Chapter Eight

Christian von Ehrenfels I

On the Theory of Gestalt

1. *The Theory of Gestalt Qualities*

In the present chapter we shall deal with the birth of the theory of Gestalt, and particularly with the essay "On 'Gestalt Qualities'" by Christian von Ehrenfels, published in 1890. It will become clear in the course of this chapter that the Gestalt psychologists of the Berlin school, above all Max Wertheimer, Wolfgang Köhler and Kurt Koffka, were part of a wider Gestalt tradition whose roots lie in developments in Austrian philosophy in the last part of the nineteenth century.

Ehrenfels was born in Rodaun (near Vienna) in 1859 and died in Lichtenau in 1932.[1] He studied in Vienna under Brentano and Meinong, and was Professor in the German University in Prague from 1896 to 1929, where he continued to teach until his death in 1932. His circle of friends, students and acquaintances during this time included a number of important writers and thinkers, among them T. G. Masaryk, Max Brod and Felix Weltsch, as well as the economist Friedrich von Wieser and linguists of the Prague circle such as Nikolai Trubetzkoy. Ehrenfels figures, too, in Kafka's diaries, for example in an entry for 1912:

---

1. On Ehrenfels' life see Fabian 1985. Like many of the leading figures in the Gestalt movement, Ehrenfels was a passionate musician. He took lessons in composition from Bruckner, and made a name for himself as the librettist of a number of Wagnerian music-dramas. Ehrenfels made a name for himself also as an exponent of the evolutionary theories of Darwin. He corresponded with Sigmund Freud, and gave lectures on his own peculiar views concerning sexual ethics and related subjects to the Vienna Psychoanalytic Society: see Rug and Mulligan 1986.

> Amusing scene when Prof. Ehrenfels, who grows more and more handsome and who – with his bald head sharply outlined against the light in a curve that is puffed out at the top, his hands pressed together, with his full voice, which he modulates like a musical instrument, and a confident smile at the meeting – declares himself in favour of mixed races.

Of greater importance for us here, however, is the fact that Ehrenfels' students in Prague included the young Max Wertheimer, the most innovative thinker in what would later become the Berlin school of Gestalt psychology.

Psychology in the nineteenth century was at least officially elementarist in nature. It sought to understand the nature of mental processing in terms of 'atoms' of mental experience and of certain laws of combination which would govern the behaviour of these atoms. The Gestalt movement amounted, in effect, to a campaign designed to overthrow this atomistic orthodoxy in psychology, in a fashion which culminated in the work of the Berlin school in a radical doctrine which made psychological parts derivative of psychological holes, so that 'atoms' would have the status of abstractions or mere theoretical entities. Ehrenfels' paper is the first sorty from the holistic side of this campaign. The paper addresses our experience of complex structures of different sorts. How, from an elementaristic perspective, are we to understand what is involved in our apparent perception of complex formations such as spatial figures? The relevant experiences are after all distinct from all experiences of mere aggregates or sums of separate data. But what can account for the unity which they seem to involve? In order to answer this question Mach had assumed the existence of a new sort of simple element called a 'muscular feeling' (*Muskelgefühl*), which would be associated with the other elements involved in such experiences and give rise, via 'thought-economy', to the illusion that the experiences in question would be directed towards complex objects. Feelings of this sort might be correlated e.g. with specific movements or adjustments of the eyes and associated muscle-tissue.

Ehrenfels' answer, too, involved the postulation of a new sort of element, yet in a fashion which presupposes the discoveries of Brentano in the field of the ontology of mind, discoveries pertaining above all to the dependence relations between psychic constituents. Brentano's seminal ideas in this area had formed the substance of lectures in Vienna which were attended not only by

Ehrenfels, but also by Meinong, Husserl and Stumpf.[2] And as we have repeatedly insisted, the power of Brentano's philosophy consists precisely in its having set forth a means by which psychology and ontology can be developed in tandem with each other in fruitful ways. (It is this which is the theoretical core of his doctrine of intentionality.)

The fact that our experience is structured is, according to Ehrenfels, a matter of certain special '*Gestalt qualities*' which are given in special experiences, superadded to our experiences of sensory elements. A two-level theory of this sort was, as we shall see, characteristic of that 'Austrian' approach to complex experience which was developed by Ehrenfels, Meinong, Witasek, Benussi, Bühler and their followers. According to the later, 'Berlin' approach, in contrast, a collection of data (or any other psychological formation) does not *have* a Gestalt on a second level. Rather, it *is* a Gestalt, a whole whose parts are themselves determined as being such that they can exist only as parts of a whole of this given kind. The significance of this distinction, or of the transition from the Austrian theory of Gestalt as *quality* to the Berlin theory of Gestalt as *whole*, cannot be overestimated. The distinction can be seen as parallel, in some respects, to that between dualistic conceptions of man as composed of body and superadded *mind* or *soul*, and conceptions of man as *person*, or in other words as a special sort of structured whole with both mental and physical aspects.

The essay "On 'Gestalt Qualities'" consists, first of all, in a terminological proposal. Ehrenfels suggests that the German term 'Gestalt', which means 'shape', 'figure', 'form' should be subject to a certain generalization.[3] A

---

2. See Brentano's own notes to these lectures in his 1982, and also Mulligan and Smith 1985. On the theory of dependence in general see Smith and Mulligan 1982. Note that Brentano himself did not accept Ehrenfels' doctrine of Gestalt qualities, nor any of its manifestations, and Kraus 1921 is a critique of Gestalt psychological from this orthodox Brentanian perspective.

3. More or less extended or metaphorical uses of this term have a long history. There is a common use of the term to mean 'external or visible form' (e.g. of the devil, or of a ceramic pot), as also a family of uses allied to English expressions such as 'cut a figure', 'Great Figures in Styrian Philosophy', and so on. The term signifies also quite generally an integrated structure or complex, so that Clausewitz, for example, can speak of a war as an 'absolute Gestalt', an 'indivisible whole, whose elements (the

spatial shape or Gestalt is perceived – or, as Ehrenfels and his fellow Brentanians would say, is 'given in visual presentation' – on the basis of a complex of sensations of individual elements having 'distinct spatial determinations'. In sensing the elements and their spatial determinations we are able to apprehend the shape as an additional object (quality, attribute) as it were side by side with its associated elements. Our total experience is therefore something dis
tinct from the experience of a mere sum or aggregate of sensory elements. This is clear from the fact that we can apprehend *the same* shape (same spatial quality) in association with determinations and elements which, taken individually, have nothing in common: we can recognize a given shape, for example, by looking at an enlargement or reduction of the shape, or by examining a shadow or imprint.

Ehrenfels' idea is that a similar notion can be applied not merely in the realm of spatial complexes but also in relation to temporal wholes such as melodies. For we can recognize a melody as one and the same even though it has been transposed into a different key or has been played on a different instrument or at a different speed. Ehrenfels' proposal is that wherever we have a relation of this sort, between a complex of experienced elements on the one hand and some associated unitary experience of a single invariant structure on the other (a structure invariant *through transpositions* of different sorts), we are to conceive the given unitary experience as structurally analogous to the experience of a spatial shape. Spatial and temporal complexity (and in principle also experienced complexity of other kinds) are henceforth to be treated not as separate groups of phenomena correlated with different faculties of mind. Rather, they are to be treated as a unified species, in which Gestalt-oriented mental processes of the same sorts are involved in every case.

Again, the air of simplicity about this proposal should not mislead. For given the comparatively developed status of our intuitions concerning visual phenomena and the quite general manageability of spatial as opposed to temporal structures (manifested, for example, in the comparatively developed state of the science of geometry), Ehrenfels' proposal has considerable

---

individual victories) have value only in relation to the whole'. (*Vom Krieg*, sketches of Book 8, Part I, quoted in Metzger 1975, pp. 7f.)

theoretical power, which turns on the fact that it was able to explain the possibility of our perceiving not only spatial complexes but also complexes that are extended in the temporal direction. The Machian theory is unable to do justice to the latter – for example to our perception of the melody – because there is here no point in time at which the putative elementary *Muskelgefühl* could reasonably be said to occur.

Ehrenfels' essay is, therefore, more than a mere terminological watershed and it gave rise to a veritable explosion of empirical and theoretical research on 'Gestalt qualities' long before Gestalt psychology was established as an independent movement of thought. Almost all of the theoretical and conceptual issues which came subsequently to be associated with the Gestalt idea are treated at some point in the work, at least in passing. Its specific interest here, however, lies in the generality with which Ehrenfels formulated his proposal. For even though he himself applied his idea of a generalized geometry of Gestalten in greatest detail to the specific case of our perception of melodies and similar formations, he recognized that the idea is applicable, in principle, to all varieties of experience, both perceptual and non-perceptual. Indeed, once the nature of Gestalten has been coherently established, the notion is in principle applicable to objects of all sorts and categories, irrespective of whether or not they serve as objects of experience on the part of actual conscious subjects.

The Gestalt concept can be generalized further to embrace also complex objects of experience founded on *inner* perceptions, that is to say, on one's presentations of one's own elementary feelings, acts or mental states. Moods, emotions and complex feelings are or involve Gestalt qualities on this view (where some of the followers of Mach had wanted to eliminate the notion of Gestalt as a separate category by translating all talk of structure on the side of the objects of experience into talk of *sui generis* moods or feelings – *Muskelgefühle* – with which groups of elementary sensations would be accompanied). Further, sensory data from different sensory modalities may combine together in such a way as to provide the foundation for mixed Gestalt qualities of specific sorts. Thus our perception of wetness is in fact the perception of a Gestalt quality founded on simultaneous sensations of pressure and temperature;[4] the phenomena of complex tastes involve an 'intimate fusion' of

4. Schapp 1910 contains an extensive treatment of qualities of this sort.

pure taste sensations with sensations of temperature, touch and smell, and it seems plausible to suppose that truly subtle tastes will involve in their foundations also complex memories and other data given in inner perception.

Yet Ehrenfels allows not merely Gestalt qualities spanning different sensory modalities and Gestalt qualities built up on the basis of the data from both inner and outer perception. He allows also Gestalt qualities themselves to combine together in specific ways. Having identified spatial shapes, melodies, chords and complex tastes as first-order Gestalt qualities founded on given elementary sensations, Ehrenfels recognizes that these qualities, too, may combine together in such as way as to found new, second-order qualities which are themselves capable of founding third-order qualities, and so on, in principle without limit. The most complex products of the most sophisticated civilization, including all the complex structures of language and art, are hereby comprehended, Ehrenfels holds, within a single theory.

At the very end of his paper, Ehrenfels considers the possibility of an extension of the concept of Gestalt structure in the contrary direction, that is to say downwards from the level of the mesoscopic elements given in perception into the micro-region. 'Is it not conceivable,' he asks, 'that each tone is the fusion of a sum of still more primitive elements with the Gestalt qualities bound up therewith?' He goes on to conclude that,

> no conclusive argument can be brought forward even against the possibility that we may not, penetrating ever more deeply in this manner, finally arrive at a single proto-quality, or at least at a single quality-continuum, from out of which distinct contents (colours, tones, ...) are generated by the fusion of distinct combinations with the Gestalt qualities bound up therewith, [so that] one can no longer shrink from the idea that tones and colours might be exhibited as the products of a much higher degree of complication of proto-elements as yet unknown. (Ehrenfels 1988, pp. 115f.)

Already the language of this passage suggests that Ehrenfels shared with Mach a fundamental elementarism not just in his psychology but also by way of an ontological credo. Both held that the world as a whole is ultimately atomic in structure and that a coherent account of the structure of consciousness would have to be formulated in terms of elementary acts and objects of experience. Unlike Mach, however, Ehrenfels drew a distinction between unitary objects of experience on the one hand and absolutely simple constituent units of worldly furniture on the other. As already noted, Gestalt qualities, for Ehrenfels, are not wholes embracing their fundamenta – the associated tones, colours, tastes or

smells – as parts. They are additional unitary objects, existing alongside the unitary elements with which they are associated. The Gestalt quality is not a combination of elements but 'something new in relation to these, which exists together with [their] combination, but is distinguishable from it'. It is a special sort of structure, 'a positive content of presentation bound up in consciousness with the existence of complexes of mutually separable (i.e. independently presentable) elementary presentations.' (Ehrenfels 1988, p. 93)

For Mach, the only satisfactory story of the universe and of all its parts and aspects is one which is told exclusively in terms of atoms, of absolute elements which are to be counted as phenomenal or physical according to the 'combinations' in which they occur.[5] All other putative entities, including not only melodies and shapes but also bodies and selves, are merely auxiliary aids introduced 'for purposes of thought economy'. For Ehrenfels, in contrast, there are also unitary entities at successively higher levels, objects which, even though they do not belong to the ultimate worldly furniture, are yet given to consciousness in a unitary way and have to be recognized as such by any adequate theory.

Thus the doctor, in observing the temperature chart, perceives the *shape* of the chart on the basis of sensations of its constituent points and lines; the shape is a unitary object of his experience and we falsify this experience if we fail to acknowledge it as such. By calling into account in perception or in imagination the associated states and symptoms of the patient, the doctor can now go on to perceive that peculiar mixed quality which is the patient's condition; this, too, is a unitary object of the doctor's experience, though of a greater degree of complexity. From there he may go on, by calling into account details of the patient's past, to imagine, say, the quality of decrepitude in the life of the patient that has given rise to a condition of this sort. Here again the quality in question is a unitary object of the doctor's experience, associated with, but not reducible to, complexes of points, lines, symptoms, etc. Clearly, although the doctor's awareness of the relevant quality is in each case direct and immediate, the quality itself is such as to inherit a certain complexity from the

5. Mach's views in this respect are discussed in more detail in Mulligan and Smith 1988.

underlying data with which it is associated: like all Gestalt formations it is, in a certain sense, a case of unity in diversity.

There is a whole series of problems internal to the Ehrenfels theory that are left unresolved by the paper of 1890. Thus Ehrenfels describes the Gestalt quality as a 'positive content of presentation'. Is such a content something individual and spatio-temporal? Or is it rather an ideal or abstract universal, multiply exemplified in the acts of different subjects directed towards the same foundational elements? What is the nature of the 'complex' that serves as the foundation or carrier of the Gestalt quality? Matters are made worse by the fact that Ehrenfels employs the terminology of 'content', which is notoriously vague in leaving open the question whether one is dealing with something internal to the act or with its transcendent object. Moreover, Ehrenfels leaves open whether the Gestalt that is the 'content' of a given act is existentially dependent on the act or such as to exist independently of it. Attempted resolutions of these problems are provided by Husserl, Meinong and Stumpf, and it is to their work that we must now turn.

2. *Husserl, Meinong, Stumpf*

Husserl developed ideas very similar to those of Ehrenfels in his *Philosophy of Arithmetic* of 1891. In chapter XI of this work, Husserl points to certain 'figural' or 'quasi-qualitative moments' whose existence is implied e.g. in our talk of a *line* of soldiers, a *heap* of apples, an *avenue* of trees, a *swarm* of birds, and so on:

> In each of these examples we are referring to a sensory collection (*Menge*) of like objects, whose genus is also named. It is not only this that is brought to expression however – for that it would be sufficient to use the plural of the generic name. It is rather a certain characteristic quality (*Beschaffenheit*) of the unitary total intuition of the given collection, capable of being grasped in a single glance ... which comes to expression in the given expressions (1891, pp. 203f. Cf. also 1900/01, A633n., Eng. p. 799n.).

Thus as for Ehrenfels, so also for Husserl, we grasp the configuration and its quality *in one glance* – not by collecting together in intuition a sum or sequence of objects or relations of the sort which occurs in those higher-order articulated acts of counting and calculating which are the principal subject-matter of Husserl's early work.

Husserlian figural moments come in many shapes and sizes, and melodies, for example, manifest complex qualities of this kind. Moreover, it may be that different figural moments can be picked out in the same underlying complex according to the direction of our attention:

> Whenever a manifold of separate objects are given together in an intuition, the figural moments that belong to all the conceivable sub-manifolds compete with each other. When we set into relief a specific collection in intuitive unity, that figural moment steps forth which exerts the strongest stimulus on our grasping. But this victory is sometimes only momentary – we grasp now this, now that collection within the total intuition to which they all belong, according to whether it is this or that figural moment which predominates. (1891, p. 210)

Husserl did not, in this early work, go as far as Ehrenfels in recognizing the generality of the Gestalt concept, e.g. in comprehending mixed qualities embracing elements from different sensory modalities and from both inner and outer sense. He did however manage to get clearer than Ehrenfels as to the ontological status of Gestalt qualities or figural moments, i.e. in regard to the question whether they are most properly to be regarded as individuals or universals. Such moments, Husserl argued, constitute a family of *species*, analogous to the different species-families (of colours, tones, smells, etc.) constituted by the various sensory qualities. Each such family can be understood as amounting to a tree of sub-species of greater and lesser generality. Thus in relation to colour, for example, we have the species *red*, *blue*, *green*, etc., and below these we have sub-species such as *dark red*, *light red*, and so on, on successive levels. So also, Husserl argues, we have in relation to figural moments families of cognate species at successive levels on a tree of species and genera moving from, say, *line*, *swarm*, *star-shaped array* to e.g. *line of such and such objects configurated together in such and such a manner*, and so on. At the very bottom of the tree are *lowest species* in which all variable dimensions have been made determinate. Necessary laws or principles – in many ways analogous to the principles of geometry – will then govern the species at the different levels in this hierarchy, determining their possibilities of mixture and combination and their compatibility with different species of underlying elements.

What we actually see or hear on a given occasion, however, is not the species but some particular *instance* thereof, an *individual* figural moment. This we apprehend as an instance of this or that figural species, in some cases in

virtue of the similarity (or, in the ideal case, qualitative identity) which it bears to individual figural moments apprehended on other occasions and with other associated elements.

From this it follows, however, that there are two distinct respects in which we can apply the universal/singular opposition within the theory of figural moments, so that our consideration of figural moments is subject to two distinct dimensions of variation. We have on the one hand a dimension of variability reflecting qualitative differences among the figural moments themselves, taken *in specie* (differences of position upon the tree of greater and lesser generality). And on the other hand we have also a dimension of variability reflecting differences in the species of the underlying elements (and therefore also of the associated perceptual acts).

Husserl's theory of species and of moments is further refined in the *Logical Investigations* of 1900/01, especially in the context of the theory of dependence or foundation put forward in the third Investigation.[6] The Gestalt problem is, in effect, a problem of unity, and Husserl here argues that unity can come about in two distinct ways. Either given objects are such that – like nuts and correspondingly tooled bolts, or adjacent pieces in a jigsaw – they do not need any additional objects in order to fit together to make a unified whole. Or they are such that – like two pieces of wood which need to be nailed together – they are not in themselves sufficient to make a unity but can be unified only given the presence of some additional object. Such unifying objects may be of two sorts: on the one hand they may be independent objects like a nail or a mass of glue, capable of existing in separation from a whole of the given sort. On the other hand however, and more interestingly, they may be *dependent* objects, capable of existing only in consort with the objects they serve to unify.[7] Husserl calls such dependent unifying objects 'moments of unity' (a term suggested by Alois Riehl), at the same time he moves beyond his own earlier position – dictated, again, by the confusing term 'content' – according to which

---

6. See Smith 1987 for more details of Husserl's Aristotelian theory of species and identity in the *Logical Investigations*.

7. Cf. Schaar 1991 on the relations between Husserl's ideas in this connection and parallel ideas in the work of G. F. Stout.

unification takes place always on the side of consciousness. Moments of unity, he now says, are

> nothing other than those contents which were referred to by Ehrenfels as 'Gestalt qualities', by me as 'figural moments' and by Meinong as 'founded contents'. But there is needed here the supplementary distinction between the *phenomenological* moments of unity which give unity to the psychical experiences or experience-parts, and the *objective* moments of unity, which belong to the intentional and non-psychical objects and object-parts. (1900/01 A230f., Eng. trans. p. 442.)

This distinction between phenomenological and objective moments of unity is important: it signals the fact that Husserl has cut himself free from the unclarities dictated by the terminology of 'content'. Examples of unifying moments in the objective sense might be the copula of a sentence; the treaty of an alliance; the current flowing through a computer (without this flow, the various pieces of the computer would be just so many separate constituent bits).

But we may consider also moments of unity which bridge the 'phenomenological' and 'objective' spheres. Consider, for example, the anger underlying a complex facial gesture (it is this which gives unity to what would otherwise be a heap of simultaneous muscular contractions). Or consider the intended or entertained end or purpose underlying some chain of actions on the part of one or several persons (actions which would, in the absence of such an end, resolve into just so many separate pieces of behaviour). Our mental acts themselves, for example our acts of perception, may also be regarded as moments of unity, serving to constitute a transitory but nevertheless real unity between a subject and a perceptual object.[8] Clearly, when John is thinking, abstractly (or abstractedly), about, say, elephants, then there is no real unity constituted by him and any members of the elephant population. But when, in contrast, John sees some *specific* elephant by which he is confronted, then we may say that he is unified with the object of his act – he and the elephant do not simply co-exist, but are in fact related together in a single unified whole.

A somewhat different step in the direction of a coherent general conception of the ontological status of Gestalten was made by Alexius Meinong in a series of works written in the 1890s, in part in response to Ehrenfels' paper of

---

8. A conception of perceptual acts along these lines is defended in Smith 1984. See also Mulligan and Smith 1986.

1890. Meinong embraced, first of all, a conception of the Gestalt as *above* the founding elements: in his 1891 he talks of Gestalten as 'founded' and 'founding' contents, and of a difference of level between the two.

He then moves one stage further, in part under the influence of Twardowski, from talk of 'founded contents' to talk of 'objects of higher order' (see especially his paper of 1899). The examples which played the most important role in motivating Meinong's discussion here were the different sorts of relations, above all relations of comparison, identity, difference, similarity, and so on. We cannot, Meinong argued, *see* the 'difference' or the 'similarity' between two colours in the same sense in which we can see the colours themselves. Similarly, we cannot *see* higher-order objects such as geometrical shapes, velocities, distances, but most rather grasp them in higher-order intellectual acts. This reflects a dichotomy running through the whole of Meinong's thinking, between entities which *exist*, and entities, which *subsist*. The experience of higher-order objects, including facts or states of affairs, is thus a hybrid experience, relating to both existents and subsistents simultaneously.

In the paper of 1899 Meinong extends the idea of objects of higher order in the direction of an all-embracing stratified ontology. For Meinong, however, as also for Ehrenfels, it remains the case that the world of experience is divided into two categorially different sorts of entity, each correlated with its own peculiar sort of mental act. We might compare this dichotomy with the classical division between matter and form. The *matter* of experience is conceived as being constituted by the data given in supposedly simple sensory acts, all of which are discrete and independent, i.e. are such that each can exist in principle in isolation from all others. The *form* of experience is conceived as being constituted by special categorial objects given in non-sensory intellectual acts.[9]

---

9. It is worth noting in passing that the world of experience thus conceived has much in common with the world of Brentano's mature ontology. Brentano, as we saw, has no room for physical things in the standardly accepted sense. He sees the world rather as a kind of sensory surface, capable of being partitioned into constituent sub-surfaces more or less *ad indefinitum*. To some of the sub-surfaces thereby generated a certain 'thing-character' may then be subjectively imputed. A Gestalt-theoretical view of substance along these lines was developed also by the Meinongian philosopher J. K. Kreibig in his 1909.

Only with the Berlin school will this two-storey ontology be seriously questioned.

Finally, we need to mention the ideas on the philosophy of Gestalt of Carl Stumpf, the teacher of Edmund Husserl.[10] The idea of phenomenal fusion, central to the work of Stumpf, we have met already. Stumpf's account of Gestalt phenomena is characterized by an anti-reductivist, descriptive attitude, which represents an attempt to produce what we might call a natural philosophy of the entire gamut of complex experiences, including not only the phenomena of fusion and purely aggregative phenomena or '*Und-Verbindungen*' but also a range of different sorts of Gestalt phenomena considered as lying between these two extremes.[11]

A complex, for Stumpf, is a whole of (e.g.) sense contents. A Gestalt is a special kind of complex, in which there obtains a network of relations between the contents involved which is such as to satisfy certain special conditions (1939/40, p. 229). The network must be, first of all, unitary and it must be experienced as such: when we hear a chord or a melody then we hear a relational whole and not e.g. a succession of dyadic relations. Gestalten are moreover 'transposable', so that the network of relations must be such that it can, under certain conditions, be transferred from one complex of relata to another, different complex. But now, Stumpf argues, this implies that there is something *cognitive* in our awareness of that specific structure which is a Gestalt, in the sense that to grasp a Gestalt is to grasp not merely a complex individual as such but also that abstract net of relations which is its essence (*op. cit.*, p. 242).

---

10. That Husserl was heavily influenced by Stumpf is seen in the dedication of the *Logical Investigations*. The influence manifested itself above all in the third *Logical Investigation*, where Husserl's treatment of dependent parts is clearly inspired by Stumpf's work in his 1873 on partial contents. On the influence of Brentano on Stumpf see McAlister (ed.) 1976, pp. 42f.

11. Our exposition here is taken from Stumpf's two-volume *Theory of Cognition* of 1939/40, which still manifests a continuity with his earlier thinking. Note that the Stumpfian conception of Gestalt structure is shared also by Karl Bühler in his writings on Gestalt (see esp. his 1913), as also for example by Brunswik 1929.

Gestalten in this sense can never be perceived of themselves but always only in and of some given *formed material*. More precisely, a Gestalt, in Stumpf's terminology, always presupposes some articulated whole in which there are distinct parts which are capable of being grasped as such. A unitary fusion, an amorphous datum lacking all articulation or phenomenally recognizable internal boundaries, is not capable of serving as foundation for a Gestalt relational network as Stumpf conceives it. Thus a tone or phoneme or timbre may involve physical or physiological complexity, but it is phenomenally (psychologically) non-articulated, and therefore has no Gestalt. This implies a distinction between 'whole-properties' such as 'smooth', 'rough', 'cloudy', 'trumpety', 'percussive' etc., which can apply to wholes in general, and 'Gestalt-properties', which can apply only to articulated wholes.[12]

Stumpf also accepts a dichotomy between Gestalten and founding elements. Hence he cannot go along with the later Berlin Gestalt psychologists in conceiving sensations reductionistically, as mere abstractions from Gestalten given in experience. This is first of all for ontological reasons: the Stumpfian Gestalt presupposes an articulation into parts between which there may then exist relations of an appropriate sort. But it is also for reasons of phenomenology: we do not hear the melody or see the figure in the same way that we hear an individual tone or see a coloured fleck, for in the latter there are no differentiatings at work and no intellectual awareness of articulation (*op. cit.*, pp. 246f.)

Stumpf does, however, admit that, as a result of inadequacies or other special conditions on the side of the subject, the awareness of articulation demanded by his theory need not in fact be realized in every case. Thus he is prepared to accept that we often see Gestalten without recognizing parts, that sometimes it takes effort to delineate figures and to discriminate constituents. He is prepared to accept also that a musical tone sounds different when isolated from the way it sounds when occurring in a specific position within the context of a melody, e.g. as the dominant or leading note. But he insists that the fact that

---

12. This restrictive notion of Gestalt proves to be of some importance in the treatment of aesthetic phenomena, since it seems that value, in the aesthetic field, is always such as to involve just that articulate complexity which is here at issue. See Smith (ed.) 1988, pp. 61ff.

a sensory element changes from one context to the next cannot at all count against the thesis that such elements exist, that a melody consists of tones, a landscape of colour-patches, and so on. The effect of much music consists precisely in the fact that the *same* tone in a different context can suddenly gain a quite new significance. Then, however, it is the *role* or *function* of the tone in the given context that is changed, not the tone itself (and from Stumpf's point of view it is characteristic of the later Berlin school that they were tempted to run these two together).

A Gestalt is a whole of relations, but in certain circumstances only part of this whole may be perceived – and this part may be a Gestalt in its own right. Indeed it is only in certain simple cases, for example simple visual patterns, that the entire Gestalt can be perceived in one intuitive glance. In more complicated cases this is not possible, and the greater the manifold of relations between the parts of a given field the less is it possible to grasp all relations simultaneously. We can grasp the Gestalt only if we are somehow able, by a cumulative process involving the operations of memory, to unify everything in one *intellectual* glance, and a discursive process of this sort is indispensable if we are to grasp a melody or any other Gestalt involving any sort of temporal succession.

As one would expect from a philosopher-psychologist who was responsible, with Helmholtz, for establishing the scientific credentials of the nascent discipline of the psychology of music, it is to the case of auditory Gestalten that the Stumpfian natural philosophy of Gestalten is applied in greatest detail. Stumpf considers, in particular, the conditions which must be satisfied if a sequence of tones is to possess that specific sort of Gestalt which we call a melody. Such a sequence must, first of all, have a *sense* for the hearer, a notion which Stumpf explicates by developing a comparison between that system which is a given tonality and analogous systems of a linguistic sort, for example in the sphere of phonology. It must, secondly, have a more or less definite rhythm (and this is for certain melodies more characteristic than the mere interval-sequence). It must be a relatively self-contained whole or formation, not part of any continuation. And it must be non-decomposable: its parts must be dependent entities, not themselves capable of existing as musical categoremata in their own right. A melody is then 'an intelligible, discrete-successive, non-decomposable auditory Gestalt having a determinate rhythmic structure and capable of existing on its own' (p. 270). 'Intelligibility' here

involves not only surveyability of rhythm, but also recognition of dominant, tonic, leading note etc., in a process parallel to the recognition of the different parts of speech in a spoken sentence. This in turn presupposes the interiorization of the relevant tonal system, for hearing a melody is hearing with the contribution of intellectual functions. Who, Stumpf asks, would say that someone had *heard* a sentence who did not speak the language in which it was expressed and therefore grasped only a sequence of sounds? (p. 272)

Stumpf distinguishes also however between *understanding* or apprehending a melody and the somewhat different processes which are involved in its aesthetic *enjoyment* (as understanding a sentence is somewhat different from the enjoyment of a poem). One can apprehend the Gestalt of a melody only when one has heard the entire sequence of tones in such a way that a total impression has been gained through a discursive process. But the effect of the melody on our feelings does not begin only after it has been completed: we follow the melody in its development from the very beginning, accompany this development with expectations, surprises, tensions, releases, for which the foundation is provided by repetition, similarity of strophes, *crescendi* and *diminuendi* etc., and these experiences then serve as the foundation for movements of feeling whose colouring is further determined through the purely sensual feeling-sensations (*Gefühlsempfindungen*) by which they are accompanied. ‘How the past hereby works together with the present, how every new tone is co-determined in its character by all its predecessors, this is something the psychologists have to be left to determine, if they are capable of this at all.’ (p. 273)

3. *The Graz Production Theory*

We have so far left open the question of the genesis of Gestalt qualities. Is the Gestalt quality such as to appear spontaneously as an object of experience when once an appropriate complex of elements is present, as Ehrenfels (and Mach) believed?[13] Or is the appearance of the Gestalt quality in perception the result of special intellectual activity, as if the quality would have to be *produced* by the perceiving subject? It was above all the psychologist followers of Meinong who took this second line, identifying our experiences of higher-order Gestalt formations as *products* of cognitive or intellectual processing. They thereby gave birth to what has been called the 'production theory' of Gestalt perception, to which we must now turn.

In insisting that Gestalten owe their existence as objects of experience exclusively to a specific activity of 'production' on the part of experiencing subjects, the members of the Graz school of psychology drew on Meinong's earlier division of objects of experience into 'existent', and 'subsistent' objects, arguing that only the former can be experienced directly in sensation. If we have presentations of the latter, which are outside space and time, then the source of these presentations cannot be an affection of the senses; hence there must exist some other, non-sensory psychic activity which makes such presentations possible: this is precisely the activity of production.

It is in the work of the Austro-Italian psychologist Vittorio Benussi (1878–1927) that the production theory receives its most detailed exposition and its most elaborate experimental support, even though Benussi himself, in his later writings, saw reason to distance himself from the idea and terminology of production.[14] For Ehrenfels human ingenuity can invent ever new and more complicated types of Gestalt qualities by finding new ways of combining together elements and complexes of elements on successive levels. When once the elements are combined together, however, when once they are juxtaposed, whether spatially or temporally, then the corresponding Gestalt quality simply

---

13. The views of Ehrenfels and Mach on this matter are considered in detail in Mulligan and Smith 1988.

14. See Stucchi 1988.

exists, in entirely determinate fashion, and in such a way that the relevant sensory presentations cannot occur together in consciousness without there occurring also a presentation of the associated Gestalt. For Benussi, in contrast, Gestalt presentations are brought about indirectly on the basis of stimulus-presentations; they are therefore characterized by a certain *ambiguity* in relation to the stimulus, are underdetermined by the lower-level experiences on which they are founded:

> the totality of that which comes to be apprehended internally through the mediation of the eye, i.e. through a certain organ of sense ... does not unambiguously determine those phenomena, objects, appearances, or whatever one wants to call them, which are grasped, presented or taken hold of with and in part through the awakening of all these impressions. (1914, p. 399)

Thus consider for example our experience of a succession of tones. It seems that, through a little intellectual effort, we can hear the relevant sequence as divided into phrasal clusters now in this way, now in that. Or consider our experience of ambiguous patterns such as the Necker cube, Rubin's vase/faces figure, the duck-rabbit, and so on. The same founding elements here give rise to different Gestalt qualities at different times, sometimes in such a way that the qualitative experiences produced alternate in a manner over which the subject has no control. This 'Gestalt-switch' phenomenon is perhaps the one concern most generally associated with the Gestalt tradition, though it is less commonly recognized that it was Benussi who was the first to subject it to detailed treatment, both theoretically and experimentally (and indeed that the notion of Gestalt ambiguity is at the very centre of the Graz production theory).

For Benussi, it was not the 'ideal' nature of Gestalt objects which was of principal concern, but much rather their ambiguity – a characteristic which is lacking, he held, in purely sensory phenomena. It was the fact that on the basis of the same stimulus conditions different presentations of Gestalt qualities can be won which led to the conclusion that there must exist a special kind of non-sensory mental process, an 'extra brain level', which could explain the sometimes complex and subtle resolutions of Gestalt ambiguity which occur from case to case.

Experience has its roots in sensory presentations which are 'without remainder bound to the stimulus'.[15] When, according to Benussi, an act of

15. 1911, p. 391.

production is carried out on the basis of sensory presentations, the contents of the latter are somehow collected together or ordered, are 'brought in real relation to one another'[16] in such a way as to give rise to the experience of a new 'extra-sensory' object, the object of a higher level of Gestalt presentation.

This new position was given support by the fact that – as the Meinongians were able to establish in a number of detailed experiments – our capacities to grasp Gestalten may differ over time, the facility to perform acts of production may be affected by experience and by training. Sensory experiences, too, may suffer from a characteristic

sensory inadequacy of their own, as is illustrated for example by the case of colour-blindness. Sensory experiences may, in other words, suffer a departure from the normal, law-governed dependence relations between stimulus and sensory presentation, and such sensory inadequacy may lead to illusions in virtue of the fact that we will tend, on any given occasion, to make judgments on the basis of the assumption that our current sensations conform to law. Sensory inadequacy is however (or so Benussi argues) involuntary, objectively conditioned, and such that it cannot be eliminated via education or experience – all features in which it differs from the inadequacy involved in our presentation of Gestalten. The latter can be affected, e.g., by the exercise of attention; it depends on *inner* conditions, and can be mitigated through practice. Further, Gestalt presentation on the basis of a given structure may sometimes not take place at all.[17] The subject can deliberately *suppress* the process of production, so that, as Benussi's colleague Witasek especially emphasized, processes of production are *subject to the will*.

Benussi holds that quite definite sorts of inadequate presentation of Gestalt qualities can occur even where the founding elements are brought to presentation in a way that is perfectly adequate. The inadequacy of Gestalt presentations is related in every case to different sorts of anomaly in the production process. That is to say, variations in our experience of Gestalten are conceived purely as a result of our intellectual activities. Only gradually, as we shall see, was it recognized that the variations in question may be accounted for,

---

16. 1904, p. 394; 1914, p. 407.

17. Cf. Benussi 1904, pp. 307f., 410.

in whole or in part, in terms of the state of the perceiving organism and in terms of other conditions of an environmental sort.

Benussi himself gradually adopted a different and more subtle view of complex perception, a view which is comparable in some ways to the position of the later Husserl. According to this later view, presentational experiences can no longer be divided sharply into sensory and non-sensory. Rather, we have a spectrum which extends from cases of perception in which the influence of non-sensory factors ('central conditions') is very strong, to cases of high influence of 'peripheral conditions' in which such influence is negligible. In investigating these phenomena Benussi established a tradition of experimental psychology in Italy which, through the work of Musatti, Metelli, Kanizsa, Bozzi and others, is still alive today, producing valuable results especially in the investigation of perceived plurality, of transparency and of subjective contours.[18]

4. *The Berlin School*

In a series of classic experiments on phenomenal motion carried out in 1912, Wertheimer discovered that when subjects – his subjects in the present case were a certain Dr Köhler and Dr Koffka – are exposed to two alternately flashing lights a short distance apart, then under certain conditions they have an experience of movement back and forth from the one to the other. That is to say, they *see* a movement: the movement is an object of direct visual experience, rather than the spurious creature of some special, purely intellectual act of production. In certain determinate circumstances one can experience *pure* phenomenal movement, that is movement without objects moved, what Wertheimer called the 'phi-phenomenon'.

The phi-phenomenon is clearly and repeatedly observable. It is no less manifest than for example a colour or shape. Yet clearly, what is visually

18. See especially the work on vision carried out by Gaetano Kanizsa and collected in his 1979. This represents a refined and modernized variant of the old Graz two-storey model, though from a perspective dictated both by influences stemming from the Berlin school and also by opposition to those present-day cognitivist views on perception which assimilate seeing to judging.

experienced is not here a matter of any discrete and independent sensory data: what one perceives is, as Wertheimer says, a certain *sui generis* dynamic character of 'across'.

Wertheimer's own initial understanding of the phi-phenomenon was neurological: phi-phenomena are to be explained in terms of certain functional connections or integrations at the cortical level, functional connections held to be sufficient to provide an explanation in and of themselves, without any appeal to an 'extra brain level' of intellectual processing as on a Graz-type production theory. This idea of cerebral integration signifies a final break with the elementaristic sensationalism which had still dominated the work of Mach, Ehrenfels, Meinong, Benussi and their followers, as also of Brentano. Wertheimer's experiments make it clear that it is not the case that to every part of a perceived structure there corresponds one or more sensory data which could in principle be experienced in isolation. What we directly and immediately perceive are, rather, complex Gestalten, only some of whose parts bear a certain analogy to the putative discrete and independent data of sense which had played such a central role in the earlier theories.

Wertheimer does not express this theory in any systematic way in his paper on motion of 1912. He merely 'sketches a hypothesis' (' 21). Nor does he exploit his theory as a starting point from which to criticize in detail other work on phenomenal motion in such a way as to set into relief the peculiarities of the new approach. Rather, it is in a paper by Koffka of 1915, a paper which has been described as 'the birth piece of Gestalt theory as a psychological system' (Ash 1982, p. 338), that this theoretical and critical work is first laid bare. The paper in question is an extensive critique of the views on phenomenal motion built up on the basis of the Graz production theory, particularly as presented in the work of Benussi, together with the presentation of the new, alternative theory put forward in outline by Wertheimer.

Benussi, as we have seen, holds that Gestalt perception involves sense-activity plus a special intellectual operation. Different Gestalten can be founded on the basis of the same inferiora, the latter being the same both as stimulus and as conscious content.[19] But in order to counter the objection that the operations

19. Benussi 1914, pp. 399f. See however 1904, p. 394 and also Ameseder 1904, pp. 495, 506.

of production are not themselves manifested in conscious experience, such operations are held by Benussi to occur *automatically* with the experience in sensation of the underlying foundations.[20] To this extent the very existence of these operations eludes introspective verification and so, Koffka argues, they threaten to become theoretically idle.

Koffka's principal challenge however relates to the putative 'purely sensory experiences' to which appeal is made in Benussi's theory. Koffka argues that there are no such pure sense experiences. Thus for example it is impossible merely to see individual points in an array of colour in such a way that the particular order or configuration of the points would not be included in the seeing. From this, however, it follows that the very idea of Gestalt ambiguity, the idea that there can be a multiplicity of Gestalten on the basis of constant sensory data, must also be rejected. For what could be the evidence that sensory data is constant, given that the sensory material is in every case present only within and as affected by the surrounding total Gestalt? What could be the evidence of 'constant' material of sensation when the supervenient Gestalt is itself allowed to change? Koffka concludes that it is a mere assumption of constancy – of the constancy hypothesis – on Benussi's part which justifies the given claim.[21] Only if the process of Gestalt formation were suppressed could one observe whether the underlying material stays constant – but then no Gestalt would have been formed.

Koffka argues further that ambiguity cannot be a criterion of Gestalt perception, as Benussi had argued. For even simple sensory data, e.g. a simple patch of redness, can be more or less dark or light, more or less warm or cold, more or less penetrating, more or less tinged with yellow or tinged with blue, and so on, in the sense that the same observer might see it under the same external conditions now in this way, now in that.[22] These are fine differences

---

20. Benussi 1914, p. 403.

21. Koffka 1915, pp. 24ff. The constancy hypothesis consists in the thesis that what is given in sensation is determined exclusively by the relevant objective conditions and that, from occasion to occasion, qualitatively similar objective conditions give rise to qualitatively similar sensations.

22. *Op. cit.*, p. 29.

compared to the differences involved in Gestalt perception, but this shows only that – as Benussi himself was later to accept – the distinction between univocity and ambiguity is a gradual one. It does not mark any categorial difference between different species of experiential object.

Most important from our present point of view, however, is Koffka's analysis of the relation between stimulus and observer. Benussi, and the entire Ehrenfels-Meinong tradition, had seen stimuli as something objective, an external given of psychological theory. Koffka, however, insists that that characteristic of a real object or physical process which consists in its being a stimulus is not any absolute property of the object or process itself, but rests always on its relation to the perceiver. More precisely, it rests on a specific state of readiness or *mental set* or *Einstellung* on the latter's part.[23] But if a real object is a stimulus only in relation to an organism and some specific mental set, then it may turn out that it can serve either as sensory stimulus or as Gestalt stimulus from case to case.

For Benussi, the act of production and the experienced Gestalt stand in a relation of mutual dependence. The act of production is unilaterally dependent on the sensory presentations which underlie it, as the experienced Gestalt is itself unilaterally dependent on the sensory data which these presentations are presentations of, presentations and data themselves being such as to stand to each other in a relation of two-sided dependence: neither can exist without the other.[24]

In Koffka, on the other hand, there is no additional entity alongside the sensory data to which appeal would be made in order to account for the fact that the relevant sensory presentations contribute to the experience of a structured phenomenon. For Koffka holds that the manifold of sensory data themselves, as these are reticulated together in the given context, is itself the Gestalt. Moreover, the reticulation of these data reflects – and is a consequence of – an (isomorphic?) interdependence among the corresponding sensory presentations on the side of the subject. In place of Benussi's extra brain level – the process of production – the Gestalt experience is here constituted by a short-circuiting, a

---

23. *Op. cit.*, pp. 33f.

24. Cf. the diagram and further elucidation in Smith (ed.) 1988, p. 40.

mutual integration, on the primary level of sensory experience, with a parallel integration on the side of the successively given data.

The interdependence of the successive presentations is, like these presentations themselves, dependent moreover on the state of the organism in question. For the precise nature of the integration that occurs in any given case will be dependent on the relevant mental set. This is itself not a bloodless abstractum but a complex of physiologically grounded states exhibiting dimensions of variation of its own. Such states will reflect materially determinate knowledge and habits of mind acquired through time by the organism in question, which may be further dependent on social factors, institutions, authorities, language, and so on.

When dealing with the Wertheimer-Koffka position we should conceive 'sensory presentations' or 'sensory data' always – in the spirit of modern-day connectionism[25] – in relation to activity at the cortical and peripheral ends of sensory nerves. The various mutually dependent factors are here only abstractly distinguishable, so that we ought most properly to speak of one single physiological-perceptual total process (of holism all the way down). Certainly this process manifests contours and dividing lines within itself; but it can be abstractly delineated into part-processes in a number of different ways. Thus we might take the state of the organism together with the organism itself as constituting one single whole, intervening between perceived data and acts of perception. We could then interpret Koffka's view as one according to which the organism is a mediator between perceptual process – itself an inextricable fusion of sensory and intellectual part-processes – and perceived Gestalt, in such a way that perception, organism, and percept would be *gestaltet* together into a single (though temporary) unity.

But what is the perceived Gestalt on a theory such as this? It is, first of all, an integral whole which includes among its parts the putative sensory data experienced 'integrally' together. But this perceived Gestalt can be conceived also as including certain parts, surfaces or moments of the relevant *object*. Hence the latter need not be confined to the status of an optional extra beyond

---

25. See for example the material collected in Horgan and Tienson (eds.) 1991. On the intriguing anticipation of connectionist ideas in Hayek 1952, in part under the influence of Mach and Gestalt psychology, see my 1994.

the domain of what can be experienced, as on the Brentano–Meinong–Benussi approach. Koffka, like Wertheimer, is quite clear that perception is a matter of relations to reality. The Gestalt concept belongs not to the abstract level of idealities, as on the Graz theory, but is rather a concept which, like causality, is basic to the sciences of the real:

> To apply the category of cause and effect means to find out which parts of nature stand in this relation. Similarly, to apply the gestalt category means to find out which parts of nature belong as parts to functional wholes, to discover their position in these wholes, their degree of relative independence, and the articulation of larger wholes into sub-wholes. (Koffka 1935, p. 22)

This does not, however, imply a Spinozism à la Mach.[26] Koffka does *not* claim that the universe forms a single 'organic whole'. For 'just as the category of causality does not mean that any event is causally connected with any other, so the gestalt category does not mean that any two states or events belong together in one big gestalt.' (Koffka, *loc. cit.*)

There are, then, separate, distinguishable Gestalten *in reality*. It had been an implication of the Graz view of production that everything that is complex in reality would be a matter of merely summative wholes or '*Und-Verbindungen*'. Koffka rejects this view resoundingly. (1915, p. 35) He himself is primarily interested in Gestalt processes and structures in the physiological domain; indeed he argues that intellectual acts of production would themselves have to be processes of this sort. He recognizes, however, that there are Gestalt processes also in the realm of human action, above all in motor actions, speaking, writing, singing, sketching. These are not step-wise sums of behavioural elements, but unified Gestalt processes whose structures can be adequately understood only as such.[27] The thesis that there are real Gestalten

---

26. See § 8 of Mulligan and Smith 1988.

27. *Op. cit.*, p. 37. Ehrenfels, too, recognized the Gestalt character of human actions. Actions are, for example, transposable: Fritz can *chase the cat* either by running *uphill*, or by running *downhill*. The most philosophically sophisticated treatment of the Gestalt character of actions is however to be found in the writings of the French phenomenologist Merleau-Ponty. See especially his 1942, Ch. II and 1945, Part One, Ch. 3.

was later refined and generalized in Köhler's work of 1920 on physical Gestalten, which defends in detail the view that there are Gestalten (soap-bubble-patterns, patterns of magnetic or electric charge, etc.) even in the world of inanimate nature.

In summary we can say that the content of a perceptual presentation, for Koffka, is a function of various factors, including both objective (stimulus-like) and subjective (set- or *Einstellung*-like) factors. And 'ambiguity' for Koffka, signifies merely: dependence on many rather than on a few such factors.

It has sometimes been assumed that Koffka simply got the better of Benussi, and that his review constituted the nail in the coffin of the Graz theory. This is first of all to belie the continuing influence of Grazist ideas in the work of Fritz Heider, Albert Michotte, Karl Bühler, J. J. Gibson and others, as well as in the work of Italian psychologists such as Kanizsa and Bozzi. Secondly however there are a number of ways in which Benussi might still reply to Koffka's challenge. Thus for example Koffka criticizes Benussi's theory by arguing that the idea of acts of production is a spurious one: it is not open to us simply to subtract what is yielded by the senses from what is yielded in total Gestalt perception and then baptize the not introspectively available remainder as a special, non-sensory act. Yet Benussi can point out that the acts to which he himself appeals are at least no more mystical than the hidden states of Koffka's theory. Benussi himself, it is true, cannot *exhibit* an act of production, since he is concerned to stress that there is no phenomenological difference between Gestalt presentations and sensory presentations (1914, p. 403): production is in effect a purely functional notion. This is not the only possible approach however. Thus acts of production involve, for example, collection, articulation, completion, comparison, and phenomena of this kind have been investigated in detail by Husserl, especially in his sixth Logical Investigation, which deals with higher-order intellectual operations of the given sorts.

Further, as can be seen in the work of Kanizsa, the opposition between perceptual and intellectual operations which lies at the heart of Benussi's theory can still yield interesting and fruitful empirical results, and we should be no more willing to accept that running together of these two types of operation (in favour of perception) which is favoured by the Berlin theory than to accept the opposite running together – the assimilation of perception to cognition – which

is favoured by empiricists and also by some modern-day proponents of a computational 'cognitive science'.

Wertheimer, Köhler, Koffka and Lewin, the four principal members of the Berlin school, all studied with Stumpf in Berlin, and all but Wertheimer received their doctorates for experimental work done under his direction. It has sometimes been suggested that Stumpf had a very minor part in the development of the Berlin Gestalt theory. As Ash makes clear however, Stumpf did not merely play an important institutional role in fostering the careers of his various Gestaltist students (thereby exerting a not always discrete influence on the nature and content of their work); he also provided a thorough initiation into psychological methods and a hard training which were meted out to his students always with an explicit philosophical intent, Stumpf seeking always to link experimental work to 'theoretical exercises in philosophy'. (Cf. Ash 1982, p. 47)

This attitude to experiment had been derived by Stumpf from his teacher Brentano and especially from the latter's insistence on the secondary status of genetic psychology in relation to the fundamental discipline of descriptive psychology. Stumpf however went much further than Brentano in the direction of Gestalt theory. Thus already in 1873 Stumpf had been ready to conceive individual mental acts as mere abstractions from total conscious processes, and he had from the very beginning laid great emphasis on the phenomena of fusion (insisting, for example, that simultaneous tone sensations are never mere sums, but always wholes manifesting only gradual phenomenal differences). Further, he saw the fusion that exists in the auditory sphere not as the result of any deliberate act of unifying together but rather as an immanent structural relation on the side of the tones themselves.

All of these aspects of his work cannot but have been conducive to the development of a theoretical integrationism on the part of his students. Stumpf did not, however, greet all the integrationist ideas of his students with equal enthusiasm. He insisted that his Gestaltist students tended to ignore the discursive, cognitive aspects of Gestalt perception and to concentrate too much on those cases where Gestalt perception occurs spontaneously and 'in one glance'. (1939/40, p. 237) Further, he objected to their idea that Gestalten can have effects on their parts. It is a mistake in ontology to suppose that the whole can exert a causal influence upon its parts, Stumpf insisted, and the parts can

just as little effect the whole: it is always only parts which effect parts. (*Op. cit*., pp. 245f.)

It is above all Wertheimer who, of all the members of the Berlin school, had the most philosophically interesting ideas. Wertheimer also constitutes an important link between Austrian philosophy and German psychology, having grown up in Prague, where he attended the lectures of Ehrenfels and also of the Brentanians Marty and Emil Arleth. There were other influences on Wertheimer's early thinking, and some of these may have played a role in his development of the Gestalt idea. Prague, as is well known, has a distinguished tradition of Jewish scholarship and there is a suggestion that Wertheimer himself is descended from a line of Talmudists, including among them the Talmudic scholar Rabbi Samson R. Wertheimer (1651–1724), who was factor in the Austrian Imperial court.[28] Part and parcel of Wertheimer's non-orthodox Jewish background in Prague was his youthful enthusiasm for Spinoza, and it seems likely that Spinoza had an influence on Wertheimer's ideas on non-additive wholes and on his objections to 'psychological theories in which will and feeling were opposed to thinking, and in which the mind was a separate entity and was opposed to the body'.[29]

The unity of mind and body in Wertheimer's thinking is well illustrated by the following passage from Fritz Heider's autobiography, in which Heider comments on a seminar of Wertheimer's dealing with expression, another notion central to Spinoza, in which Wertheimer defends the view that each person has a certain quality, called his *radix*, which will express itself in different ways: in his physiognomy, in his handwriting; in the way he dresses, moves about, talks, and acts; and also in the way he thinks'. (Heider 1984, pp. 46f.) Wertheimer developed in this connection what he called a 'physiognomic game': 'he would play a melody, and the rest of us would try to guess which of the group his melody portrayed'. (*Op. cit*, p. 89) The thoroughness of Wertheimer's holistic contextualism is then revealed in the fact that, in

---

28. See Luchins and Luchins 1970, vol. III, p. 271, and the (unpublished) note 2 to Luchins 1982.

29. Cf. the unpublished n. 10 to Luchins 1982; see also (and more reliably) Ash 1982, p. 247.

extemporizing the music which would represent the character ('radix') of a particular person, he would take into account not merely the physiognomy and other qualities of the person in question, but also the contrastive relations in which he stood to other persons in the room. Thus the musical representation of some averagely quiet and withdrawn character which would enable one to pick him out in, say, a room full of extroverts, will be quite different from that representation which would be needed were he surrounded by people still more withdrawn than himself.

The German University in Prague could look back on a rich psychological tradition, beginning with the phenomenological work on colour vision of Purkinje and Hering and extending through Stumpf himself (who was professor in Prague from 1879 to 1884, before moving to Halle where he came into contact with Husserl).[30] Mach also belonged to this tradition, having been professor of experimental physics in Prague for 27 years to 1895. It included Ehrenfels and the orthodox Brentanians Marty, Arleth and Oskar Kraus, together also with Kafka's friends Hugo Bergmann and Emil Utitz.[31] And Einstein, too, held a chair in Prague for a time, becoming friendly with Hugo Bergmann[32] and later with Wertheimer himself, their interactions being manifested above all in Wertheimer's book *Productive Thinking*.

Wertheimer was caught up to a greater or lesser extent in all of these currents. There is evidence in his papers that he became interested also in the writings of Husserl, particularly of the latter's third Logical Investigation on the theory of part, whole and dependence,[33] and he maintained throughout his life a characteristically Husserlian interest in the realist foundations of logic and in the

---

30. Boring 1929 (ch. 17 of 2nd ed.) sees the moment of unity of this tradition as lying in the fact that its members embraced one or other form of nativism, as contrasted with the empiricism of Wundt and his follows. Contrast, however, Pastore 1974.

31. See my 1981 on Kafka, Marty and Ehrenfels. Cf. also Brod and Weltsch 1913. To the wider intellectual community in Prague there belonged also the linguists Trubetzkoy, Mathesius, Jakobson, and others. See Holenstein 1975.

32. See Bergmann 1974, esp. pp. 388ff.

33. See Ash 1982, pp. 165, 225.

relations between logical laws and the flux of actual mental events involved in thinking.[34]

5. *On the Parsing of Ontological Structure*

From the Austrian perspective, the Gestalt is a special *quality* of underlying elements; from the Berlin perspective it is a whole which includes these elements as only abstractly distinguishable parts. The apparent conflict between these two views must find some sort of resolution however. For the holism of the Berlin school must find a way to do justice to the evident fact that melodies and similar phenomena are experienced as being constituted out of separate tones. And similarly the proponents of the Graz production theory must find ways to do justice to the fact that tones and similar phenomena are experienced differently according to the contexts in which they appear. In a paper published in German in 1966 entitled "The Problem of Properties in the Gestalt Theory of Perception" the German psychologist Edwin Rausch set out to establish precisely the needed sort of compromise between the Graz and Berlin theories, on the basis of a subtle reconsideration of the ideas put forward by Ehrenfels in his essay of 1890, in a way which amounts to a sort of generalization on the plane of ontology of the idea of Gestalt ambiguity discussed above.[35]

Like Stumpf, Rausch takes 'complex' as a determinable concept with 'Gestalt' as one of its determinates: a Gestalt is, as always on the Berlin theory, *a special kind of whole*. Ehrenfels' idea of a Gestalt quality is not simply abandoned hereby however. For a complex, in order to be a Gestalt, must have certain special characteristics; that is, it must possess precisely certain 'Gestalt qualities' – which now, however, are not supernumerary entities, as on the

---

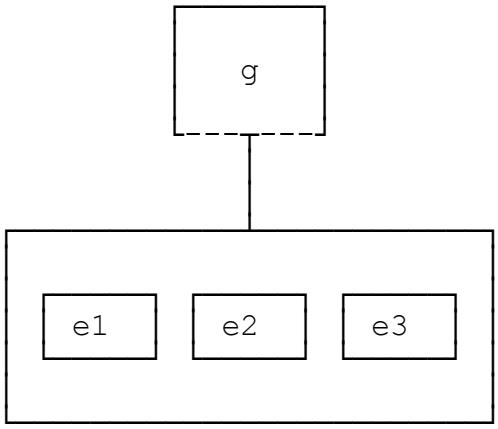
34. Wertheimer was influenced also by the Würzburg school and in fact took his doctorate with Külpe in 1905. See Ash 1982, pp. 250ff., who also provides details of the later careers of Wertheimer, Köhler and Koffka in universities outside Berlin, before their successive emigration to the United States.

35. All references in this section are to Rausch's paper of 1966, unless otherwise stated. It must be stressed that Rausch there limits his remarks to phenomenally given properties.

Ehrenfels view, existing alongside or above the separable *fundamenta*. Gestalt qualities are rather conceived by Rausch as being in a certain sense intrinsic to the Gestalt which has them. Moreover, such Gestalt qualities are conceived as being merely one special type of whole- or complex-quality. Other complex-qualities might be, for example, the quality of being a one-dimensional continuum, the quality of being a purely summative whole, or some other formally or materially specific quality between these two extremes.[36] We shall indeed talk in what follows not of complex-qualities but rather of (non-distributive) properties of wholes in general (of properties which are such that they hold only of wholes *as wholes*: they do not distribute to the several parts, as does, say, the property of being extended, or of being made of inorganic material).

Armed with this general view of Gestalt qualities as special kinds of whole-properties and of Gestalten as special kinds of wholes, we can begin to see that Ehrenfels' own original theory already contains within itself the material for this generalization along Rauschian lines. For consider a simple Gestalt structure consisting of, say, three elements e_1, e_2, e_3 and some quality g. This we can represent as follows:

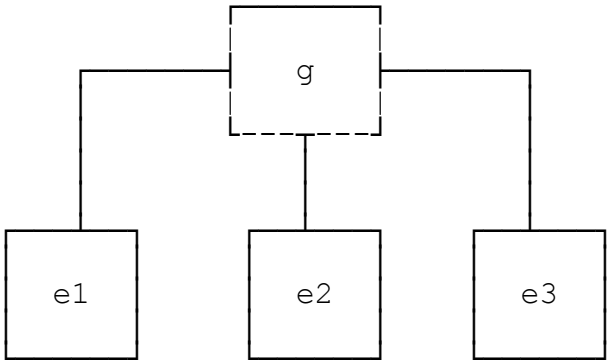
[A]



36. Rausch 1937 shows that there are more than one thousand formally different types of summative and non-summative wholes, even when only relatively simple formal criteria of 'summativity' are taken into account. See Smith and Mulligan 1982, ' 6.

We can also, as Ehrenfels (and Stumpf and Husserl) acknowledged, conceive the property g as a three-term *relation* ('unifying moment') holding *between* the given elements, somewhat as follows:

[B]



with correspondingly more complex transformations where we have to deal with higher-order Gestalt structures, with structures involving phenomenal fusion or continuity, and so on.

Here the *matter* of [A] has been re-parsed, formally, in something like the way in which a complex sentence can be parsed in different ways into saturated and unsaturated parts in Frege's grammar.

Exercises in ontological parsing of the sort here illustrated are at the basis also of Brentano's theory of substance and accident discussed above. Rausch in fact argues that the capacity to submit to such re-parsing, to be transformed from a (1-place) *property* to an (*n*-place) *relation*, is a *criterion* of Gestalt-connection in the classical sense (pp. 871f.). It is absent, e.g., in those cases where a continuum serves as underlying complex.

The possibility of transition from property to relation and back again shows itself not only when we go from wholes (and their properties), to parts (and the relations between them), but also when we remain with the parts. For under certain circumstances – namely when some one given part overwhelms its relata – we can describe a relation between parts as a property of some one given member. Suppose, for example, that light is reflected by the surface of an

object *a* in the direction of an observer *b*. We may in certain circumstances choose to describe this relation simply as a property – of shininess – in *b*. Similarly there are cases where some given agent is described as being 'powerful' or 'threatening', when he is in fact powerful or threatening only *in relation to* one or other group of his fellows. Considerations such as this, when carried over into the material sphere, will allow us to generate, wherever relations of the given sorts exist between ego and environment, a corresponding taxonomy of whole-properties which arise whenever such relations are re-parsed in the given fashion and the relation to the ego is as it were suppressed. Thus we can distinguish, for example,

– structure-properties (properties of order and construction) such as *symmetrical*, *rising*, *falling*, *closed*;
– texture-properties such as *soft*, *rough*, *matt*, *transparent*;
– expression-properties such as *proud*, *peaceful*, *domineering*;

and so on.[37] Value, as we shall see in what follows, represents a particularly important sphere in which such ontological re-parsing takes effect, reflecting the fact that relational and objective theories of value each capture an important grain of truth.

Ehrenfels saw Gestalt qualities as constituting a fixed class of all those entities satisfying given criteria. From the Rauschian point of view, however, whether a complex is or is not a Gestalt is a *gradual* matter. Thus a sequence of tones constitutes a Gestalt to the extent that a melody can be heard in it, and different tone-sequences may have melody qualities to differing degrees.[38]

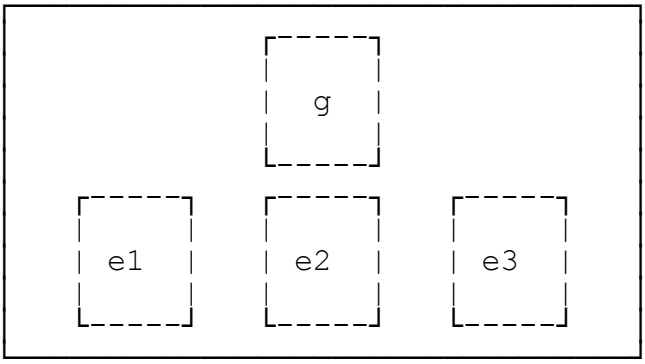
Return, however, to our figures [A] and [B] above. We can cut the pie again, and conceive quality and elements as together constituting a single whole, complex or Gestalt, whose parts are (again to different degrees from cases to case) only potentially discriminable within it:

---

37. See Rausch 1966, pp. 873f., 902f., Metzger 1975, Pratt 1962.

38. 'A complex is the more a Gestalt ... the *clearer* is the complex quality belonging to it. A complex quality is the more a Gestalt quality ... the *clearer* it is.' (p. 879)

[C]



It is this possibility, of moving from elements plus property to a single all-embracing whole, which explains why there are cases where we use the same term for both Gestalt wholes and their qualities. Thus we commonly use the same term for both the melody (as transposable Gestalt) and the specific tone-sequence (as the doctor, again, will refer to *the case of influenza* in the sixth bed on the right).[39]

Whether we view the matters in question as a complex of elements with its quality ([A]), or as elements bound together by a unifying relational moment ([B]), or as a whole within which elements and qualities/relations are distinguishable only abstractly ([C]), is in the end a matter of convenience. Some sorts of examples will call for one description, some for another, in the light of given contexts and purposes. This should not, though, be understood as implying that there is no truth of the matter in any given case (as though the structures of Gestalten could vary in reflection of the way in which the theorist chooses to describe them). Rather, each of the given alternatives are merely

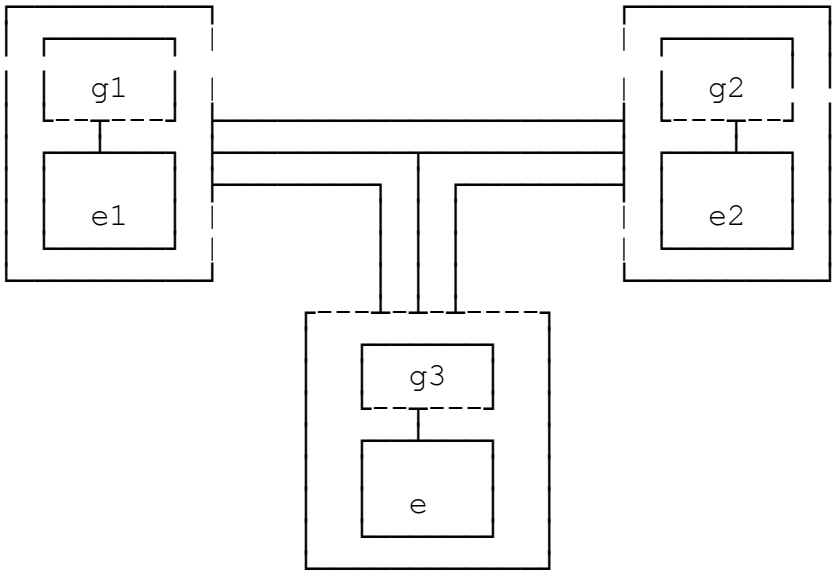
---

39. Note that the transformations which take us back and forth between [A], [B] and [C] can be applied wherever we have a group of objects unified together, some one of which is relatively insignificant in relation to the whole. Thus we say that the button is on the one hand a *part of* the coat, and on the other hand *on* the coat. There is no contradiction here, since two different oppositions are at work. On the one hand 'coat' means the object to whose constitution the button belongs, on the other hand it means an object which is made exclusively of textile material (p. 898).

different ways of formally articulating strictly identical material. The fact that the material in question is intrinsically non-aggregative will however imply that distinct but mutually complementary accounts are obtained when its structure is projected diagrammatically in the manner indicated.

Things do not stop here however. For even in relation to the relatively simple structure so far treated, there is yet another parsing which results when we abstractly imagine the whole [C] as having been once more prized apart, in such a way as to yield three new, qualitatively determined moments, somewhat as follows:

[D]



For just as we can conceive the complex in [A] as possessing a certain characteristic whole-property, so we can conceive the different parts of this complex as possessing their own characteristic *part-properties* in virtue of which they come to make up that total whole which is the original Gestalt. Consider for example the distinction between two descriptions of an orchestra, one of which lists the separate players and describes the total effect of their playing together, the other of which lists the individual instruments and groups of instruments and describes how each contributes to this total effect.

Ehrenfels and the Meinongians did not recognize such part-properties (properties holding of given elements in virtue of their serving as foundation for a Gestalt). The crucial ontological step was taken by Wertheimer in his discussions of phenomenal 'roles'
or 'functions' which can be predicated exclusively of parts *qua* parts, just as whole-properties can be predicated exclusively of wholes *qua* wholes.[40]

Part-properties may on occasion be entirely trivial. If I see the structure:

* * *

then I have before me part-properties of *being extremal*, of *being in the middle*, and so on.[41] Even in relation to such simple cases, however, we can see that where, according to Ehrenfels, the only dependent properties – i.e. the only properties which can gain existence through unification and lose existence through isolation of their carriers – are whole-properties, part-properties, too, are existentially sensitive in just this sense.

But they are existentially sensitive to different degrees. For part-properties include not only the properties of dependent, integrated parts (the character of 'across' in Wertheimer's phi-phenomenon, for example); they include also properties characteristic of *natural* parts, of parts which manifest a (relative) insensitivity to isolation. One can indeed imagine a morphological theory – analogous, perhaps, to René Thom's theory of catastrophes – which would classify part-properties according to their stability and instability when the corresponding wholes are subjected to certain kinds of change.

---

40. Similar ideas are to be found in the 3rd of Husserl's *Logical Investigations* which may have influenced Wertheimer here. Among psychologists the concept of part-property had been introduced before Wertheimer by F. E. O. Schultze in 1906 as the concept of what he called *effect-accents* (*'Wirkungsakzente'*). Schultze did not see, however, that such properties can be treated in correlation with whole-properties: he contrasted the theory of effect-accents with that of Gestalt qualities, but did not integrate the two (cf. again Rausch 1966, p. 894). Ideas like those of Wertheimer on functions and roles have recently been given new life in the doctrine of *qua*-objects developed by Fine (1982).

41. Cf. Nicod 1969, p. 65.

A whole made up of natural parts is a weak Gestalt.[42] The weak coherence *between* parts is balanced by strong coherence *within* parts (and clearly we have to deal here again with a complex spectrum of cases). One particularly interesting variety of weak Gestalten are dependent Gestalten which depend for their existence on our subjective articulations.[43] As Koffka puts it:

> We find the field organization under certain circumstances dependent upon attitudes, i.e., forces which have their origin not in the surrounding field at all, but in the Ego of the observer, a new indication that our task of investigating the surrounding field alone is somewhat artificial, and that we shall understand its organization completely only when we study the total field which includes the Ego within its environment. (Koffka 1935, p. 149)

Weak dependent Gestalten are most prominent in the sphere of social wholes. Here, however, the job of articulation and integration is carried out not by some external observer but from within, by the members themselves, i.e. by those natural parts of the relevant social whole who are human beings. Such articulation from within will be effected to different degrees by different persons, reflecting the relative predominance of the groups to which they belong within the whole in question. All government and law presupposes Gestalt articulation in this sense, which manifests itself for example in feelings of respect or loyalty on the part of the constituent subjects: they see these and these actions as legitimate *actions of state* and not for example as the posturings of usurpers. Clearly here, too, there is a spectrum between weak and strong Gestalten, reflecting the extent to which the relevant articulating and integrating habits are well-entrenched among the people or merely imposed upon them from above.

We must return, however, to our more homely, perceptual examples. Clearly each sequence of notes that is a melody possesses a certain whole-

---

42. Cf. Köhler 1920.

43. We could say that for Ehrenfels it is in every case the personal unity of consciousness which is the properly integrating moment of a Gestalt. For when elements are divided among different consciousnesses their unity is lost. (Cf. Rausch 1966, pp. 888f.) Benussi, too, investigated the properties of different kinds of dependent Gestalten: see especially his 1904.

property, each single note (and segment) possesses its own part-property (role, function), the latter being not restricted to those cases for which we have names (tonic, dominant, leading note, cadence, trill, etc.). (Rausch, pp. 892f.) More important still, however, is the fact that – as Ehrenfels comes near to recognizing – the discipline of linguistics deals precisely with whole- and part-properties in this sense: properties such as *sentence*, *intonation pattern*, *subject*, *verb*, *object*, *phoneme*, *fricative*, and so on, and with the relations between them.[44]

From Ehrenfels' point of view, a Gestalt quality (whole-property) disappears when we isolate its parts. A thesis of this sort can be formulated also for part-properties, and we can see that it holds (to a degree) only for certain quite specific kinds of 'natural' part (for example of stones in a heap, where the property of being for example at the top of the heap simply disappears when the heap is taken apart). Rarely, however does isolation of parts lead to a mere loss of properties: neither whole-properties nor part-properties are simply added extras which spring into existence at the moment of unification and disappear on isolation. For isolated parts *qua* isolated have peculiar characteristic features of their own, which depend on the one hand upon the peculiar features of their new environment and on the other hand upon what they bring with them from the old.[45]

Suppose, for example, that we isolate a group of tones that had previously been a part of a melody. The tones are not simply poorer by the part-properties they had in the melody. They exchange these part-properties for new 'isolation-properties', for example the property of being given as figure, alone, against a ground of silence, of being in need of completion (for example where the group in question ends on a leading note), and so on. Or consider an isolated coloured fleck. This, too, must appear in some specific way against a background of some sort, and then it may manifest itself either as incomplete, as

---

44. The conception of linguistics as a study of successive levels of interrelated part- and whole-properties has been canvassed by Roman Jakobson (see e.g. Holenstein 1975 and the references there given). Compare also Harris 1951 for similar developments within American structural linguistics.

45. See Rausch 1966, p. 899 and compare Husserl, LU VI § 9.

'lost' or 'homeless', or as an alien body smuggled into an environment in which it does not belong, as a disturbance in or defect of its environment, or alternatively as independent and self-contained. A true isolation in the phenomenal sphere, an elementary sensory experience pure and simple, does not exist.

But what applies in the sphere of phenomena applies also to (naturally occurring) parts in general. A part does not, on being separated, exist merely *in vacuo*, but always in some context in which it contributes to new Gestalten and thereby undergoes various functional changes within itself. A Japanese glass pyramid appears in one context as a fitting, proper part of its environment; translate it to a different context, and it will stick out as an alien body.

The problem of part- and whole-properties should not, however, be treated from a purely synchronic point of view. Parts which have been subject to isolation may grow into unified wholes in their own right, or they may become merged into their new environment in such a way as to lose their properties of isolation. Wholes may come to manifest a high degree of inter-partial unity because their parts have grown together, for example as a result of sharing historically a common fate. And such diachronic factors may manifest themselves also on the subjective side: the experiencing subject learns to accept the belonging together of parts which had previously seemed to be merely separate or indeed incompatible. This subject may himself be changed by what he experiences, so that he begins to see a whole because he himself has become, as it were, caught up in its web.

This may suggest the idea of a refined production theory which would operate not at the level of the single act but at the level of whole sequences of acts and actions spread out in time. The fact that one may not grasp the structure of a complex directly, but that it may take time and effort, would not however support the Graz thesis of productive activity at the expense of the Berlin theory. For the fact that Gestalt phenomena arise as objects of experience as a result of intellectual-cognitive processes of certain sorts is precisely emphasized by the Berlin Gestaltists – they insist only that such processes do not go to work on fundamenta which remain invariant: process, initial material and final result are themselves *gestaltet* or reticulated together, in ways which can be understood by us only abstractly.

6. *Conclusion*

Both the Austrian and the Berlin Gestalt psychologists distinguished themselves by a high degree of concern for the philosophical implications of their work. In the end, however, it must be accepted that this concern did not go far enough. As is seen above all from the lack of any substantial and formally fruitful logical treatment of the wealth of notions clustering around the Gestalt idea, a truly adequate mastering of the philosophical difficulties which surround this idea has never really taken place. And while the brilliance and experimental ingenuity of Wertheimer, Köhler and Koffka led to many empirical advances over the earlier work of their colleagues in Graz, even the proponents of the Berlin theory lacked a wider philosophical framework of the sort that had been provided for the Graz psychologists by Meinong and by Brentano.

As Brentano himself stressed, philosophical clarification of this sort is needed in virtue of the fact that, without an awareness of the nature and interrelations of the objects with which it deals, an empirical science is in a certain sense performing experiments in the dark. I do not claim to have provided the needed ontological clarification of the Gestalt concept here. I do however claim that it is as much as anything else in virtue of the lack of such clarification that the Gestalt idea has failed to establish itself securely within the mainstream of psychology.

This is a strong thesis, and it will be useful if I break it down into a number of weaker constituent theses, making it clear that I do not feel equally strongly about all of them:

There is first of all the assumption that the Gestalt idea, in any of its variants, has in truth failed to establish itself within the mainstream of recent psychology. There was, especially in the '40s, much talk of a 'convergence' of (e.g.) behaviourism and Gestalt theory, or of the absorption of Gestalt insights by one school of psychologists or another. And it is clear that certain elements of the work of Wertheimer, Köhler, Koffka, *et al.*, and indeed of Mach and Ehrenfels, have come to be absorbed into the science of psychology as a whole. Thus it may be correct to suppose, with Helson in his paper of 1969, that it was Köhler who first evolved a conception of psychic activity which made possible a serviceable physiological approach to the workings of the mind in the modern sense. It may be correct to suppose that workers in the Gestalt tradition such as

Wertheimer, Bühler, Duncker and Selz anticipated and indeed influenced modern debates on the possibility of a computational or information-theoretic approach to psychic processing. And it is certainly correct to suppose that many of the empirical facts about the perception of movement and contour and about perceptual constancy and perceptual illusions - facts we now take for granted - were discovered in the classic experiments performed by Benussi, Wertheimer, and other Gestaltists. But none of this changes the fact that the central ontological idea of Gestalt structure has all but vanished from psychology.

Secondly, there is the claim that there is a lack of ontological clarification on the part of Gestalt psychologists of the notions they employ. Now there is, certainly, interesting philosophical work within the Gestalt tradition. The writings of Rausch, above all contain philosophical investigations of a high order, and what has been offered above is only a sample of the wealth of ideas within his works. Rausch combines the insights of an experimental psychologist with a grasp of the techniques of modern logic, and he has succeeded in addressing many of the most pressing ontological issues surrounding the notion of Gestalt in ways that have proved also empirically fruitful. Yet Rausch has been an isolated figure, his work has remained practically unknown and entirely untranslated, a fate he has shared with the earlier Austrian writers on the ontology of Gestalt, including Ehrenfels himself. The work of Meinong, too, has been little read by psychologists, and Meinong is today remembered principally for his contributions to pure ontology. Stumpf, on the other hand, has suffered the opposite fate: he is treated with respect as a seminal figure in the psychology of music, yet his posthumous philosophical masterpiece on the theory of cognition remains unread.

There is, thirdly, the assumption that, if the appropriate ontological clarifications of Gestalt were forthcoming in an accessible form, then the present unhappy state of affairs would come to be rectified and Gestalt notions would once more play a significant role in psychological inquiries. I am not sure about this at all, and not only for reasons having to do with the gratuitous and serendipitous character of scientific change. For I am not sure that such clarifications *can* be provided. Moreover, it seems that even if they were provided, there may still be reasons why the nitty gritty of perceptual psychology would have to be centred around problems skew to a Gestalt-theoretical treatment. There are, however, areas outside perceptual

psychology - above all in linguistics and in cognitive science, above all in work on connectionism - where ideas and issues similar to those found in the Gestalt tradition seem once again to be playing an important role.

Finally, there is the thesis to the effect that the attempt to provide such clarification is worthwhile. And here I should like to insist very strongly that the ideas of Mach and Ehrenfels, of Meinong, Benussi, Witasek and Bühler, of Wertheimer, Köhler and Koffka, of Lewin, of Musatti, Metzger, Rausch, Kanizsa and Bozzi, of Heider and Michotte, contain the germ of an important idea, an idea which - if it can be stripped of the exaggerated claims which were sometimes made on its behalf - can help us to achieve a deeper and more adequate understanding of both psychological and non- psychological complexity. There is, in other words, more than a merely historical reason for studying the works of the Gestalt psychologists.