 in the English):

> It is not *because* two retinal excitations are integrated into the same associative circuit that their mental correspondents receive the same function in perceived space; rather it is this common function which designates them to be linked by an associative circuit.[99] Coordination itself appears as a result: the effect of a phenomenon of structure or 'form' (*SC*, p.79/88, original emph.).

Again, only a regress-ending *constitution* of order or form can account for orderly phenomena. The very important footnote 99 here reads:

> We leave open for the moment the question of whether this apparent finality of nerve functioning is carried by [*est portée par*] a physiological phenomenon of structure, as is thought by Gestalt psychology, or whether (cf. *infra*, Chapter III) it must be admitted very simply that there is no physiological analysis of the constitution of the [visuo-]spatial field (*SC*, *fn.*99/1, printed on p.237/88).

The *Open Ontological Question* remains open. Specifically, it is not settled whether an appeal to physiological forms can account for phenomena of order in perception. This, we are told, is the Gestaltists' view, and we see hints of Merleau-Ponty's "anti-reductivism" (see §1). Yet the footnote suggests Chapter II contains no anti-reductivist arguments.

And we find no such argument. Koffka is cited approvingly to illustrate problems for views of cortical function which fail to account for the holistic character of perception, the roles of contrast and constancy in perception, and the acquisition and exercise of flexible behaviors (*SC*, pp.77-83/86-91; 95-97/104-106; 100-101/109-111; 108/118; 123/134; citing Koffka 1921, 1930, 1932, 1935). Goldstein is again cited to clarify the importance of the whole organism (not any anatomical part of it) in normal behavior (*SC*, pp.62-75/67-83; 78/87; 90-91/100-101; citing Goldstein 1927, 1934). Köhler's work is cited extensively to clarify the three "forms" of behavior (syncretic, amovable, and symbolic) (*SC*, pp.95-101/104-111; 106/116; 112-123/122-133; citing Köhler 1915, 1918, 1920, 1921). Throughout, the Gestaltists' notion of form is again wielded to clarify atomistic errors. And so I shall not review these points in any further detail (despite the centrality of, e.g., the three forms of behavior to a full understanding of *SC*). There are, however, two developments in Chapter II worth reviewing for my purposes: further clarification of the problem of order (§3.2), and a negative characterization of the being of forms (§3.3).

3.2. The Proper Reality of Nerve Function

Chapter I discussed organisms' active role in bodily orienting to the environment, co-constituting the effective form of stimulation (especially its temporal form or rhythm). In Chapter II Merleau-Ponty extends this account. He reviews well-known results of Gestalt psychology concerning the spatial perception of figure-ground organizations, and similar phenomena in language comprehension and color perception. In each case, the *form* of effective stimulation escapes atomistic analysis. None of these kinds of perception can be understood in terms of "the putting into action of pre-established apparatuses which the stimuli, in virtue of their objective properties [*qua* 'atoms'], would release from the outside" (*SC*, p.88/99). Instead:

> The physiological process which corresponds to the perceived color or position must be improvised, actively constituted at the very moment of perception. Thus, function has a positive and proper reality... And physiological analysis, if it wants to grasp the true functioning of the nervous system, cannot recompose it from the effects which psycho-physiology obtains by applying isolated stimuli to receptors. (*SC*, p.88/99).

The reality of function established here extends our understanding of the organism's active role: the "elaboration" of stimuli is a contribution of the organism.[10] One *could* try to understand this by extending Merleau-Ponty's

[10]See *fn.*6 above.

conception of "circular causality" from cases where overt bodily movement influences stimulation, to cases where the nervous system covertly contributes to the form-ation of effective stimuli. But as before, circular causation is not Merleau-Ponty's positive account. The key point is not that the organism is dynamically interacting with the "real" environment to constitute effective forms of stimulation. The key point is that this process cannot be adequately understood in causal-realistic terms. Instead, *order* – in both the effective stimulus and the nervous system – must be *constituted*, *de novo*, in an improvisation which causal-realistic analysis (even a 'circular' analysis) fails to apprehend. An account of this improvisation is not provided in Chapter II.

3.3. The Ambiguities of The Analyses

In Chapter II, Merleau-Ponty frames this point by saying that all his claims regarding forms are ambiguous. Mid-chapter, he clarifies one ambiguity. We might hold a realistic conception of forms, regarding them as entities of the sort science aims to discover. This is the Gestaltists' view: they maintain that physiological investigations reveal nerve functioning as *really*, in-itself, "a process of the 'figure and ground' type" (*SC*, p.91/101, citing Goldstein 1927). On this reading, the foregoing physical models of forms (e.g., in terms of forces and equilibria) are not just analogies, but rather accurate descriptions of physiological forms: "on the condition that 'form' is introduced in nerve functioning, a parallelism or a rigorous 'isomorphism' could be maintained" between perception and physiology (*SC*,

p.92/101, citing Koffka 1935). An alternative to this realistic view is a traditional, idealistic account of forms as *ideas*, constituted in and for scientific cognition (*SC*, p.93/102).

The idealistic view is not here endorsed against the Gestaltists: we can only clarify the being of forms "after a stricter analysis of the notion of form" (*SC*, p.93/102). The *Open Ontological Question* remains open. It remains open throughout the remainder of Chapter II, as Merleau-Ponty points out in its conclusion. He takes himself to have shown that "behavior is not a thing, but neither is it an idea" (*SC*, p.127/138). One might think he has rejected the Gestaltists' realistic, ontological commitment to "physiological forms." But he continues:

> But precisely for this reason the notion of form is ambiguous. Up until now it has been introduced by physical examples and defined by characteristics which made it appropriate for resolving problems of psychology and physiology. Now this notion must be understood in itself, without which the philosophical significance of what precedes would remain equivocal (*SC*, pp.127-128/138).

Merleau-Ponty takes Chapter II to show, negatively, that forms are neither the *atomists'* things, nor ideas: we must surpass this traditional dichotomy. Yet we have no account of *how* to do so, nor any *positive* account of the being of forms. For example: nothing has shown that the way the Gestaltists countenance "physiological forms" is not *precisely* by countenancing entities

which are neither things nor ideas, nor that their account is unsuitable.

4. Chapter III

Chapter III resolves these issues. At the outset, three interim conclusions are reiterated. First, the notion of a "stimulus" is ambiguous. It can refer to (*a*) "the physical event as it is in itself" (as classically construed, i.e., lacking *form*) or (*b*) "the situation as it is 'for the organism'" (which classical analysis overlooks) (*SC*, p.129/139, citing Koffka 1935).

Second, "behavior" is correspondingly ambiguous. It can refer to either (*c*) "'geographical behavior'—the sum of movements actually executed by the animal with their objective relation to the physical world," (a classical view that misses the *orderly* character of behavior) or (*d*) behavior "properly so-called—these same movements considered in their internal articulation and as a kinetic melody gifted with meaning" (which classical analysis cannot account for) (*SC*, pp.130/139-140, again citing Koffka 1935).

Third, there can be no adequate causal-hierarchic account of behavior, in which some lower-level, automatic responses are first possessed, "to which an acquired significance would subsequently be attached" in complex behavior (*SC*, p.130/140, again citing Koffka 1935). A causal analysis of the "acquisition" of significance is conceptually and ontologically inadequate, since it cannot account for the *constitution* of significance, order, form, etc.

Note that Koffka is credited with recognizing all three points: no critique of the Gestaltists has yet been clarified. After this review, Merleau-Ponty is

ready to answer the *Open Ontological Question*, characterizing the being of forms. We shall not find here a full solution of the problem of order: the constitution of order is not fully explained in *SC*. Instead, we find clarification of where order inheres, or a clarification of what it is whose constitution is at issue. I first (§§4.1&4.2) examine two complementary, positive characterizations of "form" which Merleau-Ponty offers by way of introduction. I then (§4.3) examine his preliminary *sketch* of a critique of the Gestaltists. All this occurs in the Introduction to *SC* Ch. III, and I argue that it does not properly justify a critique of the Gestaltists, but merely foreshadows what comes later in the chapter. To clarify how the critique of the Gestaltists is justified, we must examine Merleau-Ponty's discussions of the being of physical (§4.4), and vital forms (§4.5).

4.1. Form as a Circular Process

One positive characterization of forms (of behavior) is the following:

> Situation and reaction are linked internally by their common participation in a structure in which the mode of activity proper to the organism is expressed. Hence they cannot be placed one after the other as cause and effect: they are two moments of a circular process [*d'un processus circulaire*]... If behavior is a 'form,' one cannot even designate in it that which depends on each one of the internal and external conditions taken separately, since their variations will be expressed in the form by a global and indivisible

effect (*SC*, pp.130-131/140-141).

Some invoke the notion of circular *causality* to understand the "circular *process*" described here. Carman (2008, p.88-89) and Dreyfus (2005, p.132) explicitly suggest reading this passage alongside Merleau-Ponty's early remarks on circular causality in discussing the reflex (*SC*, p.15/13 – p.6 above).

This is an error. The "circular process" between "situation" and "reaction" is a relationship of *meaning* and *significance* between (*b*) and (*d*), not a relation between (*a*) and (*c*). Prior to this moment, the notion of "circularity" (as in "circular causality") has not marked any in-principle limit of realistic-causal analysis. True, classical accounts presupposed a linear causal chain from "real" stimulus (*a*) to passive organism (*c*). But nothing prevents recognizing a kind of circular causality between them: it is granted later that the classical view maintains that "when one speaks of reciprocal action [*d'action réciproque*] between two terms, it can be reduced to a series of uni-directional determinations" (*SC*, pp.160-161/174). This is precisely the notion of circular causality Merleau-Ponty invoked in describing the reflex (*SC*, p.15/13 – p.6 above). The problem isn't that classical accounts cannot recognize circular causality, so-construed, it is that circular causality cannot account for the *constitution* of form or order (cf. pp.13&18 above). Ch. III's description of the being of forms as a "circular process" cannot plausibly be understood as circular *causality*, in this sense.

Now this classical gambit to understand circular causality is fairly weak: circularity is reduced to a series of linear relations. Some may want a more

robust notion of genuinely non-linear causality. Evan Thompson implicitly invites us to treat the notion of "causation" as ambiguous between (*i*) the classical, linear conception and (*ii*) a revised, non-linear conception of "circular causation" elaborated in current-day Dynamical Systems Theory (DST). Thompson details (*ii*) in his chapter 3. He then nominally links DST's notion of circular causation to *SC*'s early claims about circular causality (2007, p.68).[11] On Thompson's reading, "circular causality" is just another name for what Merleau-Ponty calls a "dialectical relation" (2007, p.69). This is an error, and seeing why helps us clarify Merleau-Ponty's description of a "circular *process*" in the passage above. This is Merleau-Ponty's first attempt to positively characterize form. To read it as circular *causality* (of any sort) is a category mistake: "the problem of order has no meaning if we make it a second problem of causality" (*SC*, p.50/53). Merleau-Ponty thinks we need no new *kind* or *concept* of causation, but rather a wholly novel, acausal co-dependency involved in the *constitution* of forms. We are told later that the whole aim of clarifying the being of forms is to give "positive content to acausality" (*SC*, p.154/167). Merleau-Ponty's notion of a *dialectic* is precisely how he aims to understand acausal co-dependency: as an exchange

[11] Thus Merleau-Ponty does *not* stress the importance of what Clark (1998, pp.171-172) calls "continuous reciprocal causation." Merleau-Ponty would have difficulty making sense of Gallagher & Zahahi's (2013, p.157-158) claim that an "objective piece of engineering" could "generate" a new experience. And Merleau-Ponty's distinction between cause and form, between things and phenomena, cautions precisely against any quick route to Rowlands' (2010, p.196) thesis of the "amalgamated mind"– see p.83-84 – so long as it is understood as an amalgam of realities.

between meaningful entities which co-determines their intelligibility or significance (see, e.g., *SC*, p.148/161). He views this as a circular process, but not a causal one: it is "circularity" which is ambiguous, not "causality."

Thompson later recognizes that in *SC*, the dialectical moments of forms are not classically "real" things, but rather *meaningful* entities (2007, p.69). He does not see that, for this very reason, Merleau-Ponty's own conception of "circular causality" is irrelevant to the dialectical "circular process" described in *SC* Ch. III.[12] I am not objecting to Thompson's own account, but emphasizing its novelty: when Merleau-Ponty calls form (e.g. of behavior) a "circular process," *he* does not intend to invoke causality, but rather a dialectical, *meaningful exchange* (e.g., between organism and milieu). Understanding this causally would be novel, because it is not so-understood in *SC*. Thompson's own view may be correct – but not his reading of *SC*.[13] Thompson upholds the irreducibility of behavior to physical events in the brain by treating it as a structure which "emerges" from "circular causation" (see his chapter 3). Merleau-Ponty, we shall see, takes a different route.

[12]Madison at first misleadingly suggests that the "dialectical... nature of form" can be clarified with attention to Merleau-Ponty's claims about "circular causality" in discussing the reflex (1981, pp.8-9). He later clarifies the more correct reading of Merleau-Ponty, in discussing human forms of behavior: the relevant circularity involves "*meaningful* structures," not causal, "*energetic* forces" (1981, p.10). On my reading of *SC*, this dialectical view of forms of behavior applies to all behavior – the "reflex" only appears in interruption of the normal dialectic between organism and milieu, and even then only because it is permitted to appear by the total activity of the organism (*SC*, p.150/163).

[13]Note that notion of "circular causality" is deployed *nowhere* in any of Merleau-Ponty's later works. He speaks instead of "circular forms" (*PP* p.272), "circular physiognomies" (*PP* 287, 453; 1973, p.36), of a "circular physiognomy which no intellectual genesis nor physical causality explains" (1968, p.271). For more on this point, see *fn.*21 below.

4.2. Form as Bearer of Quantity, Order, Value

A second characterization of form is provided. Merleau-Ponty gives an initial division of the three kinds of forms he will discuss later in Ch. III (physical, vital, and "human" or "mental") (*SC*, pp.131/141). He then says:

> [T]he notion of form would permit a truly new solution. Equally applicable to the three fields which have just been defined, it would integrate them as three types of structures by surpassing the antinomies of materialism and mentalism, of materialism and vitalism. Quantity, order, and value or signification, which pass respectively for the [unique] properties of matter, life and mind [*l'esprit*], would be no more than the dominant characteristic in the order considered and would become universally applicable categories. (*SC*, pp.131/141; translation amended).

The being of every form is positively characterized as possessing quantity, order, and value. Order in physical systems is clarified by comparison to organisms: "in a soap bubble as in an organism, what happens at each point is determined by what happens in all the others. But this is the definition of order" (*SC*, p.131/141-142). An illustration is also provided of how *value* obtains in physical and vital systems:

> In the internal unity of these systems, it is acceptable to say that each local effect depends on the function which it fulfills in the whole, upon its value and its significance with respect to the

> structure which the system is tending to realize* (*SC*, p.131/142, citing Koffka 1935).

The feature of value or signification would license "the use of a finalistic vocabulary" across all three domains – we can objectively describe any system's *tendency* to realize a structure as its "preferred behavior" (*SC*, p.51/54). Note that Merleau-Ponty countenances vital forms. We have not yet clarified the critique against the Gestaltists' conception of physiological forms, foreshadowed in Chapter II (see his fn.99 on p.15 above).

4.3. A Sketch of the Critique of the Gestaltists

If form is a dialectical process exhibiting quantity, order, and significance, Merleau-Ponty believes it will enable a common understanding of physical, vital, and mental phenomena. Gestalt theory has partly anticipated this, and "seeks to expand into a philosophy of form which would be substituted for a philosophy of substances" (*SC*, pp.132/142-143). Gestalt theory has not executed this expansion since it would be inconsistent with "the realistic postulates which are those of every psychology" (*SC*, p.132/143). This is the most explicit critique of Gestalt psychology Merleau-Ponty has offered thus far. His statements about the dialectical (acausal) being of forms indicate why he regards a philosophy of form as inconsistent with realistic postulates. But I suggest the critique is not *justified* here: it is merely foreshadowed. Chapter III's introduction identifies an inconsistency in the Gestaltists' claims, which I shall clarify. But the Gestaltist has a way out:

at this point in *SC*, no objection is made which "sticks" to the Gestaltist, in part because Merleau-Ponty has not justified his dialectical view of forms.

On one hand, the Gestaltists have advanced the view that there are physical, vital, and human forms. If this is so:

> [M]atter, life and mind must participate unequally in the nature of form... By definition, it would be impossible to conceive of a physical form which has the same properties as a physiological form and a physiological form which was the equivalent of a mental form. (*SC*, p.133/143).

If they are distinct, physical, vital, and human forms must possess quantity, order, and significance in different ways. Though they fall under the *genus* of form, "their distinction must once more be accounted for by means of a structural difference" (*SC*, p.132/143). We shall see this borne out below. For now, the claim is that Gestaltists have intended to uphold the distinction.

On the other hand, the Gestaltists have supposed "'that in our *ultimate* explanations, we can have but *one* universe of discourse and that it must be the one about which physics has taught us so much'" (*SC*, p.133/144, citing Koffka 1935, p.48). This is commitment to a realistic, asymmetric ontology, with physical reality as the all-encompassing foundation. The Gestaltist maintains that all allegedly non-physical forms are grounded in *isomorphic* physical forms. In this way, physical "form... is placed among the number of

events in nature; it is used like a cause or real thing" (*SC*, pp.136-137/147).[14]

> [T]he psychology of form does not believe it has gone beyond the notion of the physical world as *omnitudo realitatis* because structures are already found in it... Value predicates and immanent signification—without which an objective definition of behavior cannot be made—would be only the expression in a human language... of structural processes in the nervous system, and these latter in turn would represent only a variety of physical forms (*SC*, pp.134/144).

The Gestaltist risks self-contradiction. A radical philosophy of *form* is a "philosophy which denies itself material distinctions," as the Gestaltists sometimes recognize: "'It matters little what material the particles of the universe are made of; what counts is the type of totality...'" (*SC*, p.136/146, citing Wertheimer 1924). Then "'isomorphism' in the philosophy of form is an identity" (*SC*, p.136/147). The Gestaltists have not recognized that "the originality of biological and mental structures [cannot] be really conserved... while at the same time founding them on physical structures" *via* isomorphism (*SC*, p.136/146). This, then, is the Gestaltists' implicit, reductive thesis. It is in tension with their own commitment to upholding the distinction between physical, vital and human forms.

[14]This passage is often cited as the locus of *SC*'s anti-reductivism. See, e.g., Bannan (1967, p.43), Embree (1980, p.109), and (Flynn, 2011, §1). Welsh (2006, p.539) gives voice to a similar view, citing Madison (1981, p.4).

Now the Gestaltist might accept the result, abandoning the distinction between physical and non-physical forms (*SC*, pp.136/146-147, citing Koffka 1935). *This resolves any contradiction in Gestalt theory.*[15] Nothing said thus far precludes this view: the notion of form has not yet been appropriated from the Gestaltist, by *showing* what makes physical, vital, and human forms non-isomorphic, justifying their distinction. Merleau-Ponty can only hint:

> We do not think that the notion of Gestalt is pursued to its most important consequences... in these materialist conclusions... [W]e would like to return to the notion of form, to seek out in what sense forms can be said to exist 'in' the physical world and 'in' the living body... (*SC*, pp.136-137/147).

4.4. Structure in Physics

Merleau-Ponty had permitted the notion of form to be "defined like that of a physical system" (*SC*, p.137/147: see p.11 above). Now he initiates a critique of the Gestaltists' view of physical forms, seeking to promote his own dialectical conception of the being of forms. The criticism involves two claims concerning the relationship between forms and laws. As summarized later, the first claim involves "insisting, against positivism, on the inclusion [*l'enveloppement*] of law in a structure" and the second claim involves "insist[ing] on the inclusion [*l'enveloppement*] of structures in laws"

[15] And for this reason, none of the commentators mentioned in the previous footnote get to the core or Merleau-Ponty's critique by emphasizing this point alone.

(*SC*, p.141/152). I discuss each in turn (§§4.4.1&4.4.2), then discuss how Merleau-Ponty wields the resulting view to critique the Gestaltists (§4.4.3).

4.4.1. The Inclusion of Law in a Structure

Merleau-Ponty does not restrict the Gestaltists' notion of physical forms to a few cases: it is extended to the whole domain of physics. Generally, a physical system is not a substance with absolute properties, but a dynamic, "functional individual" (*SC*, p.138/149). Correspondingly, physical laws can only be said to describe "the properties of relatively stable wholes" (*SC*, p.139/149). We formulate laws by observing "partial totalities" (transiently stable forms) which come and go. As forms stabilize and dissolve, we observe *qualitative discontinuities* in the "flow of things [*un cours des choses*] which supports the laws [but] which cannot be definitively resolved into them" (*SC*, p.139/149). As a result:

> We cannot even pretend to possess genuine "causal series," the models of linear causality, in our established science. The notion of causal series can be considered a constitutive principle of the physical universe only if the law is separated from the process of verification which gives it objective value. The physical experiment is never the revelation of an isolated causal series (*SC*, p.139/150).

Classical causality consists of unidirectional relations between isolated events. On Merleau-Ponty's view, there cannot be laws of such causation, *since there*

are no such isolated physical events. To think otherwise involves two positivistic errors.

A first positivistic error consists (as Quine and Duhem also taught us) in thinking that any experiment could ever verify a *single* law; instead "a system of complementary laws" is at stake in any experiment (*SC*, p.139/150). Rouse (2005) regards this as central to *SC*'s argument against the Gestaltists. In Rouse's view, the Gestaltists misunderstood that a system of laws *is itself* a form in which each law (as "part") has no independent standing: a system of laws thus "cannot be regarded as an object existing in itself but must be disclosed to a perceiving consciousness" (2005, pp.265-266).

I find no support in *SC* for deploying the notion of a "form" in this way. It is easy to see that Merleau-Ponty upholds the basic claim Rouse attributes to him: that no isolated law has any epistemic import on its own. A body of scientific knowledge only possesses empirical significance as a whole. However, Merleau-Ponty never quite frames this by saying that a body of laws is *itself* a form. What Merleau-Ponty claims instead is that "laws... refer us back to events in interaction, to 'forms' from which they should not be abstracted" (*SC*, p.140/150).[16] It is not a body of laws which are a form, rather it is the entities in laws' scope which are to be understood as forms. A second positivistic error is to treat *the purported entities in a*

[16]Rouse eventually discusses this point – see his (2005, p.283) – but only in connection with *PP*, not as part of *SC*'s engagement with the Gestaltists. Welsh (2006, p.539) also gives voice to this view, citing Geraets (1971, p.49)

law's scope as independently existing, stable individuals, instead of as only *dependent "parts"* of *transiently stable* wholes. The fact that no law has an isolable epistemic import arises from fact that there are no fully-isolable physical events: there are only transiently stable physical forms. Only a set of laws deployed in unison can confront the discontinuous flow of physical forms arising and dissolving: any single law, taken in its empirical application and significance, "cannot be detached from concrete events where it intersects with other laws" (*SC*, p.139/150). All law-governed events exist only "within a *de facto* structure," namely the concrete, historically-unfolding structure of a transiently stable form (*SC*, p.141/152). This is called the inclusion of laws in structure. It undermines an "atomistic" conception of laws' epistemic import, and of the being of the entities and processes they describe.

4.4.2. The Inclusion of Structures in Laws

Classical science "decomposes the reciprocal determinations internal to a physical system into separate actions and reactions" which it typically understands through a general mathematical formula whose variables can simply be filled-in with values drawn from the concrete situation (*SC*, p.141/152). Now the Gestaltists themselves have suggested that "the structural character of a process does not find its expression in mathematical physics" (*SC*, p.141/152, referring to Köhler 1920). Merleau-Ponty amplifies this point.

The issue (roughly) is that a mathematical formula cares nothing for where it is applied. An equation which lets us calculate the electrical charge

at a point in an ellipsoid conductor also lets us assign imaginary values to a point in an ellipse drawn on paper (*SC*, p.141/152). Merleau-Ponty holds that in applying any mathematical formula, scientists *presuppose* a (transiently stable) form which they attempting to model by representing just the relations which constitute that whole form. There is always *idealization* and *approximation* involved in applying formulas to forms, because the formulas (in their distinct "variables") treat the moments of a total process as if they were isolable. Yet the form is the intended target of knowledge:

> [M]athematical expressions... express precisely a physical phenomenon only if one conceives [*pense*] of them as laws of certain forms, of certain concrete wholes. Form... remains indispensable on the horizon of physical knowledge as that which is determined and intended by it (*SC*, p.143/155).

The empirical significance of any mathematical law(s) can only be specified in relation to the observable form(s) it aims to explain. Merleau-Ponty calls this the inclusion of structures in laws. When we succeed (to the extent we can) in attaining scientific knowledge of a form using laws, we always do so retrodictively. We are essentially wielding the laws to "reconstruct [*reconstituer*]" a transiently stable form which is already past; these reconstructed structures "function to complete a 'time' of the universe, the idea of which they presuppose" (*SC*, pp.142-143/154). To evaluate our success, we are referred back to the dynamically unfolding observable *form* of phenomena.

The form in question pre-dates the idealized scientific understanding of it. In Merleau-Ponty's view, the form in question can only be a *perceived form*: it "is not a physical reality, but an object of perception; without it physical science would have no meaning [*sens*], moreover, since it is constructed with respect to it and in order to coordinate it" (*SC*, p.143/155).[17]

4.4.3. The Combined View, Supplementation & Critique

Laws can only be given empirical content if they are regarded as approximate models of perceived forms, and can only explain anything concrete in the global context of the total, dynamic structure of the universe of physical phenomena. "The relation of structure and law in science is a relation of reciprocal inclusion [*un rapport d'enveloppement réciproque*]" (*SC*, p.141/152).

Now laws and forms are not (the atomists') *things*, and between them there are not *causal* relationships, but rather *dialectical* relationships of intelligibility. Laws make past forms intelligible, but laws are only intelligible in light of certain forms. Understanding the acquisition of scientific knowledge demands treating forms dialectically, as Merleau-Ponty suggested (§4.1 above): "Structure and law are therefore two dialectical moments and not two powers of being... Form is not an element of the world but a limit toward which physical knowledge tends and which it itself defines" (*SC*,

[17] *Contra* Thompson (2007, p.81), this follows from a mundane epistemology and semantics of science, not any implicit appeal to transcendental phenomenology. If Merleau-Ponty is right, it is hard to see how DST's new mathematical tools change anything in principle.

pp.142/153).[18]

The role of perceived forms in scientific cognition can make it difficult to distinguish them from ideas. The Gestaltists help clarify the unique kind of dynamic unity which perceived forms have, in contrast to ideas:

> That in the final analysis form cannot be defined in terms of reality but in terms of knowledge, not as a thing of the physical world but as a perceived whole, is explicitly recognized by Koehler when he writes that the order in a form 'rests... on the fact that each local event, one could almost say, 'dynamically knows' the others."* It is not an accident that, in order to express this presence of each moment to the other, Koehler comes up with the term 'knowledge.' A unity of this type can be found only in an object of knowledge... This unity is the unity of perceived objects. [Thus e.g.] A colored circle which I look at is completely modified in its physiognomy by an irregularity which removes something of its circular character and makes it an imperfect circle (*SC*, pp.143-144/155, citing Köhler 1920).

The last sentence indicates the different kinds of *intelligibility* which are characteristic of perceptions *vs.* ideas of objects. Whereas an "imperfect circle" is, in perception, a distinct whole-object compared to a "good circle,"

[18]Contrast Bannan (1967, pp.44-45), who says that a *law* is the limit toward which knowledge tends.

the idea of "circle" applies to each, accommodating (and slurring over) the perceived difference. In perception, "parts" interact such that a change in one "part" leads to a new perceived totality (such that the very notion of "parts" should not be taken to imply isolation and independence). The relation is a dialectical one: in perception, the *meaning* or *significance* of the whole alters when that of a part alters, and the meanings of parts are co-determined, and all this is only intelligible in contrast to the environment.[19] In (e.g., scientific) thought, we risk overlooking this holistic co-dependence, treating the change as an isolated alteration in a persisting whole. The intelligibility afforded by perception is more ambiguous and imprecise than that of ideas.

While the Gestaltists sometimes recognize the dialectical unity of perceived forms, they have misunderstood its importance. The foregoing analysis of the relationship between structures and laws informs the basic critique:

> It is from the universe of perceived things that Gestalt theory borrows its notion of form; it is encountered in physics only to that extent that physics refers us back to perceived things, as to that which it is the function of science to express and determine. Thus, far from the 'physical form' being able to be the real foundation of the structure of behavior and in particular of its perceptual structure, it is itself conceivable only as an object of

[19]To illustrate with duckrabbits: this bit of ink cannot be the rabbit's ears unless this bit of ink is the rabbit's nose, and the intelligibility of the whole requires contrast with its background. The ink on one side of the page does not *cause* any change in the ink on the other side, nor does the background *cause* any change in the figure.

> perception (*SC*, p.144/156).[20]

Advanced physical science reveals physical systems which have (or at least, approximate) the holistic features characteristic of transiently stable, perceived forms because the *empirical adequacy* of physics' laws consists in (approximately) explaining such forms. It is a positivistic error to assign to forms an existence as realities revealed *through* science, and to attempt to reductively explain the nature of perception as arising from them. Instead, the acquisition of scientific knowledge is only intelligible as a dialectical attempt to make previously-perceived forms more precisely intelligible:

> [T]he reference to a sensible or historical given is not a provisional imperfection; it is essential to physical knowledge. In fact *and by right* [*En fait* et en droit], a law is an instrument of knowledge and structure is an object of consciousness. Laws have meaning only as a means of conceptualizing [*penser*] the perceived world (*SC*, p.145/157).

This completes Merleau-Ponty's argument against the Gestaltists' conception of physical forms: they have misunderstood them as transcendent realities, revealed as science surpasses naïve consciousness, whereas instead,

[20]This is why I believe Rouse makes an error in claiming that a body of laws should *itself* be regarded as a form (see §4.4.1 above). We do not encounter form in a body of laws (as objects of thought), but only in objects of perception, to which the laws refer us back. Thompson suggests the notion of form should be "enlarged and enriched" (2007, p.86) by making it applicable beyond perception.

they are empirical *phenomena* we apprehend through naïve consciousness, whose explanation and intelligibility continuously guides scientific knowledge, lending empirical content to its laws. The approximate understanding of perceived forms acquired through science is not nothing, but we do not *discover* forms in science. Thus there can be no asymmetric "ontological" dependence of higher forms (e.g., of organismic behavior, or of perception) upon physical form, because physical forms exist only as objects of perception. The reductivist error rests upon a more fundamental, positivistic error of reification.[21] We risk precisely this kind of error if we confuse the dialectical being of forms for any kind of circular causality among real entities (cf.§4.1 above).

[21]Thus – at Merleau-Ponty is at pains to emphasize in Ch. IV of *SC* – circular causality, construed classically, is not even to be viewed as a necessary condition, enabling condition, or partial cause of the dialectical circularity of conscious (i.e., perceived) forms. One reason we have just seen for this is that "this physical" is the perceived physical phenomenon. Thus human consciousness is the "condition of possibility" for any (perceived) physical whole – not the other way around – and moreover, "there can be no question of a [classical] causal relation" between physical, vital, and human forms (*SC*, p.202/218). As we shall see more clearly in §4.5 below, it will not help to drag in the physico-anatomical nervous system as one *relatum* in a classical circular-causal interaction and treat this as a precondition for consciousness: nerve functioning is not to be understood merely physically, and (like physical forms) is inconceivable without borrowing the notion of form from perception (*SC*, p.192/207). On Merleau-Ponty's analysis, the living body and the nervous system are not "annexes of the physical world in which the occasional causes of perception would be prepared [but rather] are 'phenomena'" (*SC*, p.205/221). In any attempt to re-introduce circular causality (or any classical physical reality) as an enabling condition for consciousness, one simply "situate[s] themselves in a 'complete' and real world without realizing that perceptual experience is constituting with respect to this world" (*SC*, p.219/235). It remains true that physical forms – reconceived as *phenomena* of perceptual consciousness – play an important role in enabling the existence of higher forms and dialectics of animal and human behavior; but physical forms play this role precisely *qua* subordinated, *dialectical* unities, not as classical, circular causal systems (*SC*, see e.g., p.202-203/218-219). Whether any of this might (following Thompson 2007) be understood differently by invoking a non-classical conception of genuinely non-linear causality is again something I leave aside as incidental to Merleau-Ponty's own view.

4.5. Vital Structures

Merleau-Ponty's next task is to clarify how physical and vital forms are essentially non-isomorphic. The key is to distinguish the kinds of equilibria physical and vital systems maintain, and the activities whereby they do so.

A physical system responds to objectively real forces: despite their influence, the system tends toward mechanical-energetic equilibrium in a holistic alteration of its co-dependent 'parts' (e.g., Köhler's examples of the distributions of forces in electrical systems). If a system has movable parts, they may be deformed (e.g., a spring will change its shape under compression, and will return to its original shape when the force is removed). We can formulate general mathematical laws to describe all such 'behavior' of a given type (e.g., there are formulas describing the 'behaviors' of springs.)

With the organism, things are different. The organism contributes to its own effective stimulation, whether through overt bodily movement, or through its nervous system's covert elaboration of stimuli, investing them with significance *for itself* (cf. pp.6, 13, 18 & 22 above). The organism does not respond simply by momentarily deviating from, or snapping back to, any state of mechanical equilibrium along paths of least resistance. Instead, it responds selectively, exhibiting "preferred behavior" in a characteristic style unique to each individual, and in a sharply delimited subset of all the movements which are physically possible for the organism (*SC*, p.148/159).

One result is that no aspect of an organism's behavior can be understood in terms of merely mechanical-physical equilibria:

> ...Koehler [maintains] that preferred behavior is that involving the least expenditure of energy... [but]... the organism is not a machine governed according to a principle of *absolute* economy. For the most part preferred behavior is the simplest and most economical *with respect to the task in which the organism finds itself engaged*; and its fundamental forms of activity and the character of its possible action are presupposed in the definition of the structures which will be the simplest *for it*, preferred *in* it (*SC*, p.147/159, original emph.).

Merleau-Ponty summarizes this by declaring that the kind of equilibrium which an organism strives to maintain is not any mechanical-energetic, physical equilibrium. Instead, they strive to maintain a "vital equilibrium" which they determine for themselves (*SC*, p.147/160). The notion of "equilibrium" is ambiguous: it has two senses corresponding precisely to the ambiguities of "stimulus" and "behavior."

Another result is that there can be no *general laws* about organisms which have any significant empirical adequacy. Because each individual organism has its own style of preferred behavior, and constitutes its own vital equilibrium, organisms can be adequately "understood only by a norm [*une norme*], a certain transitive type of action which characterizes the individual" (*SC*, p.148/161). As I read it, the idea is that *ceteris* are never *paribus*: a classical, non-probabilistic law is always a *vicious* abstraction which deforms vital phenomena beyond recognition. Further, Merleau-Ponty maintains that un-

derstanding vital forms as dialectical is superior to shifting to a conception of probabilistic laws (which he regards as "acausal") (*SC*, p.154/167).[22]

The claim *isn't* that we cannot construct mathematical formulas with some applicability to events occurring in organisms. The claim is that we cannot thereby *reconstruct*, *recover*, or *reduce* the form of a total organism. Merleau-Ponty grants that in "catastrophic" cases, the unique form of organisms may momentarily break down, and we can then provide an adequate physical analysis (*SC*, p.150/163). These are regarded as "pathological cases or... laboratory phenomena" which have no validity in providing an understanding of a *natural* organism (*SC*, p.150/163 – compare p.11 above).

In sum, Merleau-Ponty's claim is "that 'organism' is an equivocal expression" (*SC*, p.151/164). It can refer to "the real organism considered as a segment of matter, as an assemblage of real parts juxtaposed in space and which exist outside of each other, as a sum of physical and chemical actions" (*SC*, p.151/164). Or it can refer to "the true organism, the one which science considers... the concrete reality of the perceived organism, that which supports all the correlations which analysis discovers in it but which is not decomposable into them" (*SC*, p.156/169). As with physical forms, the organismic forms which serve as the guidelines and standards for all biological research are regarded as *perceived forms*. The organism, in this sense, is not a reality discovered *through* science, but rather "a unity of signification,

[22] Thompson (2007) seeks causal-yet-probabilistic laws of forms' dialectical unity.

a phenomenon in the Kantian sense" (*SC*, p.159/172). In short, the "true organism" is to be regarded as "the perception of the living body—or, as we shall say from now on... a 'phenomenal body'" (*SC*, p.156/169).

The non-isomorphism of physical and vital forms arises because phenomenal bodies are essentially perceptually distinct from perceived physical forms. In a physical form, dialectical relations between "parts" stand against a background (the environment) which is not *part* of the perceived form. In vital forms, *both the organism and its milieu* are "parts" of one form. We perceive organisms as *bound up with* and *engaged in* their milieu as a place of *relevance*. Predators do not exhibit muscle contractions: they *chase their prey*. Prey do not exhibit muscle contractions: they *escape from predators*. In short, perceived behavior is not localized to a material body. This is the upshot of the ambiguities of "stimulus," "behavior," and "organism."

> In recognizing that behavior has a meaning and depends upon the vital significance of situations, biological science is prohibited from conceiving of it as a thing in-itself (*en soi*) which would exist, *partes extra partes, in* the nervous system or *in* the body; rather it sees in behavior an embodied dialectic which radiates over a milieu immanent to it (*SC*, pp.161/174).

In slogan: perceived physical forms are self-enclosed, whereas perceived vital forms are "out and about." With this qualitative distinction drawn, *there*

can never be any isomorphism between vital and physical forms.[23] Merleau-Ponty takes it to be evident that there is no such isomorphism in *perception*. Moreover, even "a physical analysis which is unlimited in principle" will not reveal any such isomorphism (*SC*, pp.150-151/163-164). This is so since physical science *itself* cannot discover new physical forms: forms are objects of *perception* (cf. §4.4 above). Once we abandon the error of reification, regarding physical and vital forms as *nothing but* perceptual phenomena, the essential, perceived difference between their "self-enclosed" and "out and about" character suffices to render them essentially non-isomorphic.

5. Concluding Remarks

Full understanding of *SC* requires clarification of human forms (*SC*, pp.160-181/174-198). I omit discussion, since we find no novel critique of the Gestaltists. Just as vital forms are not isomorphic (let alone "reducible") to physical forms, perceived human forms are a third unique type (*SC*, pp.162/175-176, citing Husserl 1913). Likewise, Chapter IV is crucial to *SC*, but can be omitted. Merleau-Ponty's final comment on Gestalt theory is that "the consciousness *for* which the Gestalt exists was not intellectual consciousness but perceptual experience" (*SC*, pp.210/227). I have clarified

[23] Dreyfus (2005, pp.142-3) approaches this point, but speaks as if it is an issue of isomorphism between *real organismic forms* and *real physical forms*. He fails to underscore that it is only the *perception of* behavior, in *phenomenal* bodies, which is at issue. Puzzlingly, Thompson seeks to grant that our understanding of vital forms always derives from perception (2007, pp.163ff), but maintains that we can still discover unperceivable isomorphisms between vital and physical forms (2007, pp.81-86).

why forms are regarded as perceptual phenomena. This leads to Merleau-Ponty's later work: only a phenomenology of perception can fully clarify the constitution of perceived forms.

Allow me to sum up. According to Merleau-Ponty in *SC*, the Gestaltist's "reductivist" errors all involve false isomorphisms between physical and non-physical forms. These errors rest upon a deeper one: reifying forms as transcendent objects instead of apprehending them as perceived *phenomena*. The error of reification is to be abandoned since a proper understanding of the relation between scientific knowledge and forms demands a dialectical treatment of both. Previous commentators have not properly identified this cascade of errors. For example, Bannan (1967, pp.44-45) and Rouse (2005, pp.265-266) only partly clarify the final point, that structures and laws must be understood as co-determined. Flynn (2011, §1) and Barbaras (2005, esp. pp.216-219) identify the error of reification, but not its source in a positivistic conception of laws.[24] The reductivist errors are partly recognized by, e.g., (Embree, 1980, p.109), and Dreyfus (2005, p.142), though they overlook the fundamental error of reification. Most strikingly: recent philosophy of mind

[24] Barbaras (2005, p.221-223) quickly draws upon Merleau-Ponty's later work to flesh out the ontology of forms as simultaneously phenomena and real. My target here is simply *SC*; and if we remain focused solely on *SC*, I do not see that, Merleau-Ponty has made the "great discovery" of life as "*real qua phenomenon*" (2005, p.219). These are exclusive categories in *SC*: phenomena are not real. There is an "index of real existence" in perception (*SC*, p.218/2435), in virtue of which we are presented with "the very phenomenon of the real" (*SC*, p.224/241). Any approximate truth of naturalism derives from this. But in *SC* "it is realism itself which must be called into question" (*SC*, p.182/197) and the foregoing analyses have resulted in "establishing the ideality" of physical, vital, and human forms (*SC*, p.184/199).

risks grave misrepresentation of *SC*, by failing to see that "circular causality" is no part of Merleau-Ponty's positive account. To treat the dialectical unity of forms as any kind of circular causality risks precisely the kind of error of reification which underwrites *SC*'s critique of the Gestaltists.

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