

1. Acts and relations

1.1. *The problem*

'What is characteristic of every mental activity', according to Brentano, is 'the reference to something as an object. In this respect every mental activity seems to be something relational.'¹ But what sort of a relation, if any, is our cognitive access to the world? This question – which we shall call Brentano's question – throws a new light on many of the traditional problems of epistemology. To take it seriously is to treat epistemology, or much of it, as applied ontology. For to affirm or deny that our cognitive experience is relational is to say nothing unless a clear account is given of what 'relational' might actually mean. Our task, then, is to supply an ontology of relations which is sufficiently general as to allow of application also to the domain of epistemology, an ontology which will mesh with our understanding of mental or cognitive phenomena.

The beginnings of such an account are indeed provided by Brentano and his immediate followers, but the ontological investigations of Brentano, Stumpf, Meinong, Twardowski, Ehrenfels and Marty reach their high-point in the *Logical Investigations* of Edmund Husserl. In a series of papers companion to the present essay we have sketched something of the implications and background of the ontology put forward by Husserl in this work.² Here we wish to *apply* the theory to the structures of our mental acts. We shall seek to show that Husserl's ontology allows the formulation of what seems to be a quite new sort of answer to Brentano's question.

1.2. *On the meaning of '– is real'*

To adopt an ontological approach to mental acts is to affirm that mental acts are denizens of the real world

and that they are capable of being described, objectively, in a way which is no different in principle from the ways in which other real objects may be described. Such an approach is in keeping with at least the first edition of Husserl's *Logical Investigations*.

The terms 'object', 'entity', 'real', 'exist', etc., are of course notoriously difficult to fix unequivocally. Henceforth we shall use 'object' in a technical sense, to encompass only individual things and the states, processes and events bound up therewith. We shall use 'entity' only where a determinable term is needed to encompass also, for example, ideal entities such as meanings, species and numbers, or fictional or possible entities, or irrealia of other sorts. Our own ontological commitments will turn out to be rather lean, and in presenting our positive views we shall as far as possible avoid talking as though there were non-existent entities – or indeed any entities outside the domain of what is real and individual. But a term will be needed, nonetheless, to encompass whatever our philosophical foes think they are referring to when they use referring terms for what they think of as irrealia.

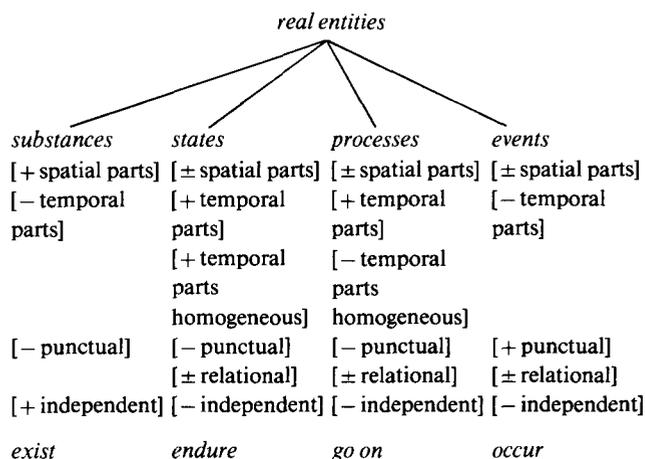
The expression 'is real' we take to signify 'is temporally – sometimes spatio-temporally – existent'. It is thus to be understood in contrast to 'is abstract' and 'is ideal', both of which we take as synonyms for 'is non-temporally existent'. We shall assume further that the totality of what is temporally existent is exhausted by the four above-mentioned categories of *substance* or *continuant*, *state* or *condition*, *process* and *event* – a harmless simplification, given that we shall be concerned in what follows exclusively with the interconnections between certain materially specific sorts of objects in these four categories. We are *not* being so bold as to offer an all-embracing theory of time and space, and indeed what we have to say will be sufficiently general (or vague) to be compatible with a variety of different accounts of what it is to be spatio-temporal.

Examples of individual things or substances are: a man, a planet, a stone. Examples of states or conditions: a knowledge of Greek, a state of bliss, a specific gravity, a particular whiteness or hotness. Of processes: a deliberation, an orbiting, a heating. Of events: an explosion, an impact, a death. Substances *exist*, states *endure*, processes *take time* or *go on*, events *occur* or *take place*.

Substances are distinguished from entities in the other categories by the fact that they must have spatial parts.³ They are distinguished from states and processes by the fact that they have no temporal parts. The parts of Hans are his arms and legs, his hair and cell-tissue, not his childhood or his death (though these are processes which Hans undergoes). A process has temporal parts which are not homogeneous. (There is some partition of the process into heterogeneous constituent phases.) A state is characterised by the fact that, whilst it has temporal parts, each such temporal part is homogeneous with all the others (partition into phases yields homogeneous sub-states). A state may however be more or less closely associated with processes whose temporal parts are not homogeneous: a state of hotness, for example, with complex processes of certain molecules. Events are distinguished from objects in the other three categories in being *punctual*.⁴ They are temporally extensionless boundaries of processes or states.

States, processes and events are all *dependent* objects: they depend for their existence, directly or indirectly, on one or more associated substances. An electric charge, for example, depends for its existence on some one or more conductor. A conversation depends for its existence on some two or more interlocutors, and so on. Dependent objects may accordingly be either *relational* or *non-relational*, according to whether they depend on a multiplicity of substances or on one substance only. We shall put this point also by saying that states, processes and events – but not substances – exhibit the feature [\pm relational]. States which are [$-$ relational] are also called *individual properties* or *qualities*. Non-relational dependent objects in general have been referred to in the tradition as *individual accidents* or *moments*. What moments are dependent on are also called their *fundamenta*.

Expanding this feature-vocabulary in the obvious way yields the following classification of realia:



There are a number of simplifications in this taxonomy, turning most importantly on the fact that it leaves out certain classes of temporally existing objects which are for our purposes less central. These include:

- (i) states of affairs or *Sachverhalte* (for example the state of affairs that Mary is blushing),
- (ii) spatial boundaries, (surfaces, volumes, places, points, and the like);
- (iii) complexes, *Gestalten*, higher-order substantial continuants such as ballet companies and planetary systems;⁵
- (iv) higher-order non-substantial continuants (waves, disturbances, fields of force, etc.);
- (v) masses of stuff;
- (vi) aggregates, manifolds, groups, collections.⁶

What the entities in these categories have in common is that, like substances, states, processes and events, they all fall within the broad class of *realia* as defined above. We can afford to ignore (i), in particular, because nothing in what follows will turn on the distinction between acts which are and acts which are not propositionally articulated (i.e. between acts which have *Sachverhalte* as their objectual correlates and acts whose correlates are objects in the narrower sense).⁷

1.3. *Mental events, mental processes and mental states*

Our strategy, then, will be to apply the taxonomy of substances, states, processes and events to mental entities, in order thereby to throw light on at least some of

the structural features which they involve. We shall assume, in the light of our general ontology above, a rough and ready opposition between mental acts, mental processes and mental states. Mental acts are temporally punctual rememberings, noticings, recognisings, realisings, and the like. Mental processes are temporally extended considerings, wonderings, observings, deliberatings, and the like. Mental *states* are for example states of conviction or belief, or of non-episodic love or hate. These neither occur nor go on but rather endure. Each act serves as a boundary between one mental state or process and another. A judging serves as the initial boundary of a state of belief; a deliberating serves as terminal boundary of a process of deliberating, and so on. Whilst we shall concentrate here principally on mental acts, what we say is, we believe, capable of being extended to cope also with mental processes and states, and with the hierarchical and horizontal structure – as opposed to the simple structure of *succession* – which comes into view when account is taken of the fact that acts and processes may be dependent on at least some varieties of underlying state.⁸ It is only when this extension has been effected that justice can be done to the character of mental experience as a continuous flow: talk of mental acts alone may too easily give rise to the false impression that consciousness is made up of a succession of isolable bits (is just one damned act after another).

1.4. *Relational and non-relational acts*

We can now return to Brentano's question, posed above. Some acts, we want to claim, are relations – in a quite specific sense of this term – linking subjects to objects in the world. Now as Brentano, Twardowski and above all Meinong recognised, if *all* acts are conceived as relations, then ontological status must be granted also to non-existent entities, for it seems that only the latter could serve as the relata of, for example, acts resting on mistaken presuppositions of existence. To conceive of acts as relations seems thereby to lead inexorably to an ontology of non-existents – and most philosophers have been happy to see in this fact a *reductio ad absurdum* of the very idea of relational acts. There is however a further possibility, which seems to have been passed over too quickly. This is to adopt the *prima facie* surely not unreasonable hypo-

thesis that only *some* acts are relational, that only some of our mental experiences bring us into contact with objects in the world.⁹

A view of this sort enables us to restrict the relata of relational acts to objects (in the technical sense of this term introduced above), all of which are straightforwardly real. This in turn enables us to align relational acts with other sorts of real relations connecting what is real to what is real, and thereby to draw on our knowledge of relations in general in order to come nearer to an understanding of what cognition involves.

2. An ontological framework

2.1. *The theory of dependence*

We can produce an adequate description of the structures of acts only by taking seriously the idea that acts, as well as parts and moments of acts, may interconnect or interweave with each other and with external objects in a variety of ways, and by developing an ontological framework within which such interconnection can be acknowledged and described. It is precisely such a framework that is supplied by Husserl in his *Logical Investigations*. Here we content ourselves with a brief presentation of the notions central to Husserl's theory, going over only so much of the ground as is needed to give a more precise sense to our claim that (some) acts are relational.

We define, first of all, a relation of *necessitation* between objects:

D1. *a* necessitates *b* =: *a* as a matter of necessity cannot exist/endure/go on/occur unless *b* exists/endures/etc.

Here the variable terms range exclusively over realia (substances, states, processes, events), all of which are contingently existing objects. None of the definitions makes any sense when applied, for example, to relations involving mathematical and other necessarily existing entities.

We can now define:

D2. *b* is an essential part of *a* =: *a* necessitates *b* and *b* is a part of *a*,

where the term 'part' signifies, as always in what fol-

lows, 'proper or improper part'.¹⁰ The metaphysicians of cognition have in the past shown themselves willing to embrace doctrines according to which the object of an act would be an essential ('immanent', 'intrinsic') part of the act in precisely the terms of our definition D2. Indeed the early Brentano comes near to a view of this sort.¹¹ Here, however, we wish to develop a view according to which an act *a* may be tied to an *external* object, 'tied' in the strong sense that this act could not have existed unless this particular object had existed also. The core notion of *dependence* or *foundation* which is central to Husserl's theory is precisely suited to fill this need:

D3. *a* is dependent on *b* =: *a* necessitates *b* and *b* is not a part of *a*. (LU III §§2, 14)

The apparently rather trivial notion hereby defined turns out to yield a mathematical structure of some considerable elegance and complexity¹² and the associated formal ontological theory proves to be applicable, as Husserl himself saw, to a range of highly disparate domains of examples.

Various associated notions can now be defined:

D4. *a* is independent of *b* =: *a* does not necessitate *b*.¹³

D5. *a* necessarily excludes *b* =: *b* is as a matter of necessity such that there is some independent whole which includes it, but not *a*, as part.

D6. *a* is one-sidedly dependent on *b* =: *a* is dependent on *b* and *b* is not dependent on *a*. (LU III §16)

D7. *a* is mutually dependent on *b* =: *a* is dependent on *b* and *b* is dependent on *a*.¹⁴

D8. *a* is immediately dependent on *b* =: *a* is dependent on *b* and there is no *c* such that *a* is dependent on *c* and *c* on *b*. (LU III §16)

D9. *a* is mediately dependent on *b* =: *a* is dependent on *b* and *a* is not immediately dependent on *b*.¹⁵

The above is a brief catalogue of the basic notions of the Husserlian theory. It will be seen that the modal operators employed take nominal and not propositional arguments (the characteristic form is: '*a* is necessarily such that...', or: 'it is necessary for an *a*

to...', not: 'necessarily, *a* is...').¹⁶ The thesis that states, events and processes are *dependent* on substances can now be seen to amount to the claim that the former cannot as a matter of necessity endure/go on/occur unless the latter exist.

Not all relations of dependence are relations between individuals in the sense of the definitions above. There are also what might be called relations of *generic dependence*.¹⁷

D10. *a* is generically dependent on a *B* =: *a* is necessarily such that it cannot exist unless some *B* exists (cf. Simons 1982, §4);

D11. *A*'s are generically dependent on *B*'s =: every *A* is necessarily such that it cannot exist unless some *B* exists;

D12. *A*'s generically exclude *B*'s =: any *A* is necessarily such that there is some independent whole of which it, but no *B*, is a part;

D13. *A*'s are generically compatible with *B*'s =: *A*'s do not exclude *B*'s.

And we can point out in passing that whilst substances are independent of the states, processes and events with which they are associated, they may yet be *generically* dependent on such objects. Indeed it seems that substances of the sort we find in the real world cannot exist unless at least some states, processes and events are founded in them. Thus a human being, for example, is generically dependent on states of atmospheric pressure, processes of breathing, events of being born, etc.

2.2. Real material relations

The relation of dependence is purely *formal*. That is to say, it can obtain, in principle, between any objects, whatever their material make-up or qualitative determinations. The relation of dependence has no intrinsic material structure of its own; it is not a *material* relation, as are, for example, hittings or crashings, conversations, fights or obligations. Terms for dependence relations do not occupy nodes in a determinable/determinate tree (cf. Mulligan, 1980; Smith, 1981). It is in terms of the formal concept of depen-

dence, however, that the notion of a real material relation – the notion we need in order to formulate our claim that there are relational acts – will be defined. A real material relation is, simply and provisionally, any object r which is founded one-sidedly on two (or in principle more than two) further objects a and b , discrete from r and from each other. r is then said to relate a to b . In the simplest possible case it is itself connected to a and b via two distinct (formal) relations of immediate dependence.

This account is provisional because it passes over the fact that r , to be a relation, must be founded *absolutely* on its relata.¹⁸ That is, it must be necessarily such that it cannot exist as something else, cut adrift from its role or status as a relation (as a deed or contract, for example, may exist, *as a piece of paper*, independently of its status as a dependent object).

2.3. Taxonomy of formal and material relations

Real material relations are categorially distinct not only from formal relations (including the dependence relation itself and, for example, relations in mathematics), but also from relations of comparison such as *is taller than*, *is older than*, *knows more Greek than*, etc. Such relations are *material*, but only in the sense that they are described by means of material terms. What might be called the relational core of a comparative – that part of the comparative which does the work of relating the objects compared (insofar as they are related at all) – is purely formal: a matter of similarity and difference, of more and less. To see this, it is necessary to look behind the traditional conception of relations of comparison as relations holding between substances (Hans is hotter than, wiser than, more tired than, Erna). One thereby discovers that, at least in the majority of cases, it is not substances but rather individual states – and dependent entities in general – which are the immediate relata of such relations.¹⁹ Thus ‘Hans is hotter than Erna’ is made true, we may suppose, by a relation of *difference* between the individual moments which are the heat-states (of differing intensities) inhering, respectively, in Hans and Erna. And then the material content of *is hotter than* is as it were distributed between the two relata.²⁰

Once this distribution has been effected, the two relata are seen to fall apart, in such a way that they no

longer have anything specifically to do *with each other* but can serve equally as terms in a potentially infinite number of comparisons. The relata of real material relations such as hittings and kissings, in contrast, cannot be made to fall apart in this way: Erna’s hitting, r , is a hitting *of Hans*; it is not a hitting of anyone and everyone who happens to play a role as patient of a hitting qualitatively identical with r . Hence the relational core of such relations cannot be shown to be merely formal.

To put this matter in another way, we could say that relations of comparison are not *real*, in the sense that they have no material *of their own*.²¹ They are not objects in their own right, and thus they cannot stand in foundation relations with other objects.

2.4. Real relations vs Cambridge relations

Some additional light can perhaps be thrown upon the nature of real material relations if we compare them with what Geach has called ‘Cambridge changes’ (1972, p. 321). Consider, first of all, the contrast between Hans’s becoming a father and Mary’s becoming a mother. These are quite clearly not changes of the same sort, for the former, as it occurs, need involve no events or processes taking place in Hans, where the latter must involve current events and processes taking place in Mary herself. If, however, we look only at the sentences reporting these events, then this difference is by no means apparent. In both cases we have an exactly parallel change in truth-value over time.²²

The distinction between real and Cambridge entities is not however confined to events such as becomings and ceasings to be. It applies also to states and processes.²³ Thus where some *states* are real states of things (standings, sittings, knowings, believings), other so-called states are merely Cambridge states. Examples would be: Hans’s *being a father* and Karl’s *being a knight*, and in general, whenever *becoming an F* is a Cambridge change Cambridge-occurring at some t_1 , *being an F* will be a Cambridge state Cambridge-enduring from t_1 to some t_2 . Like Cambridge changes, Cambridge states are mere (illusory) reflections of the forms of corresponding sentences, sentences which are logically indistinguishable from those describing real states. Similarly, where some *processes* are real processes in things, other so-called processes are merely

Cambridge processes. Examples would be: Heidegger's gradually losing his popularity; Meinong's gradually becoming better understood.

But now, as we have already seen, events, states and processes may in certain circumstances be relational (may inhere simultaneously in more than one substance). Hence we may suppose that there exist also Cambridge *relations*, that where some relations are real relations holding between objects in the world (hits, kisses, battles, promises), other so-called relations are merely Cambridge relations (are merely reflections of the relational form of certain sentences purporting to describe them). Examples of relational Cambridge events, processes and states might be: Hans's becoming taller than Mary, Hans's growing to be more hated than Gandolfo, or Hans's state of being third cousin to Bertha. Matters are somewhat more complicated, however, since it is possible that events, processes or states which are in themselves real may nevertheless possess a merely Cambridge-relational status. Let us suppose, for example, that the leader of some new-fangled church in Texas conceives it to be his duty to bless, *in absentia*, all citizens of Siberia. The process of blessing then appears to be a relational entity, and *as a process* it is real. But it is not a *real relation*, since it is not founded on its putative right-hand relatum: the very same blessing action could exist even if the population of Siberia consisted of quite different individuals (or no individuals at all). We shall return to this point below.

To distinguish between *real* entities and those putative (non-)entities which exist merely in the Cambridge (Russell/McTaggart) sense, it is necessary to look not merely at sentences of the relevant sorts. One must look also at the associated objects (at whatever it is in the world which makes the given sentences true). We then discover that Cambridge entities are in a certain sense isolated from their surroundings: they are not sensitive to the internal structures of, or affected by changes in, the real objects in the world with which (if they existed at all) they would be associated.²⁴ Thus no real features of any parturition correspond to any features of the Cambridge event which is Hans's becoming a father. No real features of any person in Siberia correspond to any features of a blessing action taking place in Texas. No real features of any Finn correspond to any features of the act which is a purely descriptive thinking about the tallest Finnish spy.

A Cambridge entity is not however entirely cut off

from the real world of what happens and is the case. A Cambridge change, state or relation is reported by a sentence containing a predicate or relational expression which appears to correspond to an entity of the corresponding sort. What distinguishes such sentences is the fact that they are not made true by the putative entity to which we refer when we simply nominalise the given expression.²⁵ A sentence like 'Hans just became a father' may however be true, and then its truth rests essentially on the existence of a real object of a quite specific sort, namely that event which is the birth of Hans's child. The isolation just mentioned consists here in the fact that, if the real changes which make it true that Hans becomes a father are bound up with real changes which occur in Hans himself (if, for example, they involve feelings of happiness on Hans's part), then this is an entirely accidental matter. Hans can become a father without ever knowing of this fact.

It is important not to confuse the opposition between Cambridge and real entities on the one hand, with the distinction between what is formal and what is material on the other. Neither formal entities nor Cambridge entities are real entities in the sense understood in this paper. Formal entities are however distinguished by the fact that they are described in sentences of *special sorts*, sentences involving formal terms like 'object', 'property', 'whole', 'function', 'set', used in abnormal ways.²⁶ Cambridge entities, in contrast, are described in (and exist merely as reflections of) sentences which seem perfectly homely, sentences containing material terms which are syntactically indistinguishable from those used to describe *bona fide* realia.

3. The theory applied

3.1. Preamble

Every act is, in the sense of the above account, a real event. It is also a dependent or founded object, is such that it cannot occur unless something else, its subject, exists. Note, however, that the nature of this subject – of whatever turns out to be the left-hand fundament of relational and non-relational acts – is here left entirely unspecified. Our theory is consistent, for example, with a view of this left-hand relatum as the relevant hard-wiring in the human brain. All that is required for the relational theory is that acts are [\pm relational]

events, mediately or immediately founded on human beings.

There are foundation relations also amongst acts themselves. Some acts are dependent on other acts (a feeling of nausea, for example, upon a current presentation; a feeling of regret on a presentation of some event in the past), and all acts have parts which stand in foundation relations to each other (LU V §§18ff). The thesis of the relationality of acts can now be reformulated as consisting in the claim that some acts are dependent also on their *objects*: they are necessarily such that they cannot occur unless their objects exist.²⁷

That act *r* be founded on object *b* is a necessary condition for *r*'s being a relational act directed towards *b*, though it is not by any means sufficient.²⁸ Our concern here however is not to specify in full the conditions for an act's being relational. It is rather only to exhibit the thesis of relationality as at least one option in the treatment of acts, and to display some of the advantages of this option. To this end it will be useful to consider briefly the various potential categories of *non-relational* act. These divide into two groups:

(i) *Veridical non-relational acts*, i.e. acts which have objects, but which for different reasons, fall short of relationality. Acts in this category are typically *descriptive*, i.e. they are directed towards what is individual in some sense via what is general. Such acts may be divided further into:

(a) Acts which are directed (targeted) towards transcendent realia but are not relationally in contact therewith: for example an act of thinking about the mother of Mary, or about the tallest spy.

(b) *Descriptive acts* directed towards one's self or towards one's own acts.²⁹

(c) Acts directed towards ideal or abstract objects (if these can be counted as veridical at all).

(ii) *Non-veridical acts*, i.e. acts which lack objects entirely. Examples might be: acts of thinking about fictions or about entities appearing in dreams; acts of thinking about merely possible or impossible entities.

What will annoy the phenomenologist, in this taxonomy, is that it may not be possible for the subject to tell, in any given case, to which of the categories his acts belongs. Indeed all assignments of acts to the different categories are at best of a rough and ready nature and are even to some extent subject to the vagaries of fashion. Thus acts which, when executed, were putatively classified as being veridical (because

directed towards the god Jupiter), are nowadays unproblematically assigned to the category of non-veridical acts.³⁰ There are, however, certain candidate examples of relational acts where this problem of apparent arbitrariness in our classifications seems not to arise. It seems that – ignoring philosophers (who have been known to engage in special pleading on this point) – all subjects have a tendency to assign their ordinary perceptions to the category of relational acts (a tendency which is of course perfectly consistent with the fact that subjects grant the possibility that perceptions may rest on error in isolated instances). And indeed where philosophers have put forward ontologies of cognition which approximate, in different ways, to the relational view presented here, they have generally been tempted to regard acts of perception as the only unproblematic examples of relational acts. But must relationality be restricted to perceptual cases?

3.2. *The inheritance of relationality*

Imagine, say, a sinologist, going through the Peking daily papers in his office in Boston. At no time does he perceive the objects of his thoughts. Yet one might nevertheless argue that he is in relational contact with these objects, that there is such a thing as the *inheritance of relational dependence*.³¹ We are concerned, quite generally, with those sequences of acts which involve a transition from the relatively relational to the relatively descriptive. What kinds of considerations can be brought forward in drawing a line, in such cases, between relational and non-relational cases? We might represent such sequences, in the simplest possible case, somewhat as follows:

$$a_1, p_1(a_1), p_2(a_1), a_2, \dots$$

where '*a_i*' signifies some relational act and '*p_i(a_j)*' signifies an act in which one or other sort of processing has taken place (for example an act in which an assertion is perceived and understood). Such sequences will typically involve cumulative processing in one or another cognitive direction (via inference, combination of contents, and so on),³² giving rise to sequences of the following sort:

$$a_1, p_1(a_1), p_2(p_1(a_1)), p_3(p_1(a_1)), p_4(p_2(p_1(a_1))), \\ p_5(p_1(a_1), p_2(p_1(a_1))), \dots,$$

where combination of contents a_i, a_j – for example in a process p_k of conjunction – is symbolised as ‘ $p_k(a_i, a_j)$ ’. There is then an immediate dependence relation between each successive p_k and the acts which it directly governs: a processing of a, \dots , cannot as a matter of necessity exist, unless a, \dots , also exist.

Our sinologist receives successive bits of information and registers and processes this information in various ways. The bits of information serve, we might suppose, as the contents of his initial acts, and then each such content is qualitatively similar – in part or in whole – to contents inside Chinese journalists’ heads. We can in fact assume quite generally that there will be a qualitative similarity between part of the content of each given act a and part of the content of those acts $p_i(a, \dots)$ which are immediately dependent on a . No such relation need however hold between a and subsequent members of such a chain, members in which $p_i(a, \dots)$ has itself been subjected to further processing. In other words, the cumulative results of mental processing are such that dependence-structure (etiology) and content-structure (anatomy) may vary independently. We can represent this second dimension of variation by means of a similar functional notation employing brackets of a different kind, so that ‘ $p_k[p_i, p_j]$ ’, for example, will signify that the content of p_k overlaps with the contents of p_i and p_j and with the contents of no other acts. Each sequence of acts may now be described by means of two parallel sequences of functional expressions of the given sort, for example as follows:

a	$p_1(a)$	$p_2(p_1(a))$	$p_3(p_1(a))$	$p_4(p_2(p_1(a)))$	$p_5(p_1(a), p_2(p_1(a)))$	$p_6(p_1(a), p_3(p_1(a))) \dots$
a	$p_1[a]$	$p_2[p_1]$	$p_3[p_1, a]$	$p_4[p_2]$	$p_5[p_1, p_2]$	$p_6[p_3] \dots$

Different accounts can now be given of the inheritance of relationality in such a chain. On the most liberal view, any relationality of the first member a will be inherited by *all* the subsequent members that are dependent on a . Thus if a is relational, then $p_1(a)$ will be immediately dependent on a and mediately dependent on whatever it is in the world on which a is dependent. A stricter view would impose also conditions on survival of content, affirming (in the terms introduced above) that an act p_i inherits the relationality of a only if there is a qualitative identity between some of the content of a and some of the content of p_i . Or one may impose the condition that relationality is

inherited only by those acts sharing an identical *object*.

3.3. Relationality and perception

What we have provided so far is a purely abstract structural description of how the structures of mental acts – either of one or of a community of subjects – may develop over time. The account given can however clearly be extended in a number of ways. Thus it can be extended to take account of the peculiarities which arise where we have to do in a single sequence with acts of distinct subjects.

Something must be said also, however, about the initial members of chains of the given sort. In particular, we must raise the question whether there are ultimate initial acts, acts which are such that they are neither dependent on nor such as to overlap in their content with the contents of previous acts. A range of possible answers to this question have been considered in the history of philosophy. Thus the empiricist thesis that all knowledge is derived from sense experience consists, in effect, in the claim that knowledge is carried only by those sequences of acts of *a single subject* whose first member is a perceptual act. Translated into our present terminology this might amount to something like the claim that every non-perceptual act of a given subject is at least mediately founded on a perceptual act further back in the same sequence. Now there seems to be no good reason to

accept such a claim. It seems much rather that for any naturally occurring array of simultaneous mental events (any cross-section through the mental lives of a community of cognitively interacting subjects), the actual cases where a subject’s knowledge of objects rests on his own perceptual contact would be outweighed by cases where it rests on mediated access of other types. There is a division of the labour of relational contact.

A special place does however come to be awarded to perceptual acts when we consider the role of evidence in our cognitive experience. It is clear that, whenever the content of a mental act is expressed by a

subject, it will make sense to ask him what evidence he has for what he says. And such evidence will – at least for many sorts of acts – consist predominantly of (reports of) perceptual experiences. But it is equally clear that relational content may obtain between a subject and an object even though the owner has no recoverable evidence at his disposal at all.³³ The thesis that perceptual evidence is always recoverable has however found its advocates. Some philosophers have claimed that each and every assertion a_i can be processed in such a way as to yield an act whose content overlaps with a perceptual act on which a_i is dependent. The implicit assumption that such recoverability can throw light on the nature of our contact with the world seems, however, to reflect Cartesian assumptions as to the ‘transparency’ of consciousness whose validity may well be called into question against the background of a relational theory.

One reason for awarding a special status to perceptual acts rests on an appeal to the immediacy of the relationality that is involved in the perceptual case. Only on the most restricted of views, as we have seen, is relationality confined exclusively to perceptual acts. A less restricted view can admit not merely such *immediately* relational acts but also *mediately* relational acts appearing further down the chain of dependences.³⁴ This gives rise to a family of qualitatively different varieties of inherited relationality. Thus Bruno sees a hat before him and wonders, momentarily, about *the owner of the hat*: his seeing is an immediately relational act, the wondering is a *mediately* relational act whose directedness is parasitic upon that of the seeing. Erna wants to see love, or pain, in Hans’s face: her seeing of the face is a relational act which provides the foundation for her *mediately* relational act of wanting, which then suddenly becomes fulfilled in a further immediately relational act of seeing love, or pain.³⁵ Bruno thinks about the price of apples; his act of thinking is *mediately* relational to the extent that it is dependent on a complex series of past relational acts directed towards, among other things, apples, coins, linguistic marks. Maria is reading a work of symbolist fiction; her acts of thinking admiringly about (as she conceives things) the heroic Gandolfo are *mediately* relational to the extent that they are dependent on the immediately relational acts of perception of signs involved in her reading. And now, one grain of truth in the thesis that relational contact is restricted to simple perceptual

cases lies in the fact that our acts seem always to occur within an environment which includes some immediately relational elements of this sort.

3.4. *Relationality across time*

In the standard perceptual case, the relational act and its relata exist *at the same time*. Even in cases of, say, the visual perception of distant stars, which may well have ceased to exist many millions of years ago, there is still some *moment* of the star, the light it has emitted, which exists simultaneously with our perception of it. It seems, in fact, to be a property of every perceptual act that some relatum on the side of the object, a relatum which is discrete from and independent of the subject, exists simultaneously with the act. Every act of perception is dependent on its object in the sense that it cannot, as a matter of necessity, occur, unless its object or a moment of its object exists.

We can however lift this restriction and admit relational contact even with past realia none of whose moments outlive them in this sense. We can, for example, award the status of relationality to *simple memory acts*. Erna’s act a of remembering a given event b is then necessarily such that it cannot occur unless some other act c of experiencing b has previously occurred in Erna, where c is then in turn necessarily such that it could not have occurred unless b occurred.

A still more ambitious move would be to admit relational contact with what *will* be real (my act of looking forward to tasting next year’s vintage). That there are certain partial analogues of dependence relations pointing into the future was recognised above all by Husserl’s disciple Adolf Reinach in his masterly anticipation of the theory of speech acts in Volume I of Husserl’s *Jahrbuch*.³⁶ As we should expect, the modality involved in such relations is not necessity, but something weaker, a *non-accidental tendency*. Thus consider the action of promising, an example which Reinach discusses in great detail. When someone makes a promise, it is normal or typical that certain actions follow, directed at bringing about the content of the promise. The relation between the promising and these subsequent actions – like the relation between an episodic desire and actions executed in bringing about the content of the desire – is stronger than mere compatibility or concomitance, but weaker than necessitation. A promise, we can say, establishes

a non-accidental tendency towards the realisation of its content.

As Reinach saw, speech actions such as promises, orders and requests may be subjected to a range of *modifications*. One can carry out an order, for example, *in the name of another*, or one can carry out a *conditional* order (*if A occurs, do B*). A special case of this latter modification, applying specifically to orders, is illustrated by the schema:

if you choose to accept my authority, do B.

As Reinach himself points out, such conditional social acts are such that “their effectiveness is linked to the occurrence of [or] made dependent on, a future event” (1913, p. 196).

Husserl, like Brentano before him, also recognised certain relations of this sort amongst acts, for which he employed the term *motivation*.³⁷ When a belief is held because one holds other beliefs, the latter beliefs are said to *motivate* the former. Thus for example:

Certain objects or states of affairs of whose reality someone has actual knowledge indicate to him the reality of certain other objects or states of affairs in the sense that his belief in the reality of the one is experienced (though not at all evidently) as motivating a belief or surmise in the reality of the other. This relation of ‘motivation’ represents a descriptive unity among our acts of judgment in which indicating and indicated states of affairs become constituted for the thinker. This descriptive unity ... amounts to just this: *that certain things may or must exist, since other things have been given*. This ‘since’, taken as expressing an objective connection, is the objective correlate of ‘motivation’ taken as a descriptively peculiar way of combining acts of judgment. (LU I §2, pp. 270f, our emphasis)

To see how these reflections may be applied to the case of future-directed acts, acts whose objects lie in the future, we might consider the example of an act of foresight. Such an act is necessarily such that it cannot occur unless (i) there subsequently occur events of the relevant sort and (ii) these events are ancestrally connected in some way – to be more precisely specified from case to case – to that which provoked the initial act. Such an act is, however, not a relational act in the strict sense, for it is not directed towards and dependent upon a specific individual object. It is rather *generically* dependent upon some instance of the species specified in its content (cf. §2.1 above).

4. Husserl and the relationality thesis

4.1. *Relationality vs mere co-existence*

The apparatus of foundation relations is applied by Husserl to the relations between acts and parts of acts in such a way as to yield a great deal of what would be required for an adequate ontology of cognition. But it is noteworthy that Husserl himself scrupulously avoided going into the problem of the foundation relations, if any, between acts and their objects. The *Logical Investigations* assumes that all that is to be said about acts can be said by describing their internal structures and their interrelations, especially the interrelations amongst acts succeeding each other over time – for example in processes of verification.³⁸

Husserl concedes the existence of real mental acts and of act-independent objects – it would be difficult to take him seriously if he did not – and he is able to give an explication of what it might mean to say that acts are in some sense correlated with objects in the real world. But he is not committed to *sui generis* relational acts. That Husserl does not even consider the question of the applicability or non-applicability of his theory of dependence to the connections between acts and objects is made all the more remarkable by the fact that he repeatedly affirms that this theory is to be applied also outside the psychological domain, as also by the fact that he himself discusses applications of the theory to, for example, relations involving causality. (Cf. e.g. LU III §25.)

The only relation between an act and its object to which Husserl is committed is that of *actual co-existence*, a relation clearly much weaker than that of dependence. Such co-existence reflects a relation of *compatibility* (cf. Section 2.1. above). It is an actualisation of the possibility built into the structures of certain acts that there may exist corresponding objects: acts may have or lack objects just as judgments may be true or false.³⁹ Thus in the present paper we have in effect used Husserl’s general theory of dependence relations to go beyond Husserl in relation to the specific material sphere of acts. It must however be stressed that even the recognition of mere co-existence as a relation (of sorts) between acts and their common or garden *objects* is a great advance over positions according to which our acts are directed towards e.g. images, or sense data, or towards abstract ‘propositions’.

4.2. *The Lockean prejudice*

In the course of the 2nd Investigation Husserl takes up what he calls the ‘Lockean prejudice’ – shared also by Brentano – according to which

the objects to which consciousness in its acts is immediately and properly directed ... must necessarily be mental contents, real [reelle] occurrences in consciousness. (LU II §22, p. 381)⁴⁰

To those who have fallen victim to this prejudice – and they are legion – what is outside consciousness can be at best the mediate object of a conscious act, in the sense that the immediate or primary object of the act serves as its representative, image, or sign. Such a theory introduces a gulf between what we would normally think of as the straightforwardly real objects of our acts and these acts themselves. It gives rise to a conception in which there would be no real contact between subject and object but only an incidental *satisfaction* of our acts, by objects in a realm from which we are separated – as if we were somehow to gain *all* our knowledge of the objects in the world via descriptions communicated over long-distance telephone lines. But now the Lockean prejudice can be seen to break down at just this point. For however dense the stream of descriptions, there remains a qualitative difference between this kind of mediate knowledge, veridical though it may be, and the knowledge we have by grace of our access to objects with which we come into perceptual and other sorts of relational contact.⁴¹

The early Husserl himself is quite clear about the fact that perception yields *direct* knowledge of objects of the given kind:

In sense-perception, the external thing appears ‘in one blow’, as soon as our glance falls upon it. The manner in which it makes the thing appear is *straightforward*, it requires no apparatus of founding or founded acts ... the act of perception is always a homogeneous unity, which gives the object presence in a simple, immediate way. (LU VI §47, p. 788f)

Perception is therefore contrasted with e.g. the experience of a reconciliation, of an insult, or of a refutation, where an apparatus of founding and founded acts is needed. Perception is an experience that grasps the object itself, in which the object directly confronts us (LU VI §49, p. 797).⁴²

One reason – apart from the attractions of Cartesianism – why Husserl did not go further than this

and consider the possibility that there may be a necessity, built into the structures of perceptual and other acts, that some acts may be such that they are dependent upon their objects, was that he wanted his account of intentionality to encompass both acts directed to spatio-temporal objects and acts directed towards mathematical entities and ideal entities of other sorts. For as already noted, the latter do not admit of a treatment in terms of the theory of dependence relations which Husserl put forward. Objects which exist contingently cannot be dependent upon objects whose existence is a matter of necessity.⁴³ Hence there can be no intrinsic unity of the type required by the relational theory between that sort of concrete spatio-temporal event which is an act of thinking about an abstract object and this abstract object itself.⁴⁴

The Husserl of the *Logical Investigations* admits, in our terms, that mental acts are real events, real changes in the relevant subject, but he rules out (albeit implicitly) the possibility of going further and admitting that they may also be real relations. That all veridical acts can be described by relational sentences is however recognised by Husserl. It follows that he would accept also that all such acts are at least Cambridge relational in the sense of our discussion in Section 2.4. above. Indeed we may say that intentionality, for Husserl, is itself a Cambridge relation. But now the flaw in Husserl’s treatment is also clear: he acknowledges no difference between, on the one hand, acts of merely descriptive thinking about the tallest spy, where it seems appropriate to admit a mere Cambridge relationality, and, on the other hand, acts of perception, where it seems more reasonable to acknowledge relations of a full-blooded sort. His position might therefore be characterised as follows: whilst all veridical acts are real *events*, their *relationality* is either a mere linguistic trick, a spurious reflection of the logical form of certain categorical sentences (Hans sees *x*, Hans thinks about *y*, Hans recognises *z*, etc.) or it is a merely external relationality (like the relation between Hans and Erna which consists in his being seated next to her).

In regard to many veridical acts a view of this sort is fully acceptable. When I think about the tallest spy, then my thinking is a real event, but it bears at best a merely formal relation of co-existence to its object. In the case of perceptual acts, however, the view seems less acceptable. For each perceptual act involves, as a

matter of necessity, a causal component. This links the act to an object in the environment of the subject via (relational) events and processes e.g. of a physiological kind, and this in turn implies that the relational element in perception cannot be confined to mere co-existence. We can put this point in another way as follows: with the acceptance of the idea that a mental act is a real event, there must come also the recognition that it is sensitive, in its internal structure, to the structure of those objects which are causally effective in bringing it about. And now, in the case of a perceptual act, the objects thereby involved *include – inter alia* – the object given in the act. The structures of perceptual acts are thereby functionally dependent on the structures of their objects. But as we have seen, a sensitivity or co-variance of this kind is excluded for Cambridge relations, which are insulated from the detailed material make-up of their putative relata. The internal complexity of Cambridge entities can be read off directly and completely from the structures of corresponding terms. It seems, therefore, that the conception of perceptual acts as real events brings with it also the view that they are real relations.

4.3. *The inadequacy of Husserlian phenomenology*

What gets lost when the dimension of foundation relations between acts and objects is ignored can be illustrated by means of the following simple example. Hans is an ornithologist listening, night after night, for the calls of a particularly rare species of bird. He finally hears a chirping, which he recognises, correctly, as a call of the appropriate sort. He then, on a subsequent night, hears what sounds like exactly the same chirping noise. The later act is, we are supposing, in itself phenomenologically indistinguishable from the earlier, but lacks an object. Hans supposes himself to have heard a certain chirping, but this incorrect supposition or hearing-*Ersatz* is in reality the product of something like a mental projection on his part. Husserl himself wants to claim that “The distinction between normal and abnormal, correct and delusive perceptions does not affect the inner, purely descriptive or phenomenological character of perception” (LU V §2). We, however, wish to contend that no description of the structures of acts can be adequate which does not recognise and take seriously a distinction of this sort.⁴⁵

Husserl seeks to simulate the distinction in his theory of verification in the 6th Investigation. The earlier act, he would point out, has the potential to serve as the beginning of a chain of successively richer intuitive fulfilments (verifyingings), which may proceed in principle without limit. The later act, on the other hand, if it is allowed to serve as the basis of a chain of verifyingings, is liable to lead to frustration. This is, however, to supply an account of an actual or real distinction in terms of courses of events which are merely ‘in principle possible’ and which need never in fact be realised (may not even be physically realisable). More bluntly: Husserl gives an account of differences which *exist*, by appealing to what – at least in the majority of cases – does not exist, namely possible processes of verification or falsification.⁴⁶ And as we have seen, even when he emphasises, correctly, that in an actual verification of the first act Hans is in contact with the chirping of the bird *itself*, Husserl never considers or concedes any stronger relation between the act and the chirping than co-existence or compatibility. It is one thing to say that when a perception of a chirping occurs then two events actually occur – and it is a great step forward to say it – but it is another to say that the two events do not merely co-exist.

For all their structural differences, however, Hans’s relational act and his *Ersatz* act are phenomenologically indistinguishable. There is no foolproof recipe which a subject can use to decide from the inside just which of his presentations are relational: criteria such as vividness or coherence are well known to fail. It is therefore one implication of our relational view that we must abandon the idea that phenomenologically indistinguishable acts are thereby objectively or really homogeneous. Since a subject’s description of his experiences cannot in general reveal the difference between relational and non-relational acts, we conclude that this dimension in the structure of acts falls outside the purview of phenomenology in the strict sense of, for example, Husserl’s *Ideas I*. Paradoxically, it is this very irrelevance of relationality to phenomenological description which is the theoretical basis of the method of *epoché* or bracketing, a method which, as Husserl conceives matters, opens up a whole new realm of apodictic investigation (*Ideen I*, §18). Husserl’s theory can exploit the mental sphere in this way, it would seem, *only* by trading in the possibility of being adequate to mental acts as they are, reticulated with other objects, in the world.

What, then, can be said positively about non-veridical acts such as Hans's *Ersatz* hearing of the (putative) chirping? The difference between Hans's two acts may perhaps be compared to the difference between a genuine signature and a perfect forgery. In either case, the fact that no difference is detectable from a certain angle of access does not change the fact that we are dealing with entities of two quite different sorts – and the difference in both cases is a matter of the dependence relations in which the respective acts or (perceived, understood) ink-marks stand, or do not stand, to other objects.

Modified or defective acts of the given sort are referred to in the Brentanian tradition as 'objectless presentations'. As Husserl put it in a manuscript of 1894 (and the second of his two examples has an independent historical interest):

It is evident that an object does not correspond to the presentation 'a round square' and we are also certain of this in the case of presentations such as 'present Emperor of France' (1979, p. 303).⁴⁷

Thus Husserl, at this stage at least, insisted quite commonsensically that to say that, for example, the god Jupiter is an intentional object of my act, is not to say that there is something, namely Jupiter, which lacks existence but is thought about by me. It is rather simply to say that my act is structured in a certain way, describable as a presentation-of-the-god-Jupiter. The apparent reference to an object in this description is a misleading by-product of the way we give an account of the structure of the act.

To take this apparent reference so seriously as to want to erect upon it a theory of non-existent objects is to fall victim once more to the assumption that all acts are homogeneous, that they must all be accommodated within a single structural frame. And then the struggle to construct a frame loose enough to admit objectless presentations and other problematic cases diverts the attention away from the character of those most simple and unproblematic cases in which our cognitive relation to the world is originally secured.

Notes

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¹ Brentano (1924/25), II, p. 134, Eng. p. 271.

² Smith and Mulligan (1982, 1984); Smith (1981); Simons (1982). The Husserlian ontology was developed above all by his pupil Ingarden, esp. in his (1964/65).

³ This is to rule out the possibility that there are mental substances, an assumption which will however play no role in the deliberations which follow.

⁴ See Ingarden (1964/65), Vol. I.

⁵ On the relativity of the concept of 'substance' see Husserl (1948), §§28ff.

⁶ Category (i) is the subject-matter of Mulligan (1985) and of Smith (1985). Category (iii) is discussed in Smith, ed. (forthcoming), categories (iv), (v) and (vi) in Simons (MS), which contains a detailed exposition of the intuitive reasons for supporting a division of realia of the sort defended in this paper.

⁷ Nothing will turn, either, on the differences between acts which are [\pm propositional articulated] and relatives of Wittgenstein's *seeing as* (or of what Linke (1929) called 'assimilative acts'). Note however that cases of propositionally articulated acts and cases of seeing as are usually, if not always, bound up with what might be called simple acts (for example acts of seeing a man or a smile). When I judge that the man I see before me is bald, or when I see the man before me *as a dog*, then in each case my act is bound up with a simple seeing of the man, and in the latter case also – as Linke saw – with a simple imagining.

⁸ On the relations between mental acts, processes and states cf. Reinach (1911), Smith (1985) and Mulligan (1986). On 'horizons' see ch. 5 of Woodruff Smith and McIntyre.

⁹ This idea has something in common with recent work on the opposition between *de re* and *de dicto* mental acts and states by analytic philosophers. See e.g. the papers collected in Woodfield (ed.).

¹⁰ In this sense every object is, trivially, an essential (though improper) part of itself. The doctrine of mereological essentialism holds that every ('proper') object is such that *all* its parts are essential to it in the sense of the definition D2: cf. Chisholm (1976), Appendix B.

¹¹ Farias (1968) presents a strong case for the thesis that Brentano defended a literal version of the immanence theory.

¹² Cf. Fine (MS), on the relations between Husserl's theory and algebraic topology.

¹³ It would be redundant to distinguish two distinct notions of independence, by analogy with the distinction between dependence and essential parthood. This is because the trivial case in which an object would be independent of itself cannot arise, and also because, if a whole *a* is such that it can exist even though its part *b* does not exist, then *a* is also such that it can exist even though *b* is not a part of *a*.

¹⁴ We can similarly define the relations of mutual and one-sided *independence* (with obvious generalisations for relations of mutual and one-sided dependence and independence having more than two terms).

¹⁵ D8. and D9. may need to be adjusted to take account of the fact that objects may stand in two (or in principle more than two) distinct

systems of dependence relations, only one of which is, intuitively, a system of immediate dependence. The objects would then not be immediately dependent according to the terms of the definition.

¹⁶ On the logic of *de re* necessity here at work – and the problems associated with the adequate formalisation of modal dependence theory in general – cf. Simons (1982) and (MS). On the importance of the distinction between propositional and nominal possibility operators see Hacking (1978).

¹⁷ These are defined by means of variables *A*, *B*, etc., ranging over *kinds* or *species* of realia. On the possibility of regarding species talk as a mere *façon de parler* see Simons (1983a).

¹⁸ A definition of the concept of absolute dependence is suggested in Smith (1984).

¹⁹ The theory of comparatives sketched in the text is worked out most fully by Meinong (1896); cf. also Tegtmeier (1981).

²⁰ Of course, it will not do simply to conjure up moments precisely suited to serve as appropriate relata of comparison relations. ‘Hans is sleepier than Erna’ is made true not simply by some formal relation of inequality between simple sleepiness-moments, but by a complex of formal relations obtaining between a range of corresponding states, processes and events (yawnings, noddings off, slowings down in rates of metabolising, and so on) currently inhering in Hans and Erna respectively.

²¹ They have no ‘divisible bulk’: Stroll (1979), p. 278; cf. Ingarden (1964/65) – especially the discussions in Vol. I of the mode of existence of objects in the present.

²² In talking of ‘Cambridge’ changes, Geach presumably has in mind passages such as the following:

Change is the difference, in respect of truth and falsehood, between a proposition concerning an entity and a time *T* and a proposition concerning the same entity and another time *T'*, provided that the two propositions differ only by the fact that *T* occurs in the one where *T'* occurs in the other. (Russell 1903, p. 469)

²³ We leave open the question whether there are also Cambridge continuants, though we recognise that fictional objects and certain kinds of social objects (the British Constitution?) might be put forward as candidates.

²⁴ The theory of Cambridge entities therefore has much in common with the theory of irrealia as objects existing in time but in such a way as to be causally insulated from realia, put forward by Brentano’s student Anton Marty. See Smith (1986) for a summary of Marty’s views in this regard.

²⁵ On the link between making true and nominalisation see Mulligan *et al.* (1984), §3.

²⁶ In fact both Husserl and Wittgenstein shared the view that formal relations are in some sense reflections of syntax: cf. Smith (1981).

²⁷ The general theory of relational acts allows a certain amount of free play also in regard to the status of the objects of such acts. Thus while it has been assumed here that relational acts are directed (for example) towards material things (persons, bananas), one could, in principle, develop the theory according to which it were rather structures of sense data or Gestalt qualities or microphysical events which served as right hand relata.

²⁸ What must be added is, roughly, the condition that *b* is *r*’s object

(and not merely something, for example a previous act, upon which *r* happens to depend).

²⁹ Cf. the treatment of self-directed intentionality in Chisholm (1981).

³⁰ A realist philosopher would however hold that misclassifications tend to diminish through time, with the development of science. See the valuable exposition in Devitt (1984).

³¹ See Mulligan and Smith (MS), for further treatment of these matters. This paper includes also some indications as to the connections between the ideas presented in this section and causal or historical theories of mind, as put forward, e.g. in Evans (1982).

³² Recent American ‘cognitive science’ seems to have committed the error of attending exclusively to this and related ‘internal’ aspects of cognition at the expense of the aspect of dependence. Thus consider, for example, the doctrine of methodological solipsism put forward by Fodor (1981). This consists in the thesis that the methodological assumption of the self-containedness of consciousness can alone make possible a nomological science of psychology. For, it is argued, if mental acts were to be conceived as intrinsically relational in structure, as somehow *in contact* with their transcendent or external objects, then the investigation of these acts would have in some measure to involve the investigation also of these objects themselves, and this would rule out the possibility of a *science* of psychology. This is because the latter, before it could formulate laws of its own, would need to presuppose a theory of the objects of thought, and this, as Fodor puts it, “is the theory of *everything*; it is all of science”. (See Dreyfus, ed., 298–301.) This claim, if it were correct, would pose a threat, of sorts, to our idea that cognitive experience is (frequently) relational in structure. To get off the ground at all, however, the argument of the methodological solipsist must presuppose the absence, at every non-ultimate stage in the development of science, of any secured relation between scientists’ acts and their objects of investigation. It must maintain that the relation between science and world is at best a matter of the ‘fitting’ of concepts or ‘vocabulary’ to objects in such a way that every shift in concepts would bring about a break in the continuity of reference. We, however, can accept – what seems in any case to be obvious – that scientists are already, in a significant proportion of their acts, in direct or indirect cognitive contact with objects in the world. We can accept further that such secured reference can survive – and has survived – even supposedly revolutionary changes in the content and methodology of a science. (See, now, Devitt (1984) for a definitive statement of this realist position.)

³³ Similar remarks can be made also in connection with the notions of verification and falsification, i.e. (from our present point of view) with the ways in which the presence or absence of relational contact is *established* (cf. §4.3. below). We should argue quite generally that neither verification nor evidence can throw direct light on the nature of our relational contact with the world, since both the cases where verification occurs and the cases where evidence exists would seem to be departures from what is normal in our mental lives.

³⁴ See LU VI §§16–29 for some idea of the uses to which this idea of degrees of mediacy can be put.

³⁵ Note however that it is an individual love or pain event which is then the object of her perception: not the universal *love* or *pain*.

³⁶ See, now, the volume of papers on Reinach’s philosophy edited by Mulligan and also ch. 10 (‘Tendencies’) of Johansson (MS).

³⁷ Cf. Woodruff Smith and McIntyre, e.g. p. 248, for a useful discussion of Husserl's account of this notion. See also Pfänder (1911). On Brentano's theory of motivation see Rogge, ch. IV.

³⁸ In his later philosophy Husserl does not merely neglect the dimension of foundation relations between acts and objects – he systematically denies or even inverts it (by making objects depend upon acts). In addition he introduces a concern for the relations between acts and the 'pure' or 'transcendental' subject.

³⁹ Cf. LU VI §30–35, IV §14. Of course, even mere co-existence is too strong a relation when we deal with acts directed towards objects existing in the past.

⁴⁰ The early Brentano understood the relation of mental activities to be peculiar intentional entities, which he called 'objects of thought'. The later Brentano reduced even these to the status of mere fictions. Thus he retreated to a position where mental acts are only 'relation-like' (*etwas 'Relativliches'*) (1924/25, II, p. 134, Eng. p. 272).

⁴¹ This qualitative difference is illustrated in the classical detective story, whose dénouement would make no sense if the distinction did not exist, a point which seems to have been ignored in the treatment of knowledge and belief *de re* put forward by Chisholm in his (1981), ch. 9.

⁴² Perceptual acts would then be examples of ultimate initial acts in the sense of Section 3.3. above. That we are directly aware of physical objects does not of course imply that we are thereby aware of all their parts and properties. The object in perception "is not given wholly and entirely as that which it itself is" (LU VI §14b, p. 712). Further arguments in support of our interpretation of Husserl here are provided by Stephens (1978). Compare also the discussion of Brentano's concept of noticing in Mulligan and Smith (1985).

⁴³ To say that a dependence relation exists between *a* and *b* is to say, in effect, that *a* is such that it cannot exist unless *b* exists. The existence of *a* is somehow tied to that of *b*. Clearly if either *a* or *b* exist necessarily, then such a relation cannot obtain.

⁴⁴ As Husserl himself insisted: "*Alles wahrhaft Einigende ... sind die Verhältnisse der Fundierung*" (LU III §22).

⁴⁵ Thus our view is that it is not possible cleanly to separate phenomenological and ontological description – as some latter-day followers of Husserl have wanted to claim.

⁴⁶ The same charge can of course be made against all attempts to understand the structures of acts in terms of 'possible worlds', and the like. On the other hand one may well defend Husserl's account of verification as a contribution not to ontology but to *epistemology* – as an attempt not to locate existence within evidence, but to say what the evidence for existence claims would involve.

⁴⁷ Cf. also LU V §12b. There are places in LU where Husserl seems to hold that every act has an object, though "The object named need not be taken to exist at all" (LU I §16, p. 297). At LU II §8, p. 352, however, Husserl reassures us that his references to non-existent objects are – as they are in the present paper – mere figures of speech. The 1894 paper is however much more forthright in condemning talk of non-existent intentional objects as based on a failure to appreciate the difference between veridical categorical reports of acts and true hypothetical sentences about acts.

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