

## Chapter Eight Content and Vehicle in Perception<sup>1</sup>

### ' 8.1 Introduction

I have tried to show that the ability to reidentify things that are objectively the same when we encounter them in perception is the most central cognitive ability that we possess. It is an extremely difficult task, deserving careful study by psychologists and neuroscientists as well philosophers. But in order to study how a task is performed one must begin, of course, with some understanding of what that task is. We have not yet asked in what the act of reidentifying consists.

The question is made more difficult by a tradition we have all been trained in, philosophers and psychologists alike, that takes the answer to be obvious. Answers to various other questions have then been constructed on this implicit foundation, so that challenges to it are have become both hard to understand and anxiety producing. This traditional answer is that reidentifying an object or property in either perception or thought consists in being able to discriminate it, and that this ability is manifested in sameness of one's reaction to the object, or sameness of one's treatment of it, or sameness of the mental term or concept one applies to it. That is, reidentifying is repeating some kind of response. Call this "the repetition view of reidentifying."

One familiar doctrine constructed on the repetition view is that when sameness in the referential content of two perceptions or thoughts fails to be transparent to the thinker, this is because the content is not thought of it in the same way both times. It is because one does not repeat one's way of thinking of it because the referential content is not thought of under the same mode of presentation. To fully describe the content of a person's thought thus requires indicating in what way, under what modes of presentation, the various objects of their thought are grasped. A second familiar thesis is that wherever identity of referential content fails to be transparent, this identity can only be grasped by making an identity judgment correlating the two modes of presentation. In the following chapters, I will try to show that these views are mistaken. I will argue for another view of the act of identifying, and supply other tools with which to understand the phenomena that modes of presentation and judgments of identity were introduced to explain.

The point to be made about grasping sameness is a very abstract application of a more general point that pertains to all varieties of mental representation. It will be easiest to explain using concrete examples taken from the realm of perception. In Chapter Five I tried to show how perception of substance sameness was in certain ways similar to or even continuous with cognitive understanding of substance sameness. The basic lesson to be learned about cognitive grasp of identity, also, is applicable to the theory of perception. So here I will temporarily broaden the focus, beginning with points that may at first appear to concern perception alone, only later applying them to cognition. The chapter will be mainly negative. It is no help to introduce a new theory of what grasping sameness consists in unless a need for it has been shown.

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<sup>1</sup> Portions of this chapter were revised from "Perceptual Content and Fregean Myth" (Millikan 1991) with the kind permission of Oxford University Press.

## ' 8.2 the Passive Picture Theory of Perception

In its most general form, the confusion that produces the repetition theory of identifying is found also in classical representational theories of perception. It consists in a confusion or mingling of the intentional contents of a representation with attributes of the vehicle of representation. For a starting intuition, compare Kant's suggestion in the Analogies that Hume had confused a succession of perceptions with a perception of succession. In the case of the repetition view of reidentifying, I will later argue, the error consists in confusing sameness in the vehicle of representation with a representation of sameness.

Classical representational theories of perception typically were motivated by an argument from illusion. Verbs of perception all are, in the first instance, achievement verbs. In the primary sense of "see" you cannot see what is not there to be seen, you cannot touch what is not there to be touched, and so forth. If there is perception at all, there must be a real object that is perceived. Add to this the fact that perceptual illusion is possible. Straight oars look bent in the water, and the same bucket of water may be perceived as cold by one hand and hot by the other if one hand is first heated and the other first cooled. A simple step takes us to the conclusion that what is directly perceived is never the real world, but merely an inner representation or picture of it. The representation really is bent, or cold at one hand and hot at the other.

In part, the temptation to make this move results from missing words in the language. In the realm of conception we have the term "know," an achievement verb, but we also have another term "believe" which is a verb only of trying. If you know something, it has to be true, but if you merely believe it, it may or may not be true. Missing are verbs of trying that contrast in this way with the achievement verbs of perception. Suppose then that we introduce a general term for what stands to perceiving as believing stands to knowing. We coin the term "visaging" for this purpose. Let it stand for apparent hearings and touchings and smellings and so forth, as well as for apparent seeings. There is little temptation to conclude from the fact that you can undergo illusions of knowing that what is known is never what the world is like but only what one's representations of the world are like. The parallel conclusion in the case of perceptual illusion is equally easy to refuse if we allow ourselves to speak of visaging things we are not actually seeing. Believing wrongly about things in the world is not knowing about an inner realm that mediates between me and the world. Visaging things in the world wrongly is not perceiving an inner realm that mediates between me and the world either.

But classical theories of perception claimed otherwise. Clearly there is nothing that we know when we believe falsely. But according to classical theories of perception, there is something that we perceive when we visage falsely. The intentional object of a visaging is always something real, but not, of course, something in the ordinary world. Just as primitive peoples take dreams to be knowledge, though knowledge of another realm, classical theories of perception take illusory visagings to be knowledge, though knowledge of another kind of object.

Visagings were taken to be graspings of, awarenesses of, a realm of representations, and representations, on nearly all the classical views, are likenesses. Visagings were taken to involve items appearing before the mind that are similar to what

they represent, hence that have the properties that they represent. The properties claimed by visagings to characterize the world exist in "objective reality" (Descartes), or they, or doubles of them, are true of sense data, or percepts, or phenomenal objects, or visual fields, and so forth. Not exactly the same properties, perhaps, but at least properties having something like the same "logical form." When the world resembles the inner picture, then the visaging is veridical, showing how things really are. But like pictures drawn with the purpose of showing how things are, visagings can also misrepresent.

Gareth Evans calls this sort of move "the sense datum fallacy," and then says, "[i]t might better be called 'the homunculus fallacy'...when one attempts to explain what is involved in a subject's being related to objects in the external world by appealing to the existence of an inner situation which recapitulates the essential features of the original situation to be explained...by introducing a relation between the subject and inner objects of essentially the same kind as the relation existing between the subject and outer objects" (1985a p.397). He thus suggests that the main problem with this sort of view is that it invokes a regress. How will the inner eye then perceive the inner picture? In the same way that the outer eye does?

I think this is a mistaken analysis, that regressiveness is not really the problem. Nothing forces a regressive answer to the question how the inner eye works. After all, the purpose of introducing inner representations was to account for error, but there seems no reason to suppose that the inner eye would have the problems the outer eye does of sometimes misperceiving what was there before it. So there would be no need to suppose that it must use additional still-more-inner representations in order to see. What is wrong with this classical view, I submit, is the story that it does tell about how the inner eye works. Having projected the visaged properties into the direct presence of the mind, the classical assumption is that there can be no problem about how these properties manage to move the mind so as to constitute its grasp of what they represent. Their mere reclining in or before the mind constitutes the mind's visaging of them and their contents. They are before the mind, hence the mind is aware of them, hence of the properties they embody and represent. That's all there is to the story. Call this the "passive picture theory" of inner representation.

The passive picture theory produces a facade of understanding that overlooks the need to give any account at all of the way the inner understander works, any account of the mechanics of inner representation, any account of what kind of reacting is comprehending. Clearly it must be the mind's reaction that constitutes its understanding of the content of an inner representation. The mere being of the representation cannot by itself constitute an appreciation of it. Rather, the inner eye or mind must understand the representations before it by reacting to them appropriately, by being guided by them appropriately for purposes of thought and action. But once you see that it must be the mind's reaction that constitutes understanding of an inner representation, you see that the picture part of the passive picture theory is also suspect. Why would a picture be needed to move the mind appropriately? At least, wouldn't something more abstractly

isomorphic do as well?<sup>2</sup>

Perhaps no philosopher explicitly holds quite the passive picture of perception today. But there are vestiges of this way of thinking in many modern discussions of perception. The passive picture theory has left its mark in arguments that implicitly move from the fact that certain properties are visaged to the conclusion that the vehicle of the visaging must also have these properties. Or they move from the assumption that the vehicle of visaging must have certain properties to the conclusion that these properties must be ones that are visaged. Let us look in detail at some of these moves.

### ' 8.3 Internalizing, Externalizing, and the Demands for Consistency and Completeness

The passive picture theory projects properties claimed in or by the visaging onto the inner vehicle of the visaging. Call this move "content internalizing." It also projects properties of the vehicle of the visaging into the visaging's content. Call this move "content externalizing." The illusion is thus created both that one directly apprehends aspects of the nature of the vehicle of perception in apprehending the visaged object, and also the reverse, that one can argue from the nature of the vehicle of perception to what must be being visaged.

One result of these moves is to make it appear problematic how inconsistencies could occur in the content of a visaging. Inconsistencies in content would have to correspond, per impossible, to inconsistencies in the actual structure of the representation's vehicle. We can call this the "demand for consistency" in content. The

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<sup>2</sup> I have taken the position that thinking and perception probably both involve inner representation and that representation involves abstract mappings by which representations are projected onto representeds (Millikan 1984 and elsewhere). See also ' 14.2-4 below. But this abstract claim about mathematical isomorphisms does not entail that any particular concrete properties and relations are shared by representation and represented.

demand for consistency in a visaging's content is what makes it seem problematic how something could appear at the same time both red and not red, or to be both moving and not moving, or to be the same color as, yet a different color from something else (' 7.3).

A sister result is that there could be no visaging that does not visage also all logically necessary or internal features of what is visaged. For example, there could be no visaging of properties without a simultaneous visaging of their internal relations. Contents lacking or failing to claim logically necessary or internal features associated with their contents would have to correspond, per impossible, to vehicles lacking logically necessary or internal features of themselves. We can call this the "demand for completeness" in content. Examples of submission to these various demands will be given below.

Internalizing and externalizing moves are enormously interesting, for in certain forms these moves can survive the contemporary turn that explicitly denies the phenomenally given, substituting neural representations for phenomenal ones. Indeed, there are forms in which these moves can survive even the turning of inner representations into mere cognitive dispositions and capacities, or into the states that account for these. I will soon argue that in the case of Fregean senses these moves also can survive turning from perception to cognition, a mode generally thought of as very unpicturelike. For example, the demand for consistency and the demand for completeness each finds subtle expression in Frege's views on conceptual content. Because the confusions that I wish to discuss cut in this way across both theories that postulate experienced and those that postulate nonexperienced inner representations or other nonphenomenal states, I propose to ignore such distinctions entirely. Sense data, percepts, sensations, neural states and acts of grasping Fregean senses, even when the last are interpreted as mere capacities or as states that account for these, are none of them exempt from internalizing and externalizing moves. I will speak indiscriminately, then, of moves concerning postulated "intermediaries." Let me emphasize this: I am counting as "intermediaries" even capacities and the states in which they are grounded when these are understood to account for the intentional contents of mental episodes.

The move that I am objecting to is not, of course, that of positing intermediaries. Postulation of intermediaries of some kind is essential to understanding perception and thought. The error is that of projecting, without argument, chosen properties of what is visaged or conceived onto these intermediaries, and vice versa. The error is equally that of taking this sharing of properties to constitute an explanation of mental representing. The passive picture theory causes the underlying nature of the vehicle of thought to disappear from (the theoretician's) view as an agent. The nature of the actual intermediaries for perception or thought, the actual mechanics of these, retires, leaving in its place a frictionless substitute that translates meaning directly into mental action and vice versa.

#### ' 8.4 Internalizing and Externalizing Temporal Relations

Now for examples from perception. No one supposes, nowadays, that visaging colors or shapes requires that any similarly colored or shaped intermediaries should appear either

before the mind or in the brain.<sup>3</sup> But have we assimilated the parallel truth about temporal visagings? Daniel Dennett and Marcel Kinsbourne (1992) have spoken to the multitude of confusions about this that persist in the psychological and philosophical literature, citing experiments that show clearly that the order in which one perceives events is not the same as the order in which one perceives the events to occur. A succession of impressions does not necessarily produce the impression of succession. But here are two leftovers that are still worth examining.

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3 Recall, however, this passage from Strawson's Individuals, Chapter 2: "Sounds...have no intrinsic spatial characteristics...[by contrast]...Evidently the visual field is necessarily extended at any moment, and its parts must exhibit spatial relations to each other" (Strawson 1959 p.65). The visual field is itself extended?

In "Molyneux's Question," Gareth Evans (1985a) discusses the classic view that the blind cannot perceive space, this because the parts of an object can only be touched in succession, and because successive touchings could not yield a perception of the object's simultaneous spatial layout. Evans' counter is that one cannot argue "from the successiveness of sensation to the successiveness of perception" and that there is no reason why "the information contained in the sequence of stimulations" might not be "integrated into, or interpreted in terms of, a unitary representation of the perceiver's surroundings" (1985a, p.368). So far, so good, were he to mean by "unitary representation" only a representation of something unitary. But Evans proceeds to call such representations "simultaneous perceptual representations of the world" (1985a, p.369), thus expressing his basic agreement with the assumption behind the classic view, that a representation of simultaneity can only be accomplished by simultaneity among elements in the vehicle of representation.<sup>4</sup>

In a similar vein, Evans answers with a confident but unargued "yes" the question "whether a man born deaf, and taught to apply the terms 'continuous' and 'pulsating' to stimulations made on his skin, would, on gaining his hearing and being presented with two tones, one continuous and the other pulsating, be able to apply the terms correctly" (1985a, p.372). The assumption behind Evans' confidence seems to be that continuousness and pulsatingness in whatever medium must be represented by continuousness and pulsatingness, hence will always be recognized again. Yet first Evans, and then I, have just now represented pulsatingness and continuousness to you without using the pulsatingness or continuousness of anything in order to do so. Evans' assumption illustrates first "content internalizing," then "content externalizing." Perception

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<sup>4</sup> That this is indeed what Evans intends comes out very clearly in his discussion of "simultaneous" vs. "serial" spatial concepts in Part Four of Evans' "Things without the Mind" (1980).

of pulsatingness both in pressure on the skin and in sound must be represented by pulsatingness in the vehicle of representation, and if these two vehicles possess the same property, pulsatingness, this sameness in properties must produce a visaging of sameness to match.<sup>5</sup>

' 8.5 Internalizing and Externalizing Constancy

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<sup>5</sup> But see also McDowell's footnote in (Evans 1985a, p.373) suggesting that Evans may later have rethought this issue.

A second example concerns the perception of change versus constancy. Consider one of Christopher Peacocke's arguments (Peacocke 1983) for the existence of an intermediary called "sensation."<sup>6</sup> Ironically, his argument is presented in support of the view that the properties of sensation are not derivable as mere correlates of the intentional contents of perception. The argument concerns the "switching of aspects" that occurs as one fixates on a neckar cube (or, say, a duck-rabbit). "The successive experiences have different representational contents," Peacocke says, yet "the successive experiences fall under the same type... As Wittgenstein writes, 'I see that it has not changed'" (Peacocke 1983, p.16). Peacocke's conclusion is that beneath the change in representational content lies a constancy in properties on the level of sensation. Now assuredly, "that it has not changed" is something that I see, but that what has not changed? My visaging has as part of its content that the world has not changed—that is where the constancy lies. Peacocke has internalized this content to yield an intermediary, a sensation, that has not changed. Compare a man looking through a perfectly ordinary window who erroneously believes he is watching a 3D movie. He quite automatically takes it that whenever he sees a change or a constancy, that is because the movie screen image has changed or been constant. Analogously, Peacocke's assumption seems to be that a perception of constancy can only be accomplished via an inner intermediary that is itself constant.

This particular assumption, call it "constancy internalizing," which both philosophers and psychologists routinely fall into, has pervasive and far reaching effects. It produces the illusion of constancy at an intermediary level, not just as shifts in aspect occur, but more devastating, as shifts in attention occur, and even over episodes of perceptual learning. Shifts of attention are, of course, routinely coincident with perception of constancy in the object perceived, indeed, coincident with perception of constancy in the very properties upon which attention focuses and then withdraws. This is true also for episodes of perceptual learning. Learning to perceive, for example, learning to distinguish major triads or learning to see what's in the field of the microscope as microbes, is simultaneous with the perception that what is perceived is not itself changing or undergoing reorganization over the interval. When these constancies are internalized, the illusion is produced that there is a background intermediary corresponding to the whole detailed scene before or around one in perception, an

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6 I am grateful to Christopher Peacocke's challenging work on perceptual content (Peacocke 1986, 1987, 1989a, 1989b), in which he introduces "manners" of perception (1986, 1989a) and contrasts these with Fregean modes of presentation, for leading me to investigate the possible roots of Frege's senses to be discussed here. Although we disagree on some quite fundamental points, without Professor Peacocke's help I should never have thought of looking at Frege in this light. My ungrateful choice of a couple of Peacocke's claims and arguments to use as negative examples in the text that follows reflects that these happened, thus, to be on my desk at the time of first writing, not that they are unusual in any other way.

intermediary that changes only when caused to change by changes in the world outside, or by shifts in the perceiver's external relations to that world. This intermediary is traditionally labeled "the sensory field," for example, "the visual field." Nearly everyone still believes in it.

The constancy of the hypothesized sensory field may then be externalized again. If the intermediary that supposedly stays the same is projected to become a constant intentional content for the visaging, we arrive at a backdrop of continuing content from which there emerges a varying foreground as learning or attention switches occur. Perhaps as connections are made into conception. Peacocke calls such contents, which in the case of vision determine (densely grouped alternative sets of<sup>7</sup>) complete spatial configurations of objects or surfaces around one, "scenarios" (Peacocke 1987).<sup>8</sup>

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7 This feature allows for indefiniteness or indeterminacy due to lack of perfect visual acuity.

8 I had much the same view in mind when I wrote (Millikan 1984). There are passages there on perception that may be uninterpretable if one declines to take this view--and with it another relative of Peacocke's views, namely, that perception involves some type of analogue intermediaries. What I claim here is that at least certain arguments for this don't go through.

Internalizing and externalizing of constancy threatens to produce inconsistency. What is visaged the intentional object changes yet the visaging also claims that the world has remained constant. But how could the intermediary of perception remain constant so as to account for the perception of constancy, yet change so as to account for changes in content over changes in attention or over learning? When inconsistency threatens, distinguish levels. Peacocke distinguishes two levels of properties for his intermediaries, "representational properties," and "sensational properties" the first of which concern content, the latter of which do not, although "experiences with a particular sensational property also have, in normal mature humans, a certain representational property" (1983, p.25).<sup>9</sup> As we will see later, Frege, in a related sort of bind, distinguishes two levels of content so that differences can be projected from one level that are not found on the other.

What would it be to refuse to internalize constancy? Perhaps the perceptual-cognitive systems manufacture perceptual intermediaries piece by piece, only as one needs them, each expressing only a fragment of the content that would be available for expression given other needs. The question whether this is how it works surely turns on empirical evidence, perhaps on neurophysiological evidence, rather than a priori arguments.

#### ' 8.6 Importing Completeness

If some aspect of content, taken by itself, is merely internalized and then externalized again, this will not result in any change of content. But if an aspect of content is internalized and then filled out so as to make consistent the hypothesis of its inner reality before it is externalized again, the result may be an apparent change in content. This changes the scope of the visaging operator in a way Quine called "importation" (Quine 1956). For example, any property or relation that is internalized from a visaging to an intermediary demands to be filled out and made determinate. For if the intermediary really has the visaged property or relation it must have it in determinate form. Nothing real has indeterminate properties, being, say, rectangular but neither square nor non-square. This is how Berkeley argued against abstract ideas. Contents that have been internalized cannot be abstract. But when they are first made to be concrete and then externalized again, the result is a change of scope for the visaging operator. Using a familiar example, if my visaging claims that there exists a large number that is the number

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<sup>9</sup> Drawing the distinction between these two kinds of sensational properties is not always easy. See (Peacocke 1983, p.24-26).

of speckles on a certain hen, then there must exist a definite large number that the visaging claims to be the number of speckles on the hen. If  $V:[(\exists x)(x \text{ is a number and } x \text{ is large and there are } x \text{ spots on a hen})]$  then  $(\exists x)[x \text{ is a number and } x \text{ is large and } V:(\text{there are } x \text{ spots on a hen})]$ . There may not be anything wrong with exporting the existence of a number, but the result here is also to import determinacy to within the scope of the visaging operator. That this move is in error becomes clearly evident when one applies it to the visagings of imagination. There the result is that I should not be able to imagine a speckled hen without imagining that it has a certain definite number of speckles. But of course I can easily do so.

Call the move that first introduces determinacy at the intermediary level, then externalizes it as part of the visaging's content, thus moving the intentional verb's scope brackets over, "importing determinacy." This move illustrates the demand for content completeness (\* 8.3), the internal feature required for completeness in this case being determinacy.

A significant form of completeness importing imports determinate relata. Any internal relation between properties, such as larger than or, for tones, a fifth higher than, that is internalized from a visaging to an intermediary must be provided with appropriate relata, for real relations can't be instantiated, of course, without also instantiating their relata. If the relation larger than is actually exemplified, there must be two things having definite sizes for it to be between. If a visaged concrete relation were to be internalized directly, its intermediary being taken to embody that very relation, then the intermediary would be thought, most implausibly, to contain things literally having, say, determinate sizes or pitches. Of course most forms of internalizing for concrete properties and relations are more subtle than this, not the very content itself but an analogue being taken to characterize the intermediary. The intermediary is taken, implicitly, to have properties existing in a logical space isomorphic to that of the visaged. For example, the intermediaries for colors and shapes are taken to "stand to one another in a system of ways of resembling and differing which is structurally similar to the ways in which the colours and shapes of visible objects resemble and differ" (Sellars 1956, p. 193). In either case, determinate relata must be introduced at the level of the intermediary. Externalizing, it then appears that the original visaging must have been of determinate relata. Again, the result is to move scope brackets over for the intentional verb involved. From the fact that my visaging claims that there exist relata related by a certain relation, it is concluded that there exist relata that the visaging claims to be related by that certain relation.

An easy example of the importing of determinate relata is found in Evans' "Molyneux's Question" (1985a). Molyneux's question concerned a man born blind who much later regains his sight. Molyneux asked whether, lacking any prior visual experience, such a man would immediately be able to distinguish a square from a circle by sight. Evans has a contender, B, who gives the question an affirmative answer, use the "very familiar" argument that there could not be an experience of something rotating "in the visual field" without there being "four sides" to the visual field, "a, b, c, d, which can be identified from occasion to occasion" (1985a, p.386). That is, the experience of

rotation requires determinate directions for the rotation to occur from and to.

The importing of determinate relations is implicit in Peacocke's claim that a "matching profile" can be described, for example, for the visual experience of the direction from yourself in which the end of a television aerial lies (Peacocke 1986, 1989a). This matching profile is the area within which the aerial must lie if your experience of its direction is veridical. It is described as a solid angle with yourself at the vertex, and it is determined by seeing how far in space the aerial can be moved without your noticing a difference. But the fact that you can perceive a discrepancy when a certain magnitude has been introduced between direction A and direction B would be evidence that you are discriminating the absolute directions of A and B within that range only if visaging a discrepancy required one to visage a direction or range of directions for A and a different direction or range for B. And this would be necessary only if visaging a discrepancy required that the intermediaries for the visagings of A and of B be discrepant, thus having different absolute values.

To appreciate that something has gone wrong here, compare pitches. If I can tell there's a difference between two pitches when these are as little as 2 Hz apart, does it follow that I can visage pitches taken separately each within 2 Hz? I don't have absolute pitch. So either I don't hear absolutely C I don't "visage" absolutely C within any such narrow range. That is, I don't definitely visage C# and definitely visage C#-plus-2 Hz in order to visage a discrepancy. Or else I can visage exactly the same content, say the C# content, twice without being aware of the sameness. A possibility to which I will turn a bit later. Certainly it is not clear that my visagings of absolute pitch are in fact so accurate. Indeed, notice that there is no reason to think that there is even any natural information present in me to represent the absolute values of the pitches I hear, for the phenomenon of adaptation is very deep-seated in the structure of the nervous system. Quoting Oliver Selfridge (unpublished), "the range of stimuli that can be distinguished is greatly increased by the power of adaptation [of the nervous system], although the ability to signal absolute intensities is lost."

Peacocke also remarks on "what you can learn about the size of the room by seeing it" that you cannot necessarily learn by measuring it (1989a, p. 299). But my absolute sense of distance is not too good. What I can learn is mostly relative, it seems to me, and will help me only if I know independently something about the sizes of other relations involved. Suppose that I wrongly perceive two items on opposite sides of the room as different in length. In fact they are just the same length. Does it really follow that one or the other of my absolute distance perceptions is wrong? How then is it determined which one is wrong? Or can one, perhaps, grasp wrongly that the intentional contents of two perceptions are different? In the case of the Müller-Lyer arrows, for example, do you perceive one, or both, as having the wrong length? Or do you perceive each as having its correct length but fail to grasp that this length is the same in the two cases, as one might think of Cicero and think of Tully, that is, think of the same, without grasping the sameness? Similarly, if I perceive things of different length as being the same length, which of the two lengths am I perceiving them both to have?

Another change in scope produced by internalizing and externalizing moves

imports internal relations. Any relata that are projected from a visaging to an intermediary must then be provided with all necessary internal relations. If an intermediary really embodies the relata (or analogues of them) it must also embody these relations. Externalizing, it follows that the visaging was also of these relations. Thus, from the fact that A and B bear an internal relation R to one another, and the fact that I visage A and also visage B, it is concluded that I visage R. For example, I could not truly visage middle C and then orchestra A without visaging one as higher in pitch than the other, or visage a square and a triangle without visaging one as having more sides than the other. Or, using the example just above, I could not perceive each of the Müller-Lyer arrows as having its correct length but fail to grasp that this length is the same length. The demand here is for content completeness (' 8.3).

A final alluring example of importing completeness found in many places is warned against in Lorenz (1962). Animals, presumably, do not represent the world in the same respects that we do. They represent those aspects of the world that are of practical significance to them. There are narrow limits on what they represent. From this it may be concluded that animals represent the world as having narrow limits, or as having only the aspects they represent it as having. Similarly, our own understanding of the world has limits, though different limits. So we represent the world as having different limits. It follows that our representation of the world conflicts with that of the animals, indeed, the representation of the world by each type of animal conflicts with the representation by each other type. Every animal's representation of the world, including ours, is necessarily a distortion of the world. Each animal lives in its own world, and none of these worlds are objectively real.

The mistake here involves importing and exporting the limit of a representation. If there is a limit to what is represented, there is a corresponding limit to the vehicle of representation, and a limit to the vehicle of representation is then exported to be a representation of the limits of the represented. But the limit of a represented content is not a representation of a limit. Representing only part of the world is not representing this as the only part.