Acting against one's best judgement
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CHAPTER IX

GRADUALISED DISPOSITIONS AND DEGREES OF STRENGTH

0. Introduction

In this final chapter I explain how the gradualisations of Hempel and Reichenbach lead into a cul-de-sac. For they either presuppose a non-gradualistic approach or sabotage the very idea of a reduction sentence (Section 1 and Section 2). We need an alternate gradualisation, and in Section 3 of this chapter I describe two of them. The first, laid down in 3.2, turns out not to be satisfactory. The second, in 3.3, will appear to be in better shape. Like Hempel and Reichenbach, I shall render the reduction sentences open to degrees, but for the rest my gradualisation differs from theirs in two respects. First, while Hempel and Reichenbach gradualise the meaning of a disposition, I will gradualise the disposition itself. Second, whereas their gradualisations are dominated by the concept of probability, mine is governed by the notion of intensity. By deviating from Hempel and Reichenbach in the above-mentioned way, I obtain a more realistic description of akratic actions, which gives us a better understanding of what akratic actions really are. Moreover, I can capture some intuitions about akrasia expressed by philosophers whom I have already discussed: Socrates, Plato, Aristotle, the Stoics, Davidson and Pollock. The affinity of my approach to theirs is the theme of Section 4.

1. An example: agoraphobia

Imagine someone who suffers from a morbid dread of open spaces such as squares, meadows and lawns. This person has a disposition, agoraphobia (AP), which can be described in a bilateral reduction sentence:

\[(IX.1)\]: \((x)\ \{\text{OP}(x) \rightarrow (\text{AP}(x) \leftrightarrow \text{SF}(x))\}\),

where ‘\text{OP}(x)’ means ‘\(x\) is brought into an open place’ and ‘\text{SF}(x)’ means ‘\(x\) shows signs of dreadful fear’. We have repeatedly seen that (IX.1) is
equivalent to the conjunction of (IX.2) and (IX.3):

\[(IX.2): (x) \{AP(x) \rightarrow (OP(x) \rightarrow SF(x))\}\]
\[(IX.3): (x) \{OP(x) \rightarrow (SF(x) \rightarrow AP(x))\}\]

both of which are symptom sentences expressing a necessary and a sufficient condition respectively. As described in (IX.1), \(AP\) is a simple disposition, but it is easy to picture it as a broad or multiple one. In that case the definition of \(AP\) would be given by a set, \(U\), of \(m\) different bilateral reduction sentences, \((u-1) \ldots (u-m)\) (cf. Chapter III, Section 3.3, and Chapter VII, Section 2.2). Each single bilateral reduction sentence \((u-i)\) \((1 \leq i \leq m)\) would be equivalent to the conjunction of \((u_i)\) and \((u'_i)\):

\[(u_i): (x) \{AP(x) \rightarrow (OP_i(x) \rightarrow SF_i(x))\}\]
\[(u'_i): (x) \{OP_i(x) \rightarrow (SF_i(x) \rightarrow AP(x))\}\]

where \((u_i)\) expresses a necessary condition, \(C_i\), and \((u'_i)\) expresses a sufficient condition, \(C'_i\), for application of \(AP\), \(C_i\) being described by means of the ordered pair \(<OP_i(x), SF_i(x)>\) and \(C'_i\) by means of \(<OP'_i(x), SF'_i(x)>\). \(C_i\) and \(C'_i\) could for instance be interpreted as: \(<x\ is\ brought\ to\ the\ Grote\ Markt\ in\ Groningen,\ x\ breaks\ out\ in\ cold\ sweat>, \(<x\ is\ told\ that\ he\ has\ to\ cross\ the\ English\ Channel,\ x\ starts\ trembling>, \(<x\ watches\ Plato\ walking\ in\ the\ Athenian\ agora,\ x\ pales\ and\ faints>\), et cetera. As is typical for broad dispositions, \(C_i\) and \(C'_i\) need not coincide.

With respect to the point I am trying to make, it is entirely irrelevant whether \(AP\) is a simple or a broad disposition. Since my remarks will pertain to each pair of reduction sentences expressing a necessary and a sufficient condition for application of \(AP\), \(AP\) might be defined by one pair or by a whole series of them. Until further notice I shall, therefore, restrict myself to the simple variant of \(AP\). In the meanwhile I point out that I shall alter my strategy in 3.3.3; there I will cancel the present restriction and consider agoraphobia as a broad disposition. The reasons for this shift will be given in the section concerned.

If \(AP\) is a simple disposition, then its definition is given by the conjunction of (IX.2) and (IX.3). In the preceding chapters we have seen that Hempel and Reichenbach deem (IX.2) and (IX.3) to be rather unrealistic as descriptions of \(AP\): it seldom occurs that an agoraphobic person who is taken to an open place always shows signs of morbid fear, and it rarely
An example: agoraphobia

happens that a person who enters an open place and does not feel very well always suffers from agoraphobia. Thus both (IX.2) and (IX.3) are inappropriate as descriptions of AP; they are formulated too strictly and should be wearing looser and less formal clothes. Hempel and Reichenbach, we have seen, present (IX.2) and (IX.3) in probabilistic garments. Attired thus, (IX.2) and (IX.3) appear as (IX.4) and (IX.5):

\[
\text{(IX.4): } p(SF(x) | OP(x) \land AP(x)) = s \\
\text{(IX.5): } p(AP(x) | OP(x) \land SF(x)) = r,
\]

where \(s, r\) are numbers expressing probability values. Preferably, \(s\) and \(r\) are neither 1 nor 0. For if they were, (IX.4) and (IX.5) would be reduced to (IX.2) and (IX.3) or to the negations of the latter, and in either case (IX.4) and (IX.5) would have been stripped of their probabilistic raiment.

The difference between (IX.2) and (IX.3) on the one hand and (IX.4) and (IX.5) on the other reflects the difference between the non-concretum AP as an abstractum or as an illatum (again in the linguistic rather than in the ontological sense of the words). For as we have seen, the linguistic fingerprint of an illatum is its description in probabilistic terms, whereas it is the description of AP in the non-probabilistic sentences (IX.2) and (IX.3) that turns AP into an abstractum.

If AP is an abstractum, then it is totally ineffectual for our purposes: instead of avoiding the akrasia problem, it leads straight to it. This at least has been the message of Chapter III. There we saw that non-probabilistic reduction sentences like (IX.2) and (IX.3) render akatic actions puzzling. Worse still, that chapter revealed that the couching of beliefs and desires in ordinary, non-probabilistic reduction sentences blatantly contradicts the existence of irrational actions, pace Hempel’s claim to the contrary. However, the important point is that the difficulty is by no manner of means removed if AP is an illatum: even if we describe the relevant beliefs and desires by means of probabilistic reduction sentences like (IX.4) and (IX.5) we are still saddled with the problem of akrasia. This will be explained in Section 2.
2. AP as an illatum

The probability values \( s \) and \( r \) in (IX.4) and (IX.5) are numerical values between or identical to 1 and 0. I have already given the reason why the latter option runs up against difficulties. If \( s \) and \( r \) were identical to 1 or 0 in a particular case, then (IX.4) and (IX.5) would effectively be reduced to ordinary, non-probabilistic reduction sentences. AP would then become an abstractum, with all the consequent disadvantages that I have explained in Chapter III. But as I will argue below, the first option is problematic too. For \( s \) and \( r \) can only take the values of numbers between 1 and 0, if we know under which circumstances they are 1 or 0. This means that the disposition AP can only be a (linguistic) illatum if we know under which conditions it is a (linguistic) abstractum. In still other words, the probabilistic reduction sentences (IX.4) and (IX.5) solely make sense if we can in principle determine when the non-probabilistic reduction sentences (IX.2) and (IX.3) are true.

In 2.1 and 2.2 I argue that (IX.5) must presuppose a statement of the form (IX.3), on pain of making the very translation of theoretical terms into observational ones a trifling enterprise. In 2.3 it is shown that mutatis mutandis the same goes for (IX.4): either (IX.4) presupposes a statement of the form (IX.2), or it renders the entire project of contriving reduction sentences for defining dispositions nugatory. If my argument is correct, then it constitutes of course a serious threat for Hempel’s probabilistic reduction sentences as well as for Reichenbach’s idea of probability meaning. Both Hempel and Reichenbach have presented (IX.4) and (IX.5) as substitutes for (IX.2) and (IX.3): in their approaches, (IX.2) and (IX.3) are shown to be defective, and consequently they are replaced by their probabilistic counterparts (IX.4) and (IX.5). But of course, if it turns out that (IX.4) and (IX.5) actually presuppose the truth of (IX.2) and (IX.3), or other statements of the same form, then such a replacement does not make sense.\(^7\)

\(^7\) My criticism as laid down in Sections 2.1 - 2.3 is inspired by Arthur Pap’s berating of reduction sentences, brought to my notice by Alfons Keupink (Pap 1958a; Pap 1958b; Pap 1963). Pap has developed an alternative approach, which I discuss and subsequently reject in 3.2. My own approach is explained in 3.3.
Suppose that Kenneth exhibits signs of anxiety (SF) when confronted with wide spaces (OP). In the approaches by Hempel and Reichenbach, this means that with a certain probability, \( q \), Kenneth suffers from agoraphobia. This is expressed in a simple instantiation of (IX.5):

\[
(IX.6): \ p(AP(k) \mid OP(k) \land SF(k)) = q,
\]

where ‘\( k \)’ is an individual constant denoting the poor patient. We have seen that \( q \), rather than being 1 or 0 itself, must be a number smaller than 1 and greater than 0: \( 0 < q < 1 \). In order to determine the precise value of \( q \), we have to know the meanings of the terms that occur in (IX.6): we must know what it means that Ken shows signs of fear (SF), that he is in an open place (OP), and that he suffers from agoraphobia (AP). For only if we know what it means for Ken to have agoraphobia, \( AP(k) \), can we say how probable \( AP(k) \) is, given \( OP(k) \) and \( SF(k) \). More generally, only if we know what it means for a property or an event \( e \) to occur, can we say how probable \( e \)'s occurrence in fact is.

When do we know what it means for \( e \) to occur? The answer is of course: when we are able in principle to identify or to recognise \( e \). That is, we must be capable of knowing the circumstances under which we would assert or deny that \( e \) is present. When \( e \) is an observable concrete event, \( e^c \), this will not pose any problem. In this case the identification or recognition consists in a simple act of observation: the only thing we have to do is to look whether or not \( e^c \) is the case. This being-able-in-principle-to-observe \( e^c \) is essential for the meaning of the probability value that we have ascribed to it, for assigning a probability value to \( e^c \) without being able (in principle) to check it by observation, makes the entire assignment nonsensical. This is of course just another way of saying that calling \( e^c \) probable only makes sense if we know what it means for \( e^c \) to occur.

When \( e \) is a non-concretum, \( e^{nc} \), the situation is more complex. The recognition of \( e^{nc} \) clearly goes beyond mere observation, since the existence of \( e^{nc} \) must be inferred from observable events. As in the case of dispositions, there are two possibilities. Either \( e^{nc} \) is an abstractum or it is an illatum. If it is an abstractum, then \( e^{nc} \) coincides with a set of observables, and the term which denotes \( e^{nc} \) is merely a short-hand term for the entire set.
In this case it is relatively easy to infer $e^{nc}$ from the observables; the only thing we have to do is to observe whether or not the set in question is present. But although the recognisability of $e^{nc}$ is no problem in this case, there still remains the problem that I mentioned above. When the abstractum $e^{nc}$ is a reason, i.e. a belief and a desire, then it is of no help in our attempts to solve the akrasia problem. Worse still, in this case it leads directly to that very difficulty, as I have shown in Chapter III.

On the other hand, if $e^{nc}$ is not an abstractum but an illatum, how should we identify or recognise it? How can we know the circumstances under which we would assert or deny that the illatum $e^{nc}$ is present? We have seen what Reichenbach’s answer to these questions is: we identify illata on the basis of probability inferences. By probabilistically inferring an illatum like $AP(k)$ in (IX.6) from observable events like $OP(k)$ and $SF(k)$, we show that the former has a certain plausibility given the latter. However, we have observed that attaching a conditional probability to $AP(k)$ on the basis of $OP(k)$ and $SF(k)$ presupposes that we know what $AP(k)$ means, in the sense that we could identify or recognise $AP(k)$, were it to occur. Thereby we are hurled back to the point where our problem originated, for the whole difficulty indeed was how to recognise or identify illata such as $AP(k)$.

We seem to have been driven to the following conclusion. Only if we know the conditions under which we may or may not ascribe agoraphobia to a person, do we know what suffering from agoraphobia means. Knowing those conditions, however, might seem to be the same as knowing in principle when the conditional probability of agoraphobia is 1 or when it is 0. From this it follows that the value $q$ in (IX.6) can only lie between 1 and 0 if we know under which circumstances $q=1$ or $q=0$: only if we know under which conditions Kenneth certainly would or would not suffer from agoraphobia, can we reasonably say something about the probability of his suffering from it. Put in general terms, the conclusion says that it is incomprehensible to call a non-concretum probable to such and such a degree if we do not know what would make its presence or its absence certain. This conclusion actually reflects one of the two ways in which we can meaningfully call a non-concretum probable. In Section 2.2 I describe the other way. I shall argue that neither way is accessible for Hempel and Reichenbach.
Section 2.1 indicated that there exist precisely two ways of overcoming the difficulty, that is, two ways in which the sentence (IX.5) can be meaningful. The first we have already discussed. According to this way, we must know what circumstances would cause \( r \) in (IX.5) to be equal to 1, and thus when

\[
(IX.7): p(AP(x) | OP(x) \land SF(x)) = 1.
\]

Of course, (IX.7) is equivalent to:

\[
(IX.3): (x) \{ OP(x) \rightarrow (SF(x) \rightarrow AP(x)) \},
\]

i.e. the reduction sentence expressing sufficient conditions for application of \( AP \). This means that any application of (IX.5) to a special case, such as that described in (IX.6), requires that we know when the probability value \( r \) in (IX.5) is 1, and hence when (IX.7) is true. That, however, is the same as knowing when (IX.3) is true. Ergo, (IX.5) is meaningful under the assumption that we can determine in principle (not necessarily in practice!) when (IX.3) is the case.

There is, however, a second way to confer meaning upon (IX.5). This way does not require that we know when (IX.7) or (IX.3) are true. Here it is argued that we might perfectly well determine the value of \( r \) in (IX.5) without in any sense knowing under which circumstances \( r = 1 \). The only thing we have to assume is that the presence or absence of \( AP \) can be detected independently from the pair \( <OP(x), SF(x)> \). Thus the second route forces us to suppose that the meaning of ‘\( AP(x) \)’ is totally detached from \( <OP(x), SF(x)> \). For only then does it make sense to speak about the probability of \( AP(x) \), given \( OP(x) \) and \( SF(x) \), without knowing when that probability equals 1.

Neither way is accessible for Hempel or Reichenbach. In Hempel’s approach (IX.5) is to replace (IX.3), and thus can never presuppose (IX.3). After all, Hempel’s probabilistic reduction sentences (IX.4) and (IX.5) are essentially substitutes for the non-probabilistic ones (IX.2) and (IX.3). They are developed for the purpose of avoiding the unwanted consequences of (IX.2) and (IX.3), and indeed of avoiding (IX.2) and (IX.3) themselves. Similarly, Reichenbach’s probability implications ‘\( \rightarrow \)’ and ‘\( \leftarrow \)’ are substitutes for the ordinary non-probabilistic implications ‘\( \rightarrow \)’ and ‘\( \leftarrow \)’, just as his
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probability connection (VIII.4) - see Chapter VIII, Section 1 - is a substitute for the early positivistic equivalence relation (VIII.1). Statements (VIII.5), (VIII.6) and (VIII.4) are replacements, meant as conclusive improvements on the sentences that they replace. It would be rather paradoxical if we were to assume that the improved sentences are presupposed by the improving ones, in the sense that the latter would be meaningless without the former. Yet taking the first way of escape would require precisely that we embrace this paradox.

One can without much effort see why the second way, too, must remain closed for both Hempel and Reichenbach. If the meaning of ‘\( AP(x) \)’ is totally detached from ‘\( OP(x) \)’ and ‘\( SF(x) \)’, then there must be other expressions that can serve as the definiens of ‘\( AP(x) \)’. Either those expressions are reduction sentences or they are not. If they are not, then the whole venture of conceiving reduction sentences for defining dispositions turns out to be void: it appears that we do not need reduction sentences, no matter whether they are probabilistic or non-probabilistic. Consequently, the entire enterprise of relating theoretical or indirect terms to observational or direct ones falters. But if, on the other hand, the shifted expressions are indeed reduction sentences, then the problem is merely postponed. For in that case the problem will attach itself to the newly introduced reduction sentences. To be sure, those sentences describe alternative operations to detect the presence of \( AP \). For example, we could rather wildly postulate that persons \((x)\) suffer from agoraphobia if they show signs of joy (\( SJ \)) when they stand in a fast moving elevator (\( FME \)):

\[
(IX.8): p(\text{AP}(x) \mid \text{FME}(x) \land \text{SJ}(x)) = 1.
\]

Under the assumption that (IX.8) is true, it becomes perfectly possible to discover the value of \( r \) in (IX.5) without in any sense assuming that we must know when \( r \) equals 1. For now (IX.5) is a purely factual sentence, which merely expresses a correlation between \( OP(x) \) and \( SF(x) \) on the one hand and \( AP(x) \) on the other. In no sense, not even partly, does (IX.5) define agoraphobia. However, (IX.8) obviously fails to rescue the Hempel-Reichenbach approach, for it has the same form as (IX.3), and is thus equivalent to a clean non-probabilistic reduction sentence that expresses a sufficient condition for the application of \( AP \). This means that we are back to the first way, where the probabilistic sentence (IX.5) is only meaningful
if we can determine when the non-probabilistic sentence (IX.3) is true. 88

2.3 On the reduction sentence (IX.4)

In 2.1 and 2.2 I have argued that (IX.3) is equivalent to (IX.7), and that (IX.7) is presupposed by

(IX.5): \( p(AP(x) \mid OP(x) \land SF(x)) = r \),

where 0 < r < 1. Hence (IX.5) presupposes (IX.3), i.e. the non-probabilistic reduction sentence expressing sufficient conditions. We have seen that the only way to avoid this result was to forsake the reduction sentences altogether, a price that is too dearly bought. I shall now show that an analogous story can be told about the probabilistic reduction sentence which expresses a necessary condition for application of \( AP \), viz. sentence (IX.4). That is, either (IX.4) presupposes the non-probabilistic (IX.2), or the very idea of a reduction sentence loses its point. Not surprisingly, my argumentation in the present section is analogous to that in 2.1 and 2.2.

Consider:

(IX.4): \( p(SF(x) \mid OP(x) \land AP(x)) = s \),

in words: a person, \( x \), who stays in an open place and suffers from agoraphobia will, with probability \( s \), show signs of fear. Ignoring the case \( s = 0 \), there are two possibilities: either \( 0 < s < 1 \) or \( s = 1 \). If \( 0 < s < 1 \), then by the train of thought that I developed above, there has to be another probabilistic reduction sentence for \( SF(x) \), such that the probability value in that other sentence does equal 1. But then we might as well assume that this other sentence is (IX.4). Thus \( s = 1 \):

(IX.9): \( p(SF(x) \mid OP(x) \land AP(x)) = 1 \),

88 For the record, I point out that my criticism of (IX.5), stated in 2.1 and 2.2, does not involve the familiar reproach that events can only be probable if other events are certain. In the case of which I am speaking the events are the same. This mutatis mutandis obtains for my criticism of the symptom sentence (IX.4), to be explained in Section 2.3.
which is equivalent to:

\[(IX.2): (x) \{AP(x) \rightarrow (OP(x) \rightarrow SF(x))\}.\]

Thus (IX.4) presupposes (IX.2).

2.4 A daring detour

My argument to the effect that (IX.5) presupposes (IX.3) and that (IX.4) presupposes (IX.2) indicates the existence of an intimate link between meaning and probability. Probability is dependent upon meaning; or, to use a term which is more en vogue, it is supervenient on meaning. In the present section I try to illustrate this supervenience on the basis of a realm where it does not hold, namely the labyrinthine domain of quantum mechanics. Our ordinary notion of probability is not well suited to this field, and I regard this obstacle as being reflected in the difficulty to understand quantum mechanical events. There is an ongoing debate about the question of how to interpret quantum mechanical phenomena, and I suggest that we see this debate as one side of a coin that has the discussion about probability as the other. The reader should bear in mind, however, that the present writer is a total layman in the field, who, for her information on the general outlines of quantum mechanics, must depend completely on the experts. Having said this, I think I have covered myself enough to make the following, admittedly daring, remarks.

The considerations about the supervenience of probability on meaning are based on the classical Kolmogorov concept of probability; it is the Kolmogorovian probability that is supervenient on meaning. In quantum mechanics, however, Kolmogorov’s probability theory cannot naïvely be applied. If one wants to apply Kolmogorov’s theory to quantum mechanics, then one has to pay a price; one must either abandon classical logic (in favour of some quantum logic), or make other modifications elsewhere in the system. However, many scholars are content to give up Kolmogorovian probability. They opt for another probability concept, defined by axioms that
differ somewhat from those of Kolmogorov. This alternative concept of probability it is not supervenient on meaning. In quantum mechanics one can perfectly well call a quantum event, \( e^{qm} \), probable to such and such a degree, without knowing the circumstances under which \( e^{qm} \) will certainly occur. It is even possible to ascribe probability value 1 or 0 to \( e^{qm} \) without being sure whether or not \( e^{qm} \) will or will not happen. Contrary to what is presupposed whenever we apply Kolmogorovian probability, in quantum mechanics we are ignorant in principle of the circumstances under which \( e^{qm} \) would certainly occur.

At first sight, one might admit that we do not know what it means for \( e^{qm} \) to happen. Indeed, one of the difficulties in the interpretation of quantum mechanics precisely is how to understand an individual quantum mechanical phenomenon like \( e^{qm} \). It is on the level of these single quantum mechanical events that the deterministic macroscopic world with which we are familiar collapses. For now we enter the alien universe of bizarre and indeterministic microscopic events. Such is the peculiarity of these events and their descriptions that not only are we blind to their meanings, but we do not even know whether we must stay sightless or may one day ‘see’.

3. Origin of the problem and solution

The problems brought about by probabilistic reduction sentences have, to retain Reichenbach’s terminology, a common cause. The culprit in question is called probability meaning. Together, (IX.4) and (IX.5) state what agoraphobia means, but they do it only probabilistically. What they jointly produce is a probabilistic definition (not to be confused with a partial definition or an operational definition, cf. Chapter III), that is, a specification of the probability meaning of agoraphobia. As such, (IX.4) and (IX.5) render the meaning of agoraphobia open to degrees or grades. However, the very notion of degree of meaning is, like its confederate probability meaning, a conceptual eyesore. Both concepts look obvious and plausible, yet they lead

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89 A notable exception is Bas van Fraassen who, with his so-called modal interpretation of quantum mechanics, not only saves classical logic but also Kolmogorovian probability (but the latter only for so-called surface phenomena) (Van Fraassen 1991, 134-135 and 112-115).
us to the vexing quandary that I described above: either they rely on a non-probabilistic or a non-gradual approach, or they frustrate the whole enterprise of transmuting theoretical terms into observational ones. In the first case the supposed illatum presupposes an abstractum; in the second case the entire idea of abstracta and illata as two sorts of non-concreta becomes inapt.

At the deepest level one might well surmise another source of our predicament. A reduction sentence, whether bilateral or unilateral, has a Janus face: it performs two different functions which are hard to reconcile. On the one hand it is a definition of a term such as ‘agoraphobia’; as we have seen, this definition is partial, operational, and either probabilistic or non-probabilistic. On the other hand, it is a factual statement, expressing a certain empirical content. The content in question is given by the appropriate stimuli and responses, which constitute the observables out of which the non-observables are constructed. This can also be expressed by saying that reduction sentences somehow are analytic and synthetic at the same time: they are definitions and testable lawlike statements, they stipulate meanings and they assert facts. Small wonder, then, that we find ourselves in a vicious plight. In Section 3.1 I go more deeply into this Jekyll-and-Hyde nature of reduction sentences. Sections 3.2 and 3.3 contain two different proposals for mending matters.

3.1 Analytic and synthetic

I am by no means the first to observe that reduction sentences have a two-faced nature. In one of Schilpp’s invaluable volumes, The Philosophy of Rudolf Carnap, several scholars commented on the phenomenon. For example, Hempel notes that Carnap’s theory of reduction "fuse[s] two functions of language which have often been considered totally distinct: the specification of meanings and the description of facts" (Hempel 1963, 691; cf. Hempel 1954). Also, Arthur Pap frequently mentioned the matter. When he comes to the point at issue, Pap’s tone is often critical, not to say castigatory. In Pap’s view, there are only two, mutually exclusive, possibilities: either one keeps the distinction between analytic and synthetic and casts aside the idea of a reduction sentence, or one continues to devise reduction sentences at the cost of the distinction between analytic and synthetic. According to Pap, the terms ‘analytic’ and ‘synthetic’ are simply
not applicable to reduction sentences. Reduction sentences cannot be analytic or synthetic because they stand in between the analytic and the synthetic; in that sense they evade the very distinction:

"... The axiom that to specify the meaning of a term \( T \) by verbal means is to state a number of strictly analytic implications about \( T \) cannot stand once we admit the method of reduction sentences as a proper method of specification. ... the concepts ‘having factual content’ and ‘being factually empty’ which logical positivists, including Carnap, have always intended as contradictories are not applicable in the original sense to sentences whose predicates are but partially (or ‘conditionally’) defined; and it is, in that case, misleading to apply the same concepts to such sentences." (Pap 1958a, 306-307).

After having observed that every reduction sentence simultaneously is a meaning rule and an empirically disconfirmable statement, Pap comments at another place:

"The just diagnosed dual nature of the sort of partial definitions ... cannot be reconciled with the tenet of logical empiricism that every non-contradictory sentence of an interpreted language is either analytic or factual but not both. ... the analytic-synthetic dichotomy is inapplicable to partially interpreted scientific theories ... " (Pap 1963, 572-577).

Thus Pap moves to "the breakdown" or "the collapse" of the analytic-synthetic distinction for reduction sentences (Pap 1959, 187; Pap 1963, 571). Indeed, Carnap himself was well aware of the fact that reduction sentences have a dual nature. In the same Schilpp volume on his work, Carnap replies to both Hempel and Pap:

"When I originally proposed so-called reduction sentences for the introduction of disposition terms [in Carnap 1936], I emphasized that these sentences generally combine two different functions. First, they give an interpretation for the
disposition terms introduced by them .... Secondly, they make in general a factual assertion." (Carnap 1963b, 947).

Given this dual nature, it is indeed difficult to apply the distinction analytic-synthetic to reduction sentences. Carnap later tried to make the distinction nonetheless applicable by reconstructing reduction sentences as meaning postulates (Carnap 1952a). Ingenious though the reconstruction may be, it has been criticised again by Pap (Pap 1958, 358). But more important than Pap’s disapproval, at least for us, is the fact that this reconstruction does not elucidate the akrasia problem. If we regard reduction sentences as meaning postulates, it is still puzzling how akratic actions can occur.

Pap took great pains to circumnavigate the shoals by trying to conceive a completely alternative approach. Rather than giving the reduction sentences a different reconstruction (as was Carnap’s strategy), Pap simply defenestrated them. Pap’s alternative, which hinges on the notion of ‘degree of entailment’, is surveyed in Section 3.2. After having explained why it is not entirely satisfactory, I shall develop an alternative approach in 3.3.

### 3.2 Pap’s degree of entailment

Pap’s alternative approach consists in a new form of meaning specification, based on the approaches by Reichenbach and C.I. Lewis, and having as key concept ‘degree of entailment’ (Pap 1963, footnote 15, 327). As Pap tells us, degree of entailment is a pragmatic and not a semantic concept. It is about the intensity of a person’s reluctance to accept a certain statement rather than about what the statement in fact implies. More precisely, degree of entailment is the degree of willingness of a person, $P$, to assert a statement, $h$, in the light of certain evidence, $e$ (Pap 1963, 359, cf. 326ff). For example, let $h$ be ‘This object is a chair’, and let ‘being a chair’ entail for $P$:

(a) having at least three legs  
(b) capable of seating just one person  
(c) having a back.

The idea is that the entailment admits degrees, in the sense that, for $P$, the expression ‘being a chair’ entails (a) to degree $deg_1$, (b) to degree $deg_2$, and (c) to $deg_3$. Suppose that:
where each \( \text{deg}_i \) could be a number between 1 and 0. If \( P \) notices that the object mentioned in \( h \) does not have a back, then \( P \)'s evidence \( e \) includes not-(c) for that object, and as a consequence \( P \) will feel a reluctance to accept \( h \). However, this reluctance is smaller than it would have been if \( P \)'s evidence were to include not-(b), and still smaller if \( e \) would have contained not-(a). This amounts to saying that, for \( P \), 'being a chair' means more (a) than (b) and more (b) that (c). In Pap’s words:

"If ‘\( S \)’ represents a declarative sentence and ‘\( p \)’ a state of affairs, then degree of meaning \( p \) is related to reluctance of withdrawing \( S \) after an assertion of \( S \) as follows: the greater the degree to which ‘\( S \)’ means \( p \), the smaller the reluctance with which ‘\( S \)’ will be withdrawn (or ‘not-\( S \)’ will be asserted) in case \( p \) is disbelieved as a result of subsequent observations." (Pap 1958a, 327).

Thus the meaning of an expression (such as a disposition term) is reduced to a disposition, namely the disposition of a person using the expression:

"... to ascribe a certain meaning to a descriptive term (and derivatively to a descriptive sentence) is to ascribe to the users of the term a certain \textit{disposition} with regard to its application. The above analysis in terms of a person’s reluctance to withdraw a claim when faced with apparently disconfirming evidence can easily be reformulated in terms of dispositions of people to apply a term to an object \( x \) if they believe \( x \) to have such and such properties." (Pap 1958a, 327-328; emphasis by Pap).

Clearly, this way of arguing does not bring us any further. For how do we measure someone’s degree of willingness if the latter is a disposition? The only way in which this seems possible is by making an appeal to reduction sentences; but Pap’s entire enterprise, I recall, was intended precisely to bypass such a move.

Let us sum up. Reduction sentences were meant to state the meanings of terms denoting dispositions. But instead of properly

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accomplishing their task, those sentences saddle us with a dilemma. In their non-probabilistic garments, when they describe abstracta, reduction sentences lead us to the \textit{akrasia} problem; yet in their probabilistic raiment, when they represent illata, they presuppose the existence of their non-probabilistic analogues. If we try to circumvent this kind of problem by appealing to ‘degree of entailment’, as Pap proposes that we should do, then we are doomed to circularity. For a degree of entailment is a degree of willingness, and a degree of willingness is a disposition. Hence we might well conclude that Pap’s approach is indeed circular. Rather than navigating between the Scylla and the Charybdis engendered by the reduction sentences, Pap drifts around them both in an everlasting maelstrom.

\textit{3.3 Gradualised dispositions}

The method of Pap fails because, among other things, it involves the notion of degree of meaning. The central notion in Pap’s approach, viz. ‘degree of entailment’, appears to be virtually equivalent to ‘degree of meaning’: if ‘being a chair’ \textit{entails} (with degree \textit{deg}) ‘having at least three legs’, then it \textit{means} (with degree \textit{deg}) ‘having at least three legs’. Both notions appear to be essential to a meaning specification in which meaning is rendered open to degrees. As far as its commitment to degree of meaning is concerned, Pap’s approach resembles that of Reichenbach. Notwithstanding the significant differences between Reichenbach’s probability meaning and Pap’s degree of entailment, both conceptions presuppose the idea that meaning admits degrees. But this idea, as we saw, is a conceptual monstrosity. At first sight it has an innocent mien, suggesting a tolerant character and an open, lenient approach to what meaning is. But in verity it takes us out of the frying pan into the fire, since in the end it frustrates the whole enterprise of converting theoretical terms into observational ones, as has been shown at the beginning of Section 3.

I cannot conceive any other solution to this problem than to give up the entire idea that meaning admits degrees. So that is what I will do. I will forsake \textit{meaning} gradualisation without, however, abandoning gradualisation \textit{per se}. This means that I shall gradualise the disposition itself, instead of its meaning. Rather than talking about "the degree of meaning of D" I shall refer to "the degree of \textit{D}", where ‘\textit{D}’ is a disposition, preferably a psychological disposition like a belief or a desire. This brings us to the first
difference between my approach and those of Hempel and Reichenbach. As we saw in Chapters VII and VIII, Hempel and Reichenbach gradualise merely the meaning of terms denoting beliefs and desires. In the present chapter I have explained the unwanted consequences of that approach, and in effect decided to gradualise the beliefs and desires themselves.

But there is still another difference between their gradualisations and mine. It has been clear all along that the gradualisations by Hempel and Reichenbach are dominated by the concept of probability. In contrast, when I speak about gradualising a disposition $D$, I refer to grades in the strength of $D$ rather than to the chance that $D$ will manifest itself. The way in which I gradualise the reduction sentences enables us to say that a person has $D$ partially rather than probably. The difference between having $D$ in part or having it with some probability is not that the former notion is qualitative whereas the latter is quantitative - both notions can be either quantitative or qualitative. The difference rather pertains to the meanings of both expressions. Having $D$ in part means that you possess pieces of $D$ for sure. Having $D$ in all probability means that you presumably possess the entire $D$, although it is perfectly possible that you do not have $D$ at all. The rest of the present Section 3.3 is devoted to an explanation of the second difference. I shall present my explanation in four steps. Step one is to develop the idea of a gradualised disposition on the basis of an intuition about degrees of strength (3.3.1). This intuition is made operational in the second step, where I show how we can operationalise the idea that broad dispositions come in degrees (3.3.2-3.3.3). In the third step I show how the operationalisation for broad dispositions differs from the approaches by Hempel and Reichenbach (3.3.4). Section 3.3.5 is an intermezzo, pertaining to the gradualisation of simple dispositions. My fourth and final step consists in demonstrating how the operationalisation for broad dispositions contributes to a better understanding of akratic actions (3.3.6).

3.3.1 An intuition: degree of intensity

How to shape the idea of a gradualised disposition? How to develop the thought that beliefs and desires come in parts or degrees? I think there is an evident way of doing that, namely by taking the intuition seriously that believing and desiring is usually believing and desiring to a certain extent.

The intuition that we believe $p$ or desire $q$ to some extent is quite
common. It is completely natural and part of everyday speech to say that a particular person is *a little bit* jealous, or *very* avaricious, or *slightly* suspicious, or *somewhat* gullible. When we compare people’s qualities with one another, we often talk in these terms of ‘more or less’. "Is Livia aggressive?" "Yes, somewhat. She is much more aggressive than Alexandra, but not nearly as aggressive as Ferdinand." "Do you believe that Livia is the murderer?" "Yes, I do. Alexandra is even more convinced of it than I am, but Ferdinand scarcely believes it." Everybody will admit that this mode of speaking is entirely normal. Moreover, everybody will recognise that it only makes sense if we assume that to believe and to desire are at least comparative concepts, and thus that beliefs and desires can have degrees of strength. The intuition that we believe and desire with grades of intensity will be my starting point in working out the idea of gradualised dispositions.

Once again I wish to point out that this starting point is pushed into the background by the approaches of Hempel and Reichenbach. Both approaches are, as we have seen, reconcilable with the standard Hempel-Oppenheim picture of a dispositional explanation, which has two modes: a probabilistic and a non-probabilistic one. As far as the non-probabilistic mode is concerned, the story can be put briefly. In the non-probabilistic version our intuition vanishes entirely. The dispositions mentioned in this version can be simple or broad, but for the rest they are always treated categorically or dichotomously: the agent either does or does not possess the dispositions in question. The idea that he might possess them *partially* or *to a certain extent* is clearly foreign to the ordinary, non-probabilistic dispositional explanation. However, for two reasons things are not much better in the probabilistic version. Firstly, since the Hempel-Oppenheim dispositional explanation perches on the edge of the analytic and the synthetic, the probabilistic mode makes sense only against the background of the non-probabilistic version. Such at least has been the upshot of the sections above, where I have been arguing that the probabilistic version would lead us to the non-probabilistic version after all, with all its consequent detriments. Secondly, having a disposition *in part* is by no means the same as having it *in all probability*; in particular, the latter does not automatically imply the former. As we shall see in the next sections, the difference stands out clearly when it comes to the gradualisation of reduction sentences: a gradualisation on the basis of having a disposition *partly* is quite different from a gradualisation based on having it *probably*.

So my first step is clear: in working out the idea of a gradualised
disposition I take as a starting point the intuition that our beliefs and desires have strengths or degrees of intensity. But two more questions are in need of an answer. How do we put this intuition into practice, i.e. how do we operationalise it; and after we have succeeded in making it work, how does it improve our understanding of akratic actions? The first question will be the subject of 3.3.2-3.3.5; the second question is dealt with in 3.3.6.

3.3.2 A distinction among events

The statement that beliefs and desires have grades of intensity may well sound natural, but as long as it remains unspecified it expresses nothing more than a vague idea. In the present section together with the subsequent one I specify this statement by making it operational. I wish to point out, however, that my method is not fully worked out and that all I do here is to give an initial impetus to its development. Furthermore, the method is solely applicable to broad dispositions.

I begin by introducing a distinction among events (or actions, for that matter). I distinguish between events that are of the same type and events that belong to different types. By the word ‘type’ I simply mean the contrast term of ‘token’, so that ‘I went skating yesterday’ and ‘I go skating today’ describe two different events of the same type (viz. the type consisting of my going skating), whereas ‘Juliet is invited for dinner’ and ‘Philip enters the grocery shop’ characterise two events of different types. Of course, the distinction in question is dependent upon the descriptions of the particular events involved, rather than on the events themselves.

My next move is to apply this distinction among events to the stimuli and the responses that are mentioned in the reduction sentences. Assume that there are \( n \) stimuli, \( S-1, ..., S-n \), with \( n \) corresponding responses, \( R-1, ..., R-n \). As before, each pair \( <S-i, R-i> \) consists of two other pairs, \( <S, R> \) and \( <S, R> \), the first describing necessary conditions, and the second describing sufficient conditions for application of the term in question. Application of my distinction to all the pairs \( <S-i, R-i> \) yields the following table, which represents four classes of reduction sentences, 1-4, describing four classes of dispositions:
"Treat a thousand dispositions in a thousand ways", Ovid recommended in his *Ars Amatoria* (*mille animos excipe mille modis*). A thousand ways is indeed numerous (although Mozart’s Don Giovanni capped it with 1003); but for my purposes *four* different ways of treating all the dispositions will suffice, namely the four classes of our table.

In the first class all the *S*-i’s are of the same type, and so are all the *R*-i’s. To this class belong the reduction sentences that define what we have called *simple* dispositions. An example is the bilateral reduction sentence, (F), that defines ‘fragile’ (FRAG) as:

\[
(F): (x) \{ \text{BLOW}(x) \rightarrow (\text{FRAG}(x) \leftrightarrow \text{BREAKS}(x)) \},
\]

in words: if *x* is under a relatively weak blow, then *x* is fragile if and only if *x* breaks. Under the assumption that (F) is the only bilateral reduction sentence for FRAG, fragility is a simple disposition. (F) implies that the stimuli in the definition of FRAG are always of the same type: they are all weak blows. Similarly, in (F) the responses are of the same type: they are always instances of breaking.

On the other hand, the reduction sentences which describe broad dispositions typically reside in class 4. Almost all the dispositions that I have mentioned so far, from being aggressive to suffering from agoraphobia, also reside in the fourth class. For each of these dispositions manifests itself in different ways under different circumstances.

The second and the third class also contain broad dispositions, although of a somewhat different nature. In the second class we find, among others, all the dispositions that are peculiar to addictive and compulsive behaviour. Smoking, drinking, and nail-biting may serve as examples of such dispositions. There are numerous different triggers, and hence numerous different stimuli that result in an alcoholic’s producing the same response: to start drinking. Perhaps it is justified to say that a disposition becomes

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<tr>
<td>1</td>
<td><em>S</em>-i’s are of same type</td>
<td><em>R</em>-i’s are of same type</td>
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<td>2</td>
<td><em>S</em>-i’s of different type</td>
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<td>3</td>
<td><em>S</em>-i’s of same type</td>
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<td><em>S</em>-i’s of different type</td>
<td><em>R</em>-i’s of different type</td>
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Origin of the problem and solution

more intense when multifarious stimuli engender responses of the same type. As for the third class, it is a bit difficult to find examples of dispositions that are described by reduction sentences that make up this class. The dispositions for erratic, eccentric or capricious behaviour would do, were it not that they only *echo* what they are supposed to *illustrate*: capricious behaviour is just another name for unpredictable behaviour, and unpredictable behaviour is another way of saying that stimuli of the same type prompt responses of different types.

On the basis of this classification, I shall in the next section suggest a gradualisation of the reduction sentences which differs from the gradualisations of Hempel or Reichenbach. For convenience’s sake I restrict my gradualisation to the fourth class, although it is applicable to the third and the second class as well (but not to the first). A gradualisation appropriate to the first class, in which simple dispositions are described, is developed in 3.3.5.

3.3.3 Agoraphobia again

Consider again the disposition agoraphobia. Like all dispositions, agoraphobia has an ontological and a linguistic aspect, but as to the former aspect, I can remain silent. I am not concerned with ontological affairs, and thus need not make any proclamation about the existence or non-existence of the trait at hand. I confine myself to remarks about the linguistic aspect alone, and no ontological implications should be inferred.

Earlier, in Section 1, I treated agoraphobia as a simple disposition; for relative to the point I was making then the question of whether it is broad or simple did not matter. With respect to the gradualisation that I have proposed above, however, the question is vital: in order to state that a person believes or desires something partly or to a certain extent, we have to assume that the belief or desire in question does allow a division into parts, and thus that it admits grades of strength. But of course, a disposition can only admit grades of strength in this sense if it is broad rather than simple (but see 3.3.5 for a gradualisation which is germane to simple dispositions). I therefore here reconstruct agoraphobia as a broad disposition. Moreover, I assume that agoraphobia is defined by reduction sentences of the fourth class rather than of the second or the third. This is a very plausible assumption indeed: most people will be inclined to suppose that agoraphobia
manifests itself in a variety of ways under a variety of circumstances.

Let the number of circumstances under which agoraphobia manifests itself be \( m \). Then the definition of agoraphobia, \((DA)\), consists of \( m \) pairs of stimuli and responses:

\[
(DA): \{<OP-1, SF-1>, <OP-2, SF-2>, \ldots, <OP-m, SF-m>\},
\]

where each \( OP-i \) \((0 \leq i \leq m)\) is a class of situations, to wit situations of being in an open place (the Grote Markt in Groningen, the agora in Athens, the prairies of the American midwest or the moors in Yorkshire), and where each \( SF-i \) is a class of signs expressing fear (serious trembling, paling, sweating, fainting). Every single pair \( <OP-i, SF-i> \) reflects a bilateral reduction sentence \((u-i)\), which, see Section 1, is equivalent to the conjunction of two unilateral reduction sentences \((u_i)\) and \((u')\). Thus \((DA)\), the set of \( m \) ordered pairs, corresponds to \( U \), the set of \( m \) bilateral reduction sentences mentioned in Section 1. How can we operationalise on the basis of \((DA)\) the intuition that usually one believes or desires something to a certain extent? How to insert the idea of partiality into the set of \( m \) bilateral reduction sentences represented by \( U \)? The method is simple. All we have to do is to divide \( U \) into \( n \) subsets, i.e. to divide \((DA)\) into \( n \) subsets:

\[
\mathcal{P}(DA): \{(DA^{w1}), (DA^{w2}), \ldots, (DA^{w(n-1)}), (DA^{wn})\},
\]

where \((DA^{wi})\) means \((\text{subset number } i \text{ of } (DA))\) \((1 \leq i \leq n)\). \( \mathcal{P}(DA) \) is the power set of \((DA)\). It contains all the subsets \((DA^{wi})\) of \((DA)\), including \((DA)\) itself as well as the empty set. Of course, the subsets may overlap: it might happen that a member of \((DA)\), for instance the pair \(<OP-5, SF-5>\), is a member of subset \((DA^{w5})\) and also of subset \((DA^{w6})\) \((i \neq j)\).

Some people suffer from agoraphobia in a very severe sense. They show all signs of heavy fear when confronted with all sorts of open or public places. Of those people we will say that they have agoraphobia in its highest degree, or that every single member of \((DA)\) is applicable to them. On the other hand, there also exist people who are not troubled by agoraphobia at all. No matter how open the place is where you situate them, no matter how packed the crowd in the midst of which they stand, they feel perfectly happy and are not bothered by any feeling of uneasiness. Of those people we will say that there is exactly one member of \( \mathcal{P}(DA) \) applicable to them, namely the empty set.
Most people, however, belong to neither of the above-mentioned groups. These people do not always feel comfortable in open or crowded places, but they are certainly not struck with terror or otherwise rooted to the ground with fear. Of these people we say that they suffer from agoraphobia slightly; their sufferings are sufferings to a certain extent, allowing a more or less. Translated in terms of \( P(\text{DA}) \), this means that some but not all members of \( P(\text{DA}) \) are applicable to them. For instance, suppose that \((\text{DA}^7)\) applies to Elizabeth, that \((\text{DA}^{n-13})\) pertains to Nicholas, and that \((\text{DA}^{n-2})\) matches the behaviour of Rachel. If it turns out that \((\text{DA}^{n-2})\) is very small, then we may well say that Rachel is only a little bit agoraphobic. And if \((\text{DA}^7)\) happens to be a proper subset of \((\text{DA}^{n-13})\), then we are justified in stating that Nicholas is more agoraphobic than Elizabeth. Thus by simply dividing \( \text{DA} \) into subsets, which are then manipulated in accordance with the standard set-theoretical operations, we succeed in giving our originally vague intuition a more precise sense.\(^9\) In the next section I explain how exactly my gradualisation differs from the way in which Hempel and Reichenbach gradualised reduction sentences.

\(^9\) Although a lot is left that could be made even more precise. At least two points are clearly in need of further precision. First, in my approach the members of \( \text{DA} \) do not carry different weights: all are regarded as being equally important with respect to a definition of agoraphobia. In a more refined and developed version of my approach, the members presumably will have different significance. Second, and partly as a result of the first point, the subsets \( (\text{DA}^i) \) do not form an ordering, so that a comparison of the degrees to which different people suffer from agoraphobia is not always possible.

For instance, let \((\text{DA}^j)\) consist of \(\{<\text{OP}-1,\text{SF}-1>,<\text{OP}-2,\text{SF}-2>,<\text{OP}-3,\text{SF}-3>\}\) and let \((\text{DA}^k)\) consist of \(\{<\text{OP}-4,\text{SF}-4>,<\text{OP}-5,\text{SF}-5>,<\text{OP}-6,\text{SF}-6>\}\) \((1\leq j,n,k\leq n, j\neq k)\). If \((\text{DA}^j)\) applies to Jon and \((\text{DA}^k)\) to Kathy, then it does not make sense to say that Jon, or Kathy for that matter, is more agoraphobic than the other person. In this case, both Jon and Kathy are equally agoraphobic, although they suffer from the phobia in totally different ways. In addition, imagine that Leonard has agoraphobia to an extent that is described by \((\text{DA}^l)\)=\(\{<\text{OP}-4,\text{SF}-4>,<\text{OP}-5,\text{SF}-5>,<\text{OP}-6,\text{SF}-6>,<\text{OP}-23,\text{SF}-23>,<\text{OP}-25,\text{SF}-25>\}\). Then Leonard is clearly more agoraphobic than Kathy, since \((\text{DA}^l)\) contains \((\text{DA}^k)\) as a proper subset. Also, Leonard is more agoraphobic than Jon, although Leonard and Jon possess the property in entirely different manners.
3.3.4 Gradualisations: differences in domain and nature

At the beginning of 3.3 I briefly explained the two aspects in which my gradualisation deviates from the Hempel-Reichenbach approach: first, whereas Hempel and Reichenbach gradualise the meaning of a disposition term, my gradualisation touches the disposition itself, and second, whereas the Hempel-Reichenbach gradualisation is dominated by the concept of probability, mine is governed by the notion of intensity. After the operationalisation of my intuition in the manner of 3.3.2 and 3.3.3, the two differences manifest themselves even more clearly. The present section 3.3.4 is meant as an extensive gloss on the latter remark.

The first difference between my approach and the Hempel-Reichenbach view touches the subject matter of the gradualisation; it involves the domain to which the gradualisation is applied. Hempel and Reichenbach, as we have observed, balance on the edge of the analytic and the synthetic. By their lights the reduction sentences still have the double-faced head that Carnap bestowed on them: they are lawlike statements and non-empirical definitions at the same time. As a result, their way of gradualising the reduction sentences might easily mislead us. Whereas it looks as if it involves a gradualisation of dispositions, it actually gradualises the definitions of dispositions. This makes itself felt most strongly through Reichenbach’s notion of probability meaning, which evinces the feature that probability affects the meaning of the disposition statement rather than the disposition itself. What is called ‘probable’ in Reichenbach’s approach are not the observable events which manifest the unobservable disposition, but the connection between the definiendum and the definiens. But as I have tried to argue, the whole idea of a definition being probable is a conceptual monster. The very concepts ‘probability definition’ or ‘probability meaning’ are deceitful, since they pretend to unite what ineluctably remains distinguished: the analytic and the synthetic. Definitions belong to the realm of the analytic, probability statements appertain to the empirical. Mixing the two spheres makes sense only if on a deeper level they remain conceptually separated.91

91 Of course, we are free to call one and the same statement analytic or synthetic, but that does not mean that we may ignore the distinction. In fact, that is one of the lessons Quine has taught us.
Unlike the approaches of Reichenbach and Hempel, mine is not in danger of mixing the analytic and the synthetic. I can pass over ‘probability meaning’ and ‘probability definition’ in complete silence, since I am not interested in making meaning open to grades. When I divide a set of bilateral reduction sentences into subsets, I am not dividing a definition into parts. On the contrary, my entire enterprise makes sense only if we assume that the definition of a disposition remains fixed. For how else could I sensibly present my gradualisation? How can I meaningfully maintain that someone has a little bit of a disposition $D$ if I have no clear knowledge of what it means to have $D$ entirely? The only way in which I can do so is by assuming that degrees prosper on a stable basis, and thus that the definition of $D$ can be fixed in principle. As far as the necessity of this assumption is concerned, I am in the same boat as Hempel and Reichenbach. For not only does the statement that Christopher has a bit of $D$ presuppose knowledge of what it means to have $D$ (entirely), but the statement that Christopher has $D$ probably assumes that knowledge too. Nevertheless, we observed that Hempel and Reichenbach are not particularly fond of this assumption, in the sense that they apparently avoid explicit acceptance of what they implicitly presuppose. In contradistinction to this attitude, I welcome what I need to presuppose: I embrace the consequences of my gradualisation, and assume that the definition of $D$ must be fixed in principle. For only under that assumption does it make sense to speak about having $D$ in grades, no matter whether those grades are grades of probability or grades of strength.

The latter remarks have taken us to the second difference. Whereas the first difference touches the domain to which the gradualisation is applied (dispositions versus meanings of disposition statements), the second one pertains to the nature of the gradualisation itself. When I speak about grades or degrees, I mean degrees of intensity, not degrees of probability. Accordingly, my gradualisation of the set (DA) comprises a division of (DA) into $n$ subsets, (DA$^{1}$), ..., (DA$^{n}$). Each subset (DA$^{i}$) has as its members pairs of stimuli and responses ($0 \leq i \leq n$). Or, as we might say after having jumped to another notation system, each subset has as its members bilateral reduction sentences or pairs of unilateral reduction sentences. The degree to which a person suffers from agoraphobia is then determined by the number of reduction sentences applicable to this person.

However, a gradualisation of (DA) in the spirit of Hempel and Reichenbach would look quite different. Because a Hempel-Reichenbach gradualisation is dominated by the concept of probability, it focusses on the
relation between the definiendum and the definiens. Both Hempel and
Reichenbach regard this relation as a probability relation, although their
views display the following small difference. Reichenbach, true to his
probability connection (VIII.4), situates the probability relation somewhere
between the definiendum on the one hand and the entire definiens on the
other. Thus, if \( AP \) is the definiendum and the definiens, (DA), involves the
set
\[
\{<OP-I, SF-I>, <OP-2, SF-2>, ..., <OP-m, SF-m>\},
\]
then Reichenbach’s probability connection, symbolised by \( \Theta \), holds between
those two:
\[
AP \Theta \{<OP-I, SF-I>, <OP-2, SF-2>, ..., <OP-m, SF-m>\}.
\]
Yet Hempel, faithful to his probability connections in (VII.8), (VII.9),
(VII.12) and (VII.13) - see Chapter VII, Section 4 - situates the probability
relations differently: applied to the example above, probability in Hempel’s
sense somehow nestles down into each single pair \( <OP-i, SF-i> \) \( (0 \leq i \leq m) \).
However, this difference between the ways in which Hempel and
Reichenbach shape the probability relation is not of much importance
compared to the overall resemblance of their approaches.

3.3.5 Gradualising simple dispositions

In 3.3.2 and 3.3.3 I have operationalised my intuition, which I gave in 3.3.1,
that dispositions come in degrees. The operationalisation involves the
gradualisation of a disposition, \( D \), through the division into subsets of the
set, \( V \), of the stimulus/response pairs that jointly constitute \( D \). If \( V \) contains
for instance three different stimulus/response pairs that jointly constitute \( D \), one can divide \( V \) into eight subsets, \( V^1, ..., V^8 \). Relative to subset \( V^i \) \( (1 \leq i \leq 8) \) that suits a
person \( P \), we can then say that \( P \) has \( D \) with such-and-such a degree.
However, the operationalisation in question only works if \( D \) is
broad. For only broad dispositions consist of more than one
stimulus/response pair, hence only broad dispositions can be reasonably
divided into subsets. In the present section I develop a gradualisation for
simple dispositions, i.e. dispositions consisting of a single stimulus/response
pair and hence described by a single bilateral reduction sentence. This gradualisation is suggested by Carnap’s analysis of inductive probability (Carnap 1952b). Although it will turn out not to be strictly applicable to the *akrasia* problem, I include it here for the sake of completeness with respect to gradualisation.

Imagine a regular dodecahedron with a Roman number painted on each of the twelve pentagons. We are given the following additional information. First, the numbers on the pentagons vary from I (1) to C (100). Second, the numbers need not differ from each other - it could even occur that all pentagons carry the same number, e.g. XXXIV. Third, the dodecahedron has been rolled fifty times, and each time someone recorded the number that came out on top. Fourth, the concept of inductive probability matches the axioms of standard probability calculus. These four pieces of information form our evidence, $e$.

Given $e$, what is the inductive probability of the hypothesis, $h$, that the next roll will result in number $i$, where $i$ is for instance XVII? Carnap argued that the answer to this question is not $n_i/n$, where $n_i$ is the number of rolls resulting in $i$ (here: XVII) and $n$ is the total number of rolls (here: fifty). That answer is unrealistic because it fails to take into account that we often reason and judge beyond what we know to be the bare facts. Since we realise that the exact value of $n_i/n$ is highly unstable (it differs after each sequence of rolls), we are inclined to regard $n_i/n$ as a mere consequence of another, less changeable ratio. The latter ratio would then be the inductive probability or confirmation, $c$, of $h$ given $e$: $c(h,e)$. According to Carnap,

$$c(h,e) = \frac{n_i + \lambda/k}{n + \lambda},$$

where $k$ is the number of the possible alternatives (here: a hundred), and where $\lambda$ is a real number that we have chosen before we rolled the dodecahedron for the first time. The minimum value of $\lambda$ is 0, its maximum value goes to infinity. If $\lambda=0$, then $c(h,e)$ boils down to the extremely changeable value of $n_i/n$. If $\lambda$ goes to infinity, then $c(h,e)$ is $1/k$, the value of which is constant. The actual choice of $\lambda$’s value might be seen as reflecting a psychological characteristic. Those who choose very low values are persons without preconceived notions, always prepared to learn from incoming information. On the other hand, someone with the proclivity of
letting $\lambda$ go to infinity is conservative in the extreme. This is the diehard
know-it-all, who refuses to be budged by new phenomena. No matter how
often the number XVII turns up, our man will still maintain that the
inductive probability of ‘The next roll results in XVII’ is \( \frac{1}{100} \).

How can the above analysis of inductive probability help us in
gradualising simple dispositions? Let $D$ be a simple disposition, $P$ a person,
and $t_0$ a point in time. Then the degree, $\text{deg}$, in which $P$ has $D$ at $t_0$ is
symbolised by

$$ \text{deg}(D(P,t_0)). $$

How to specify $\text{deg}$? Since $D$ is a disposition, it consists in a set, $V$, of
stimulus/response pairs; and since $D$ is a simple disposition, $V$ is a singleton:
\{ $<S,R>$ \}. It does not make sense to divide a singleton into subsets, hence
$\text{deg}$ cannot be specified via the number of stimulus/response pairs applicable
to $P$.

In our search for a specification of $\text{deg}$, we could start by observing
the repetitive character of the stimulus and the response in question. For
typically, $S$ and $R$ will occur \textit{more than once}. In fact, a criterion for
ascribing $D$ to $P$ is that $S$ is repeatedly followed by $R$; if $R$ comes after $S$
only rarely, then we will in general not conclude that $P$ has $D$, but at best
decide that $P$ has $D$ only slightly. This suggests that we can specify
$\text{deg}(D(P,t_0))$ by means of $\frac{|R|}{|S|}$ on $t_0$. The latter ratio equals the number
of times, measured at $t_0$, that $P$ has displayed reaction $R$ when in situation
$S$. Hence

$$ \text{deg}(D(P,t_0)) = \frac{|R|}{|S|}. $$

This formula says that the degree to which $P$ has $D$ at $t_0$ equals the relative
frequency, determined at $t_0$, of $|R|$ on $|S|$. It is readily seen that this way
of computing $\text{deg}(D(P,t_0))$ parallels Carnap’s way of computing $c(h,e)$ with
$\lambda=0$. For in both cases the decisive rôle is played by the observed relative
frequencies: both the values of $c$ and $\text{deg}$ equal a relative frequency which
is determined at a certain point in time.

This way of gradualising simple dispositions may sound surprising.
For have I not talked myself blue in the face to avoid the case in which $S$
and $R$ are probabilistically related? Now that I temporarily consider this case
after all, what is the difference between my approach and the Hempel-
Origin of the problem and solution

Reichenbach view? The answer lies in the status of probability as relative frequency. When I speak of relative frequency, I mean an observed relative frequency, adapted to a certain point in time. Thus the value of ‘my’ relative frequency changes after each observation, just as, in our dodecahedron example, the value of \( n_i/n \) changes after an extra roll. On the other hand, the relative frequency in the analyses by Hempel and Reichenbach plays a quite different rôle. Instead of being an adapted relative frequency, as one might call it, it is one of which the value is established in the long run (see Chapter VII, Section 0, and Chapter VIII, Section 2.1).

As might be expected, this particular gradualisation of simple dispositions has a weakness, following from the computation of \( c(h,e) \) with \( \lambda=0 \). Although the gradualisation on the basis of this computation stays close to the facts and in that sense is empirical, it does not enable us to make any prediction about what the actor will do. In thus computing the exact value of \( \text{deg} \), we are so to speak wholly submitted to the regime of past facts. We could of course try to mend matters by choosing a positive value of \( \lambda \), but I doubt whether this strategy would be of any help. For that very choice of ours is a disposition too; hence it must be tested, operationalised and last but not least gradualised. We thus seem to be threatened by an infinite regress.

As intimated above, I do not intend the gradualisation of simple dispositions to be enlisted as a solution of the akrasia problem. For me, an akratic action occurs only when the disposition \( D \) is broad. Apart from the danger of an infinite regress, I have two other reasons for taking that route. The first pertains to the fact that, as we saw in Chapter III Section 3.3, being broad is a matter of description. Many, if not all, dispositions can be described as being either simple or broad. Mostly we will prefer interpreting them in a broad sense, since thus interpreted they are generally more interesting. Consequently, apparently simple dispositions will often be re-interpreted as broad ones. The second reason is more important. If we allow akratic actions to occur when the disposition is simple, we need to know something about the history of the agent; more particularly we must know the number of cases in which his exposure to situation \( S \) indeed led to reaction \( R \). This additional knowledge is an extra complication that I wish to bypass here. I want to speak about akratic actions, even if we are not acquainted with the agent’s past. When, in 3.3.6, I explain how my gradualisation improves our understanding of akratic actions, I shall, therefore, confine my remarks to the gradualisation for broad dispositions.
3.3.6 Knowing what and knowing how much

How does my gradualisation contribute to our understanding of akrasia? Finally we have prepared ourselves to answer this question. As in the case of the gradualisation itself, things appear to be stunningly simple.

The standard way of saying that someone performs an akratic action is by saying that he acts against his best judgement. Typical of the akratès is his four-step behaviour. First he perceives what his beliefs and desires are; then he sets up an impeccable practical syllogism culminating in a clear conclusion to do A; next he decides that all things considered he should do A; finally he does not-A. It is the last step that turns the agent into an akratic. Also, it is the last step that renders akrasia paradoxical: surely it is mysterious to decide in favour of A without actually doing A.

In my view it is the standard description that renders akrasia paradoxical. This description draws a picture of akratic acting which is a specimen of unjustified black and white thinking; the idea that a person sincerely intends A and yet does not do A is far too dichotomous to be called a suitable representation of what actually goes on. The paradoxical air that surrounds akrasia is imparted only by this dichotomous description of it. It diffuses away if we abandon this description in favour of a non-dichotomous one, the outlines of which have been depicted above.

In the new description the akratic still takes his characteristic four steps: he realises his reasons K, he sets up a syllogism on the basis of K culminating in the advice to do A, he decides accordingly for A, and he finally performs not-A. Does this mean, as many philosophers have suggested, that the agent must be mistaken about his own beliefs and desires? Does it mean that he cannot be driven by K? The answer is an unambiguous no. This way of lending meaning to irrational actions is induced by the standard description, which allows only two possibilities: either the agent has K and then he must do A, or he performs not-A but in that case he cannot possibly have K.

According to the new description the agent, P, can have K to a certain degree. This makes it possible that P performs not-A, notwithstanding the fact that he is really being driven by K. In this case he only possesses K in a weak sense, i.e. only a few of the reduction sentences that collectively define K are applicable to him. For instance, let K be defined by a set, UK, consisting of seventeen bilateral reduction sentences:
(uk-1): (x) \{S-1(x) \rightarrow (K(x) \leftrightarrow R-1(x))\}
(uk-2): (x) \{S-2(x) \rightarrow (K(x) \leftrightarrow R-2(x))\}
UK
.
.
.
(uk-17): (x) \{S-17(x) \rightarrow (K(x) \leftrightarrow R-17(x))\},

where ‘S-i’ is an observable stimulus and ‘R-i’ is an observable response (1 \leq i \leq 17). As before, see Section 1, each element of UK is equivalent to a pair of unilateral reduction sentences. Imagine that only three members of UK are applicable to P, e.g. the elements (uk-6), (uk-9), and (uk-14). Then together those elements form a set, (UK^i), which is one of the subsets (namely subset number i) of UK:

(UK^i): \{(uk-6), (uk-9), (uk-14)\}.

Hence P has only a fraction of K, to wit the fraction that is defined by (UK^i). As a result, only a fraction of all the seventeen stimuli function as triggers for P: only if P is in one of the situations represented by S-6, S-9 and S-14 will he display the responses that indicate K. When exposed to one of the remaining fourteen stimuli, P will show no sign of K.

What happens in the case of akrasia is that P has K to a certain extent, for instance the extent described by (UK^i), but is ignorant of it. He only knows that he is motivated by K, not the degree with which this is happening. Thus P is indeed mistaken, and in P there is indeed a weakness - in that sense the standard accounts of akrasia are correct. However, they are not correct enough, for P’s mistake as well as his weakness should be looked upon differently, in particular in the following way.

The mistake that P makes does not touch the quality or the character of P’s beliefs and desires, but only their strength or intensity. It is assumed that P perfectly well knows what his beliefs and desires are. In the standard description it is precisely that assumption which makes P’s irrational actions so difficult to understand, not only for us, but also for P himself, since what he does is completely at odds with what he himself knows to be his reason. In my description the assumption that P knows his reason is preserved, but P is still mistaken. For P is in error about the strength of his reason: he does not know the force of what he believes and
desires, although he very well realises the content of it. The difference between content and strength is quite familiar in the physical, as opposed to the mental, domain. In the physical domain we often fail, or on the contrary succeed, in accomplishing something because we made an incorrect judgement concerning the force of our physical powers: we accidentally drop the television because we are not as strong as we thought we were, or we suddenly ride away on a bike because bicycling turned out to be much easier than we thought it was. In either case P perceives the content of his physical powers: he knows he can carry a television, and he knows that he will learn to bicycle. He just did not know that he can carry only light televisions, and that he would learn to bicycle so easily. Something similar occurs when P performs an akratic action. When P acts akratically, he knows what his reasons are but not what their force is: he is thus mistaken with respect to the strength of his mental powers, in much the same way as one can err in estimating the strength of one’s physical powers.

As for the weakness which is doubtlessly mixed up in akrasia, it differs from the way in which it is pictured in the standard view. For it applies neither to P himself nor to P’s ‘free will’, but only to the presence of K in P: it is K that is weak since K is merely weakly present in P. Thus we should not think of P as someone who is too weak or too weak-willed to perform A and who therefore does not-A. Such a conception of weakness can scarcely clarify akrasia, since it only gives the problem another label; for then we can still ask what it means to be weak or to possess a weak will. Rather we should regard P as someone whose particular reason for a particular action is weaker than he thinks it is. Hence P does R-6 when in situation S-6, R-9 when in S-9, and R-14 when in S-14, all in accordance with that fraction of K which applies to him. However, when in situation S-3, or S-5, or any other of the remaining fourteen situations, he does not act in the corresponding manner.

The idea can be clarified by reference to the classic example of akrasia. If P is an alcoholic who has decided not to drink any more, then P’s decision does not necessarily become insincere or phoney if P starts drinking again. It might be that P can only execute his decision in a limited number of situations, and for instance not when his friend has run away, not when his child is ill, not when he has lost his worldly possessions in a financial crash. Also, it is quite plausible that P might be ignorant of those situations. This is the same as saying that P might perceive the nature of his decision without realising its strength: although P perfectly well knows what
he wants (not to drink any more), he does not quite know the set of conditions under which he can achieve what he wants. Knowledge of that set has to be acquired, notably through experience, i.e. through trial and unfortunately enough through error. Thus P has to find out in which situations he can gloriously succeed, or must miserably fail, in accomplishing what he really wants, namely to stop drinking altogether. Or, as Aristotle said about the knowledge that akritic persons "have and not have": "it has to become part of themselves, and that takes time" (Nicomachean Ethics VII 1147a19-21; cf. Chapter I, Section 3.2).

On the other hand, if P takes that time and accordingly makes the knowledge involved a part of himself, then he has prepared the ground for the exact opposite of akrasia, and thus for what Aristotle called enkrateia. In that case we might say that P ‘knows’ in at least three senses of the word. First, he has knowledge of a linguistic kind. He knows what it means when we say that someone wants to stop drinking altogether, i.e. he knows what the definition of such a disposition is. This definition is not the troublesome probability definition that Hempel and Reichenbach put forward, but a ‘normal’, non-probabilistic one. Second, he knows that the definition is applicable to him. In other words, P knows he himself has the disposition consisting in the desire to stop drinking. Third, he knows to what extent he has the disposition, i.e. he knows the set of conditions under which he can achieve what he wants. Conversely, he also knows which circumstances will cause him to drink.

I have been arguing that akritic actions, at least a great many of them, are best described by saying that the agent lacks knowledge of the third kind: although he knows how the disposition is defined, and although he realises that he has the disposition, he fails to fathom the degree to which it applies to him. Accordingly, he fails to take measures, viz. to avoid the stimuli which cause the responses that he sincerely wants to avoid.

I deem this view of akrasia to be more plausible than the standard one. The latter view focusses on the second rather than on the third kind of knowledge mentioned above. In that sense the standard view heavily relies on the Freudian legacy. There it is argued that the akratès does not know his own motives, or at best knows them only ‘unconsciously’ - whatever that may mean. In my opinion, this makes the allowance for akritic actions unduly expensive. It forces us to assume not only that someone’s reasons for acting are completely unknown (even by the agent himself), but also that the agent’s convictions about his own motives might be quite wrong. I find such
ideas hard to digest, although I realise that in many circles they sell like hot cakes. My description, I think, imbues us with more compassion. For it does not force us to accept that we are totally ignorant of, or totally mistaken about, what we believe and desire. The only thing we have to accept here is that an actor, or the outside world, overlooks the strength of the beliefs and desires in question. This idea sounds more realistic than the ideas with which the standard description saddles us. It is much more likely that we do not realise how much we desire or believe something than that we would err in what we desire or believe. Also, I consider it an advantage that I do not need the distinction between conscious and unconscious knowledge. In my view, an agent may know or not know the degree to which he possesses a disposition. He may even know it partially, in the sense that he has hypotheses about the strength of his own dispositions, but needs more time to acquire accurate knowledge. However, we need not therefore conclude that these hypotheses embody unconscious knowledge.

4. Affinities with other views

The above resolution of the akrasia problem is a novel one that nevertheless captures valid insights of many philosophers discussed in these chapters. 92

92 And of many philosophers who were not at all, or only very briefly, discussed in this book. Michael Slote is an example. Slote discovered an interesting parallel between moral supererogation and what he calls rational supererogation (Slote 1986). Both kinds of supererogation are so to speak anti-dichotomous. Whereas moral supererogation cuts across the idea that actions are either moral or immoral, rational supererogation disclaims that actions are either rational or irrational. Both kinds of supererogation thus allow degrees or grades: an action can be less rational/moral than another action without, however, being irrational/immoral. Slote declared that his thoughts on gradualisation (as I have called it) are influenced by Conee, Kroon, Cherniak, and Simon; in particular Simon’s writings on maximizing and satisfying were for him a source of inspiration (Slote 1986, 471, 480, footnote 25).

It is apparent that Dagfinn Føllesdal also has intuitions about gradualisation. In arguing that man has rationality as a norm, as a sort of Kantian regulative idea, Føllesdal stressed that man’s rationality consist in striving to be rational. Consequently, “rationality comes in degrees, and the crucial question is: how much rationality do we have to require in order to talk meaningfully about desires and other ‘intentional’ notions?” (Føllesdal 1982, 312, my emphasis; cf. Føllesdal 1986).
Socrates, who introduced the problem into Western philosophy, considered *akrasia* impossible on the grounds that no man intentionally acts counter to what he knows to be the best (*oudeis hekon hamartanei* - see Chapter I, Section 1). To believe that akratic actions do occur, Socrates argues, is the result of deception by what merely *seems* to be the case. Shallow people erroneously think that a man can intentionally do what he deems to be not the best action, but the sage and sensible amongst us realise what in fact is going on: the man does not truly know that his act is not the best one, because he is in error about the better and the worse. Thus Socrates reduces *akrasia* to a form of ignorance. That which superficially thinking people carelessly call akratic actions, he argues, are actually instances of ignorance.

What is the nature of this ignorance? As we have seen in Chapter I Section 2, this exactly is the question that Aristotle tried to answer. Aristotle observed that Socrates’ view of *akrasia* contradicts plainly observable phenomena, and that *akrasia* therefore requires additional scrutiny. If an *akratès* indeed acts by reason of ignorance, Aristotle comments in the *Nicomachean Ethics* VII (1145b 29-30), what then is the form or nature of this ignorance? Aristotle’s own writings on *akrasia* are meant to find an answer to this question, and we have seen what this answer is. According to Aristotle, the *akratès* both knows and does not know that his act is not the best. He knows it, in the sense that he possesses that knowledge; yet he does not know it in the sense that he fails to use what he possesses. Now the fact that we can possess knowledge without using it is of course quite common: we know the second law of thermodynamics or the square root of 324, but normally we are not using these particular pieces of knowledge. In the *akratès*’ case, however, the situation is different. For in possessing but not using a certain piece of knowledge the *akratès* resembles the sleeper, the drunk or the madman: he possesses his unused piece of knowledge only *in a partial way*.

This idea of having only partial knowledge faced us with a couple of questions that were hard to answer on the basis of Aristotle’s text.

Furthermore, Michael Bratman may have had an intuition about gradualisation when he referred to the *partiality* of intentions as plans (Bratman 1987). However, Slote as well as Føllesdal and Bratman develop their intuitions on gradualisation differently than I do mine.
Ultimately, Aristotle believes that the *akratès* is overcome by passion. This passion is the source of partial knowledge (it can "drag knowledge about like a slave"); and this incomplete knowledge is the source of *akrasia*. My view of *akrasia*, I think, captures the core of Aristotle’s ideas while renouncing the metaphorical paraphernalia about passions that override knowledge. For my gradualisation enables us to give a rather precise meaning to the idea of having something in part. In my reconstruction, beliefs and desires are dispositions, and dispositions we generally possess in grades. This means that only some of the reduction sentences that define the disposition are applicable to us. Moreover, in the case of irrational actions we are mistaken about the degree to which we possess the disposition in question.

Furthermore, my view also captures the idea of *akrasia* as springing from a mental conflict, which in turn is rooted in a divided mind. As we have seen, this idea occupies a major place in the relevant literature. The core of it was already prominently present in the writings of Plato, and it blossomed out further in Stoic writings, notably those by Poseidonius. Many years later Sigmund Freud so to speak rediscovered the divided mind for psychology, while Davidson did the same for philosophy. In Chapter VI we have seen how Davidson uses both the concept of a divided mind and that of a mental conflict to demonstrate the logical possibility of akratic actions. In order to show that those actions are not just possible in principle but do indeed occur in practice, Davidson appeals to a third concept: the concept of mental causality. Davidson’s final solution of the *akrasia* problem hinges on mental causes that fail to make reasonable what they cause (the so-called MCNR’s) and reasons that do not cause what they make reasonable (the RNC’s). Jointly, the MCNR’s and the RNC’s enable Davidson to argue that one’s all-things-considered-judgement may lack causal power, so that one’s actions are caused by minor judgements and thereby become irrational. However, Davidson’s idea of MCNR and RNC presupposes the idea of mental causation, and that is a vexing concept. Davidson is cognizant of its awkwardness and intricacy, which he tries to allay by introducing two auxiliary distinctions: the distinction between mental and physical events on the one hand and that between causal laws and singular causal statements on the other. But neither is particularly elegant or natural.

My gradualisation retains Davidson’s intuitions without using the two forced distinctions or the concepts of MCNR and RNC that prepare the stage for the notion of mental causation. Davidson’s suggestion that
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Irrationality has something to do with *causality* is preserved in my claim that action explanations are dispositional explanations. Dispositional explanations are forms of causal explanations, where the causal rôle is played by the antecedent event. Since this event is supposed to be physical and observable, we have thereby circumvented the uncomfortable idea of mental causation. Additionally, Davidson’s idea that irrational actions cannot stem from one’s best judgement is also preserved. Someone’s best judgment, I recall, is an all-things-considered-judgement: it accounts for the total set of reasons for and against a certain action. If and only if the set as a whole has causal power, will a decently rational action result. This entails that any proper subset may cause an irrational action, in much the same way as subsets of stimuli form the culprit in my gradualisation.

Finally, my proposal matches the intuition that any sound inquiry into *akrasia* and action explanation should employ the concept of degree or grade. I trust that this need not be clarified any more, after all that has been said about gradualisations in the present chapter as well as in the preceding ones.