

Cognitive neuropsychology and the psychological explanation of delusional belief

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Introduction

Chapter One

Delusions are typically considered to be paradigmatic examples of irrationality. If delusions are in fact irrational beliefs then it may be hard to see how we can even begin to offer a (rational) explanation of them. Folk psychological explanation seems to require that beliefs play a certain functional role where they are formed appropriately; where they engage in appropriate inferential relations with other beliefs; and where they conjoin with desires in order to produce the relevant action. If delusions are irrational in the sense of being abnormal in one or more of these respects then it might be the case that we are unable to offer a folk-psychological explanation of delusional belief.

Recent advances in the neurosciences have provided findings and theorising that are would seem relevant to offering a physical level explanation of delusional belief by recourse to cerebral trauma. Recent advances in the cognitive sciences have provided findings and theorising that would seem relevant to offering a design / cognitive level explanation of delusional belief by recourse to malfunctioning cognitive mechanisms. The relevance of these sub-personal levels of explanation for a psychological, person level explanation of delusion may be far from clear, however. Searle considered that mental states can only be classified as ‘mental’ because they are capable of being consciously experienced by the subject. Prima facie, neurological abnormality and / or cognitive disruptions that occur on the sub-personal level thus would not seem to be terribly relevant to a person level psychological explanation of delusional belief.

Chapter Two

Ellis and Young (1990), and Stone and Young (1997) consider a cognitive model of face recognition that would seem relevant to explaining delusions of misidentification with regards to all of these levels of explanation, however. They consider that localised cerebral trauma (on the physical level) can result in a cognitive mechanism malfunctioning (on the design / cognitive level). They then consider that the malfunction of the cognitive mechanism results in a person level anomalous experience for the delusional subject. If this is the case then it would seem that there are prospects for a psychological explanation of delusion as one can appeal to the prior person level state of anomalous experience. If we want an explanation of the aetiology of the anomalous experience, however, then we would seem to need to revert to the sub-personal levels of cognitive neuropsychological explanation.

The psychological theorist Brendan Maher (1999, 2003) considers that delusions are ‘normal’, ‘understandable’ and indeed ‘rational’ explanations for anomalous experiences. He considers that anomalous experiences (of a certain intensity and duration) are both necessary and sufficient for the production of delusion and that were any of us to have experiences comparable to the experiences of the delusional subject that we would develop comparable delusions. This line has been countered by two-factor theorists who maintain that delusions would not seem to be ‘normal’, or ‘rational’ responses despite the nature of the delusional subjects anomalous experience. Two factor theorists are thus faced with the task of specifying the nature of the delusional subject’s irrationality in a way that is deviant enough to result in delusions but not so pervasive as to rule out their exhibiting rationality comparable to normal subjects outside the context of their delusional belief in their daily lives.

Chapter Three

An attribution bias has been appealed to in the attempt to explain how it is that the delusional hypothesis occurs to the subject in the first place. Even

if an attribution bias were sufficient to explain how the delusional hypothesis occurs to the subject in the first place (which it does not seem to be) then there would still seem to be a step between there and adoption of the delusional hypothesis as a belief. A tendency to jump to conclusions has been appealed to in the attempt to explain how it is that the delusional subject comes to adopt the hypothesis as a belief. It might be the case that the person simply jumps to the conclusion that the first hypothesis that the attribution bias delivered to them is correct. While there is empirical support for the ‘jumping to conclusions’ hypothesis it is problematic that delusional subjects who were found to jump to conclusions were also found to be very willing to change their mind and jump out of the conclusion once more evidence came in. Attributional bias and a tendency to jump to conclusions would thus be insufficient to explain why it is that the delusional belief is retained despite what the APA considers to be ‘incontrovertible and obvious proof or evidence to the contrary’.

Stone and Young suggest that perhaps the nature of the delusional error might be better described as a tendency to adopt beliefs that are observationally adequate over beliefs that are appropriately conservative. They consider that if a person is attempting to come to beliefs that are adequate in the face of their anomalous experiences then an attributional bias and a tendency to jump to conclusions might explain how the person arrives at the delusional hypothesis and how they come to adopt the hypothesis as a belief. With respect to retaining their belief, however, they consider that the delusional error is to retain it despite their awareness that it conflicts with almost everything they previously knew to be true. They suggest that in the cases where the person isolates their delusional belief off so that it doesn’t form appropriate inferential relations with their other beliefs and does not lead to action we might expect that this happens on the grounds of conservatism. Subjects with circumscribed delusions thus retain conservatism enough to isolate their belief rather than following inferential relations with other beliefs and desires which may lead to the more pervasive madness exhibited by some psychotic subjects. The delusional error, however, is in their

not being conservative enough to reject the delusional belief in the face of its inconsistency with everything they previously knew to be true.

Davies and Coltheart (2000) consider that there may be two ways in which we can understand the observational adequacy requirement. They consider that on the first reading of observational adequacy the subject is attempting to explain their anomalous experience by recourse to the way things are in the world. Davies et al. (2001) consider that normally we do accept our visual experiences to be veridical and thus the delusional subject might arrive at their delusional belief by simply accepting their anomalous perceptual experience to be veridical – as normal subjects do. The nature of the delusional error, however, would be that they retain their delusional belief in spite of rational grounds to doubt the veridicality of their percept. On the second reading the data to which the person’s beliefs are supposed to be observationally adequate concern their experiences. They then consider that this wouldn’t seem to be the nature of the delusional subject’s error, however, because they would be correct that their anomalous experience does need to be explained. They consider that in this case the appropriate explanation would be that something has gone wrong with their brain.

Chapter Four

Davies and Coltheart, and Davies et al. consider that a problem with their account of the nature of the second factor is that if the delusional error is in accepting an anomalous perceptual experience to be veridical despite rational grounds to doubt the veridicality of the experience then we would expect them to do this in the face of all their anomalous perceptual experiences. If the delusional subject were to encounter visual illusion, for example, they would be expected to accept the illusory experience as veridical even after coming to know something of how the illusion is produced, and even after seeing the arrow heads on the Muller-Lyer illusion removed and then reinserted. They then consider that this prediction seems a little implausible.

If there is sub-personal cognitive mechanism which registers familiarity then

it might be the case that certain kinds of breakdown in the mechanism could result in affective experiences with a rich content such as ‘this person is familiar to me’ or ‘this person is not familiar to me’. If this is plausible then it would seem that there could indeed be a fairly rich content anomalous experience so that the delusional subject only needs to accept this to be veridical rather than engage in inferences in order to arrive at the content of the delusional belief. If this is plausible then it would also seem that the nature of the delusional anomalous experience might be better characterized as *affective* rather than *perceptual* however. If we consider the nature of the cognitive mechanism whose malfunction is thought to lead to an anomalous experience then there might be prospects for modifying Davies et al’s account so that it no longer entails the problem of the unwanted prediction. So long as the relevant anomalous experience for the production of delusion is necessarily an *affective* experience then visual illusion (as an anomalous *perceptual* experience) would simply be the wrong kind of anomalous experience for the production of delusion.

There may still be a problem with respect to why it is that the delusional subject is so very certain of what they are saying. Why is it that they retain their delusional belief in the face of alternative explanations? At this point I think it may be profitable to return to the suggested second reading of Stone and Young’s observational adequacy requirement where the data to which one’s beliefs are supposed to be observationally adequate concern one’s experiences. Davies and Coltheart consider that if this reading of observational adequacy is accepted then we would need to appeal to something along the lines of attributional bias to explain why the delusional hypothesis is prioritized over the non-delusional alternative hypothesis that ‘something has gone wrong with my brain’. If the delusional subject is attempting to come to a psychological explanation for their anomalous experience and the only non-delusional alternatives are neurological then it might be the case that there is no alternative non-delusional psychological explanation for their anomalous experience. While Maher considered delusions to be rational responses to anomalous experiences and he considered delusions could be given a psycho-

logical explanation by recourse to the prior psychological state of anomalous experience he did not attempt to offer a psychological explanation of the origins of the anomalous experience in turn, however. Instead, he considered that the anomalous experience was to be explained by appealing to underlying neurophysiological deficit.

Davies and Coltheart consider that an alternative non-delusional hypothesis may be ‘it is as if my wife has been replaced by an impostor’ or ‘it seems to me as though my wife has been replaced by an impostor’. It should be noted that these are not alternative explanations for the delusional anomalous experience, rather they seem to be non-delusional alternatives to delusions only if delusions are considered to be reports of experience. It may be plausible to consider that delusions are reports of experience because we have already considered that delusional anomalous experiences might well have rich content and thus a step of inference between the content of the delusional experience and the content of the delusional belief is not necessary.

While one way in which our attention can become focused on our experiences rather than the external world that our experiences are taken to represent is by the person realizing that there is a mismatch (in the case of visual illusion, for example) Davies and Coltheart consider that there is another way in which experiences can become the object of our attention (and presumably of our beliefs as well). Itches, pains, tickles, and the like are experiences where it does not make sense to say that they are true or false, veridical or not veridical. I would like to consider that the affective anomalous experiences of delusional subjects might well be such experiences. If this is the case and the subject is attempting to report on their experience then it might well be the case that they are entitled to the sense of conviction that they are found to have regarding their delusional belief. It might be the case that when the anomalous experience is relatively mild they preface their utterance with ‘it seems to me as though’ or ‘it is like’ but as those experiences become more intense (as in the case of the Cotard delusion) the person is attempting to convey the force or intensity of their anomalous experience and to preface their utterance with that qualification would be inadequate in that respect.

It may be that people often question the delusional subject attempting to get them to explain why they believe what they believe, or telling them that their belief is false and implausible. This may create an unhelpful dialectic where the delusional subject comes to elaborate on their delusion and perhaps even act on them in an effort to demonstrate their certainty in the face of their experience. Such a move does seem to require their having come to accept their anomalous experience as veridical, however. When people do act on their delusions then it would seem that a report / explanation of experience model would be inadequate. In those cases we would seem to need something along the lines of Davies et al's account. In the cases where people do not act on their delusion then the report / explanation of experience model may be better able to handle those cases, however.

This report / explanation of experience model may have implications for therapy for delusions. Instead of requesting the subject to explain the rationale for their belief (which may serve to encourage their elaboration) in the attempt to draw out contradictions and ultimately confront their sense of certainty head on, more progress might be made with empathetic validation of the subjects anomalous experience *as an anomalous experience* and this process may make it more likely that the delusional subject will be able to be shown the distinction between their anomalous experience (as it occurs in a fairly limited context) and states of affairs in the world which may well be otherwise.

Chapter 1

Folk psychological, cognitive, and neurological explanation of delusion

1.1 Types of delusions and delusional utterances.

People with the *Capgras*¹ delusion maintain that someone who is close to them has been replaced by an impostor. Subjects with the *Frégoli* delusion maintain that people they know are disguising themselves as strangers, and are following them around. People with the neurological condition of *unilateral neglect* may disown part of their body, typically their left arm or leg. Subjects with *reduplicative par-amnesia* may maintain that places or people have been duplicated. One woman maintained both that her husband died long ago, and that he was a current patient on the ward. Another woman spoke of a duplicate hospital in a duplicate location. People with *mirrored self mis-identification* maintain that their mirrored image is another person

¹Refer to table 1.1 for a summary of the types of delusions whose names have been emphasised in-text.

who follows them around by appearing in every mirror they look in to. These are all thought to be different types of delusions of misidentification.

Some subjects have delusions of *thought insertion* when they maintain that someone else's thoughts are being inserted into their mind. People with delusions of *alien control* maintain that someone else is initiating or controlling their actions. People with the *Cotard* delusion maintain that they are dead. People who have delusions of *thought broadcast* say that their thoughts are being broadcast so that other people can hear them, and people with *thought withdrawal* maintain that thoughts are being taken from their mind. Some people with delusions of *grandeur* maintain that they are God, or some other important figure. Subjects with delusions of *persecution* / *paranoia* maintain that they are being targeted by another person or group of people like the FBI. People with delusions of *jealousy* may maintain that their partner is cheating on them, and subjects with delusions of *erotomania* maintain that some important figure is in love with them. People with *somatic* delusions have delusions about their own body, such as saying that they don't have any internal organs. Delusions of *reference* occur when the subject says that some event or thing took on special significance or meaning to them. One person saw some marble tables and said he came to believe that the world was coming to an end. These kinds of delusions and some typical examples of the utterances that characterize them are summarized in table 1.1.

Table 1.1: Types of delusions and examples of delusional utterance.

Type of delusion	Delusional utterance
<i>Capgras</i>	'My wife has been replaced by an impostor'
<i>Frégoli</i>	'People I know are disguising themselves and are following me around'
<i>Unilateral neglect</i>	'It's not my arm – it's yours'.
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Table 1.1 – continued from previous page

Type of delusion	Delusional utterance
<i>Reduplicative paramnesia</i>	‘My husband died long ago – but he’s also a patient on this ward.’
<i>Mirrored self-misidentification</i>	‘There is a person in the mirror who follows me around’
<i>Thought insertion</i>	‘Someone else’s thoughts are being inserted into my mind’
<i>Alien control</i>	‘Someone else is initiating my actions’
<i>Cotard</i>	‘I am dead’
<i>Thought broadcast</i>	‘Other people can hear my thoughts’
<i>Thought withdrawal</i>	‘Someone is taking thoughts from my mind’
<i>Grandeur</i>	‘I am God’
<i>Persecution / paranoia</i>	‘The FBI are out to get me’
<i>Jealousy</i>	‘My husband is cheating on me’
<i>Erotomania</i>	‘Winston Peters is in love with me’
<i>Somatic</i>	‘I don’t have any internal organs’
<i>Reference</i>	‘The tables signified that the world was coming to an end’

1.2 Issues of definition and diagnosis

Delusions are to be found across at least 75 different endocrine, neurological, and psychiatric conditions (Garety and Hemsley, 1994 p.10). The clinicians handbook the *Diagnostic and Statistical Manual of Mental Disorders* defines delusion as:

[A] *False² belief based on incorrect inference about external reality that is firmly sustained despite what almost everyone else believes and despite what constitutes incontrovertible and obvious*

²Key words emphasized from the DSM are further explained in Table 1.2

proof or evidence to the contrary. The belief is not one ordinarily accepted by other members of the person's *culture or subculture...* (American Psychiatric Association, (2000) pp. 821-822).

This definition has generated controversy on each substantial claim that it makes. It has been questioned whether delusions must be false, beliefs, inferences, incorrect inferences, and so forth. It may well be plausible that our concept of delusion is a cluster concept and as such will resist our attempts to capture the necessary and jointly sufficient conditions of the phenomena. Even if this is so, and even if the APA definition is construed as an attempt at a cluster concept analysis rather than as a list of necessary and jointly sufficient conditions, it is still widely accepted that it needs work and there is ongoing research on improving the definition. Some of the controversy is summarized in Table 1.2.

Table 1.2: Issues raised by the *DSM* Definition of Delusion.

Type of delusion	Delusional utterance
<i>False</i>	Not all delusions are false e.g., someone may have constantly accused their partner of infidelity over a number of years which may result in their partners being unfaithful.
<i>Beliefs</i>	Campbell (2001) says delusions can't be beliefs because beliefs are required to be contentful states but delusions can't be assigned a consistent content. Gregory Currie (2000) maintains that delusions are states of imagining that are misidentified by the delusional subject as states of belief. Berrios (1991) considered delusions to be empty speech acts.
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Table 1.2 – continued from previous page

Type of delusion	Delusional utterance
<i>Incorrect</i>	Brendan Maher (1999; 2003) does not consider them to be ‘incorrect’ in the sense of being irrational, or deviant from the inferences of non-delusional subjects.
<i>Inferences</i>	Davies et al., (2001) and Davies and Coltheart (2000) maintain that the delusional error may be in simply accepting a faulty perceptual experience to be veridical. This does not seem to involve an obvious step of inference.
<i>Regarding external reality</i>	Delusions may concern the subject’s own thought processes as in thought insertion and thought broadcast.
<i>Firmly sustained</i>	There is evidence that degree of conviction may vary over time (see Walkup, 1995 p. 324).
<i>The beliefs of others</i>	It would seem plausible to consider that a sub-culture may exhibit a group or mass delusion as in the case of some bizarre cults. It may also be that an adequate definition of delusion should specify intrinsic rather than relational properties of the phenomenon.
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Table 1.2 – continued from previous page

Type of delusion	Delusional utterance
<i>Evidence to the contrary</i>	It is far from clear that delusional subjects are routinely presented with ‘incontrovertible and obvious proof or evidence to the contrary’ before diagnosis, or that they gain access to this kind of evidence during their recovery (see Walkup, 1995). It may be that delusions are typically the sorts of things that it is hard to find supporting or dis-confirming evidence for (such as spiritual or religious beliefs; belief in UFO’s and / or conspiracy theories; belief that one is living in a matrix, vat, or dream).
<i>Culture or subculture</i>	As in 7. The belief may be shared with a group.

While we may be able to imagine contexts in which each of the utterances considered in 1.1 would not constitute a delusion (while reading my thesis aloud, for example), those people who are taken to be delusional really do seem to believe a literal interpretation of the claims that they are making. Although delusions are typically considered to be beliefs, it is important to be aware that one cannot access another’s beliefs directly. Diagnoses of delusion are thus made on the basis of the behaviour, and more especially the verbal behaviour of subjects. As the APA definition does not provide a neat criterion for determining whether a subject is appropriately classified as delusional, it seems that diagnosis is more often a matter of considering what the patient says and matching that to the fairly standard, paradigmatic examples of delusional utterance that were considered in Table 1.1.

1.3 Two dimensions: Monothematicity and circumscription

The majority of current research on delusions has focused on delusions which exhibit the following two features:

Monothematicity - Monothematicity refers to the finding that some people may have a single delusional belief in the sense that it is focused on a fairly specific theme. In the Capgras delusion, for example, the person says that someone they were close to has been replaced by some kind of impostor, but their other utterances don't seem to be indicative of any other variety of delusion. Monothematic delusions tend to arise in response to fairly specific cerebral trauma, in contrast with the polythematic delusions of some psychotic subjects who tend to develop more elaborated delusional systems. In some extreme cases of this the person may seem to 'produce a new delusion in answer to almost every question' and seem to be 'effectively living in a solipsistic delusional world' (Stone and Young, 1997, p. 329).

Circumscription - The degree of circumscription may be assessed on two dimensions. Firstly, it has to do with how isolated the subjects delusional belief has become from the rest of their belief network with respect to inferential relations with other beliefs. Secondly, it has to do with how the delusional belief seems to have become isolated from the subjects desires in the sense that it does not lead to action we would expect. In an example of the latter some subjects with circumscribed versions of the Capgras delusion show little concern for the fate of their loved one and they make no attempt to locate them. The delusional belief thus seems to be isolated from their other beliefs and also their desires.

People with cerebral injury, as well as exhibiting monothematic delusions, seem to have delusions that are more circumscribed than subjects with psychotic delusions. Someone with the Cotard delusion may maintain that they have died despite feeling their heart beat. Subjects with psychotic delusions are more likely to follow inferential relations. A subject with the Capgras

delusion may maintain that the replacement of their wife by an alien is part of the alien's greater plans for world domination, for example. People who develop the Capgras delusion as part of a psychotic disorder tend to exhibit more general paranoia than those who develop the same kind of delusion in response to cerebral trauma. Subjects with psychotic delusions are also more inclined to act on their delusion, as when one man decapitated his step-father in order to look for the batteries and micro-film in his head (Stone and Young, 1997 p. 333).

While traditionally the main focus of research has been on the more florid delusions of some psychotic subjects, current research has focused more closely on the relatively monothematic and circumscribed delusions that are typically found in subjects with cerebral injury. One of the reasons behind this current approach is the thought that it might be more tractable to attempt to offer an account of these comparatively simple delusions. It may turn out to be the case that an explanation of these varieties of delusions may be extended to account for the more elaborated and polythematic delusions of some psychotic subjects. Whether this will turn out to be the case remains to be seen. It is clear that one must start from somewhere, however, and it would seem sensible to begin with the relatively simple cases and attempt to work out way up to the harder ones.

1.4 Psychological Explanation and Rationality Constraints on the Role of Belief

People were able to predict and explain their own behaviour, and the behaviour of others fairly successfully long before the development of a science of behaviour. This method of folk-psychological prediction and explanation has been talked about by a variety of authors, sometimes under the rubric of 'intentional systems theory' (e.g., Davidson, 1984; Dennett, 1969, 1978, 1998; Braddon-Mitchell & Jackson, 1996; Sterelny, 2003). In order to make a psychological prediction about the behaviour of an object, person, or 'system', we are required to adopt what is known as the 'intentional stance'

towards the system whose behaviour we are attempting to predict. Adopting the intentional stance involves attributing the following three things to the system:

Motivational States - It is thought that intentional systems have a variety of motivational states such as drives, desires, wants, and preferences. These states are thought to function by motivating the system to act so as to lead to their satisfaction - when all goes well. Intentional systems may have a drive or desire for something; or they may want or prefer a specific outcome. Intentional systems are thought to have a variety of these motivational states, and which state takes priority for action varies over time.

Representational States - It is thought that intentional systems have a variety of representational states such as perceptions, memories, and most notably, beliefs. These states are thought to function to represent aspects of the external world primarily, though they may also represent motivational or other representational states; as when an intentional system has beliefs about what they desire, or 'higher order' beliefs about their other beliefs. Because the function of representational states is to represent, it is thought that they represent accurately, or truly - when all goes well.

Rationality (Practical) - It is thought that intentional systems will behave (or act) in such a way as to lead to the satisfaction of the highest ranking motivational state on the assumption that their representational states are true. This is often called the constraint of 'practical rationality'. Without this assumption it would be hard to see how attributing motivational and representational states to an intentional system would imply anything at all for their behaviour.

The above account has been derived from a conceptual analysis of how mental state terms - such as belief and desire - function in our everyday folk-psychological prediction of behaviour. The intentional stance and the psychological states that are attributed to an intentional system are used not only to predict the systems behaviour; they are also appealed to in an attempt to explain why a system behaved as it did, or what the rationale was

for their behaviour. As we have seen, we are required to make three assumptions in order to adopt the intentional stance. The first assumption is that we consider that the system has motivational states. The second assumption is that we consider that the system has representational states. The third assumption is that we consider that the system is subject to a constraint on the role that belief plays in conjunction with desire for the production of action. This third assumption is the constraint of practical rationality. If we consider the functional role of belief in a little more depth, then we can see that there are (at least) two other rationality constraints on the role of belief in psychological prediction and explanation.

Rationality (Belief Formation) - Initially it may not seem obvious that the process of belief formation is governed by ‘rationality constraints’. There must be some principles guiding how we decide what beliefs are and are not appropriate to attribute to an intentional system however. The rationality constraint can’t be expressed as attributing beliefs that are true because we know that intentional systems often have false beliefs. Indeed, it is often thought that one must grasp that beliefs or representations may be false in order to grasp the concept of belief or representation itself.

A person could place an object in a certain location and leave the room. Another person could come into the room and move the object to a new location. We know enough about the process of belief formation to know that the first person is not able to update their belief network with a belief about the object’s new location, as the information about the new state of the world is unavailable to the person. Under these circumstances we know enough about the normal process of belief formation to attribute a false belief to the person, and to predict that they are more likely to look for the object where they left it rather than looking for it where it actually is. Davies and Stone (1995) consider an experiment that was conducted in order to see whether 3 year olds and 5 year olds were able to attribute a false belief to a person in the described circumstances. The experimental results have been interpreted as showing that children normally acquire the concept of belief somewhere between ages 3-5. Under the circumstances it

would seem rational for the system to believe the object to be where they remember leaving it, and we seem to grasp this when we attribute a false belief to them. This constraint on belief attribution is sometimes cashed out as adopting a ‘principle of humanity’. The principle of humanity requires us to appreciate that beliefs are constrained by the person’s limited access to the state of the world. People form beliefs about the state of the world by forming beliefs on the basis of their perceptions, for example.

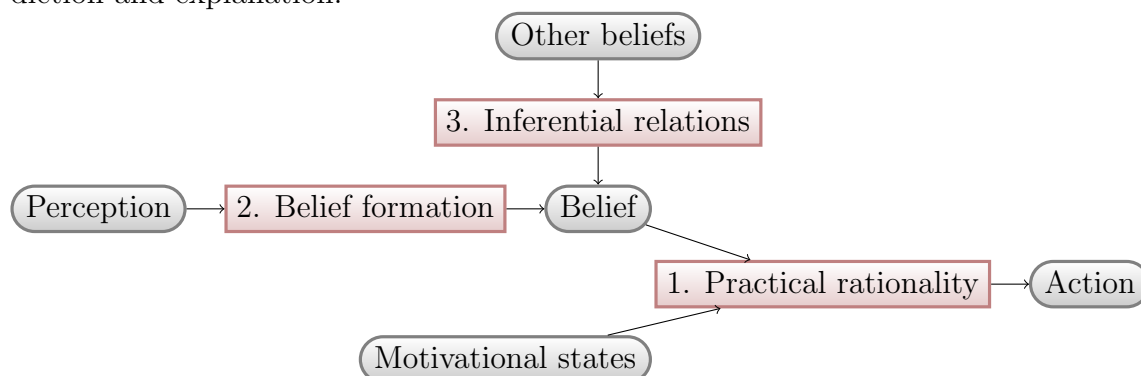
If I was walking around the room and I fell over a chair, then clumsiness aside, psychological explanation would suggest that either I failed to perceive the chair and thus did not believe it was there, and so I walked into it accidentally; or that I perceived it, came to believe that it was there, and must have desired to fall over it for some reason (motivation) or other. It would be hard to see what sense we could make of someone perceiving the chair in the room and yet not coming to the belief that there was a chair in the room. We would seem to need something of a story as to why they saw fit to discount their perceptual experience of the chair.

Rationality (inferential relations) - There would also seem to be constraints on the beliefs that we can legitimately attribute to intentional systems in virtue of the inferential relations that are thought to obtain between beliefs. It would follow from the points that beliefs are thought to be representational states, and that contradictory states of affairs cannot be the case, that contradictory beliefs could not both be true and that a self-contradictory belief could not be true. The inferential rationality exhibited by intentional systems is limited, however. When we follow through logical entailments, we may discover that our beliefs lead us to endorse contradiction. This would seem to be a fact about our psychology because thinking through logical entailments takes time and we do not have an infinite amount of time to spend on following through the logical entailments of all of our beliefs.

It is hard to see how somebody could persist in believing a contradiction once the logic has been pointed out to them, however. Because representational states are supposed to be true (when all goes well) and because contradictions cannot be true, it is thought that people should be motivated to resolve

contradiction by giving up one or more of the beliefs that led them into it. In order to treat something as an intentional system it would seem that we are required to attribute rationality to it in three places (see Figure 1.1).

Figure 1.1: Rationality constraints on the role of belief in psychological prediction and explanation.



1.5 The Problem of Delusions as Irrational Beliefs.

Delusions have long been considered paradigmatic examples of irrational belief. If delusions are beliefs / representational states then it would seem that psychological explanation should be appropriate, and yet if delusional beliefs breach the rationality constraints on the role of belief in psychological explanation then it may be hard to see how we can offer a psychological explanation of delusion. If delusional beliefs are irrational because they flout the constraints of belief formation, inferential relations, and / or practical rationality that were considered in Figure 1.1., then it might be the case that we will be unable to offer a psychological explanation of delusion. I now want to consider some of the points that have been made that suggest that delusions are irrational beliefs and thus seem to rule out the possibility of a psychological explanation of delusions. I shall then consider whether we would be best to abandon the project of psychological explanation in deference to a neurophysiological account of the varieties of physiological abnormality that seem to be implicated in the production of delusion. I shall ultimately conclude

that there may still be prospects for offering a psychological explanation of delusion.

Belief formation - Karl Jaspers (1963) was an early psychiatrist / philosopher who considered that primary delusions, or delusions proper are un-understandable in the sense that they cannot be explained by recourse to the subjects prior perceptions, experiences, or beliefs. Jaspers' thought seems to be that something is going wrong with the belief formation processes of people who have delusional beliefs. If this is so then this might be one way in which the delusional subject is irrational. The fact that we are unable to make use of the assumption of rationality in belief formation might rule out the possibility of a psychological explanation of delusional belief. Jaspers draws this conclusion and maintains that, while such delusions may possibly be given a neurological explanation which appeals to some underlying brain pathology, primary delusions are not understandable from the psychological level.

Inferential relations - People with the Cotard delusion maintain that they are dead. One delusional subject is reported to have said 'I am not and am condemned to going on being nothing forever'. Descartes showed us that so long as one appreciates that doubting is a form of thinking it is impossible to doubt one's existence as a thinker. If the delusional subject is attempting to express the belief that they do not exist as a thinker, then we may be tempted to attribute a self- defeating (or self-contradictory) belief to the delusional subject. The constraint of non-contradiction would seem to rule out us being able to attribute this belief, however. It would seem that we cannot make sense of a person being certain that they do not exist as a thinker if they appreciate that doubting (or being certain) is a form of thinking.

The American Psychiatric Association definition of delusion considers delusions to be 'false beliefs... about external reality'. This definition of delusion doesn't sit so well with the 'cogito' interpretation of the content of the Cotard delusion. The APA definition seems to be more consistent with an interpretation where the subject is making a false claim about their no longer being biologically alive. This has historically been the main interpretation of the

belief that the subject is attempting to express with their delusional utterance. Clinicians attempted to provide evidence against the subject's claim that they were dead by drawing their attention to such facts as the subject being able to walk around, being able to feel their heart beat, and feeling bodily urges such as the need to go to the bathroom. That the subject did not seem to take such biological signs of life as evidence against their delusional belief was taken as evidence for the irrationality of the delusional subject.

What doesn't seem to have been noted is that beliefs such as 'I can feel my heart beating' and 'I can still walk around' do not seem to straightforwardly contradict the belief 'I am biologically dead'. To extract a contradiction from these beliefs we need to add further beliefs and make them explicit. Let's look at the logic of this:

- P1) I can feel my heart beating
 - P2) I can still walk around
 - P3) I feel bodily urges such as the need to go to the bathroom
-
- C1) I exhibit biological signs of life
-
- C2) Anything that exhibits biological signs of life cannot be biologically dead
-
- C3) I am not biologically dead
-
- P4) I am biologically dead (The delusional belief)
-
- C4) I am not biologically dead and I am biologically dead

If the subject were to follow the logic through endorsing the conclusions, then it seems that they would be led to endorse the belief that they are and are not biologically dead at the same time. This unpacked analysis of the Cotard delusion seems to result in a self-contradictory belief once again. It

has been noted that sometimes we may be ‘rationally’ motivated to tolerate contradiction, as when the ramifications of altering either one of our beliefs would logically entail that we revise a large number of our other beliefs, and when there are more pressing matters (desires) to attend to. What would seem to be irrational about this interpretation of the Cotard delusion, however, is the *certainty* with which the delusion is expressed. If a delusional subject was to continue to endorse their delusional belief as *certain* despite endorsing the premises, following the logic to the conclusion, and seeing the resulting contradiction, then it would indeed be hard to see what sense we can make of their delusional belief.

John Campbell (2001) considers that since delusions are beliefs we should be able to give a psychological explanation of them. He maintains that in order to ascribe propositional attitudes such as belief and desire to a subject we must presuppose that the subject is rational. We may consider that were we to encounter a speaker who used the term ‘and’ to license inferences appropriate to our usage of the term ‘or’ and used the term ‘or’ to license inferences that were appropriate to our term ‘and’ then the appropriate thing to conclude is that for this subject the term ‘and’ means ‘or’, and the term ‘or’ means ‘and’. The notion here is a Quinean one, that the meaning of an expression is given by the inferences that it licenses. While this is expressed as a point about the meaning of utterances, there would seem to be a parallel point with respect to the content of the belief that the person is attempting to express with their utterances. Campbell considers that ‘the finding of irrationality can always be traded for a finding of mistranslation’ and he considers that we must always radically translate so as to find a subject rational in their use of a term. We might consider that once again there is a parallel point to be made about constraints on belief attribution where we must always radically interpret the content of the belief so as to make the subject out to be operating within the constraint of inferential relations.

Campbell attempts an analysis of the delusional utterance ‘that woman is not my wife’ which may be found in subjects with the Capgras delusion. He considers that this utterance has a standard meaning, and we could under-

stand someone saying or believing this if, for example, they were doubting whether their marriage ceremony had been legitimate. Campbell considers that even if the subject was wrong about this, we would not consider them to be expressing the Capgras delusion, however, and so this analysis would be inadequate to capture the content of the Capgras delusion.

Campbell considers that the delusional subject presumably has the accurate belief that ‘that [remembered] woman is my wife’, and thus the subject would not seem to be doubting or questioning the legitimacy of the marriage ceremony. Campbell maintains that if the delusional subject were to make the claim ‘that [currently perceived] woman is not my wife’ then we would be required to engage in translation to capture the content of the Capgras delusion, as the subject could not be both rational and using the term to express the standard meanings of those terms. We could take a similar point with respect to the content of the Cotard delusion where we cannot attribute the belief that they do not exist as a thinker. In engaging in translation we may be tempted to interpret their belief as their being biologically dead, however, we cannot accept this interpretation either if they were to attempt to endorse the resulting contradiction that they both are and are not biologically dead at the same time.

Practical rationality - Campbell considers that it may be more appropriate to translate the Capgras delusional utterance as ‘this [perceived] woman is not that [remembered] woman’. This sounds to me to be similar to the two interpretations or translations that we could offer of the claim ‘that woman is not the Queen’. One might be calling that woman’s claim to the throne into doubt (Campbell’s ‘standard meaning’) or one might be claiming that the person is really a stand in look alike or some kind of impostor. Campbell considers that this interpretation is still problematic, however. He considers:

How would you go about verifying such a judgment? You would have to check that the woman you currently perceive is indeed the one of whom you have all those memories. The canonical way to do this would be to find out whether you have shared memories of the events in which you both took part. And the canonical

way to do that would be to discuss those past events... Since the patient does not use this way of checking who it is that is before him, he seems to have lost his grasp of the meaning of the word (Campbell, 2001 pp. 90-91).

What seems to be bothering Campbell at this point is the constraint of practical rationality in the sense that the delusional subject does not seek to verify their belief in the way we would expect. Many people with the Capgras delusion also show little interest in the fate of the original, even when questioned about it. They may also make no effort to search for the original, and they may not contact the relevant authorities to report the disappearance of their loved one. The delusional subject does not seem to act in ways we would expect and thus they seem to flout the assumption of practical rationality.

These findings seem to rule out this alternative reading of the content of the Capgras delusion as something that we can attribute to the delusional subject. The constraint of practical rationality would also seem to be what is most problematic about grandiose delusions. It doesn't seem to be internally contradictory to believe that one is Napoleon (though contradictions may be extrapolated). The problem is that the person does not behave in ways we would expect them to behave were they to literally believe this (i.e., they do not attempt to order their 'troops' around in the hospital). There would also seem to be problems with their rationality in belief formation with respect to how they could come to believe this in the first place.

Davidson (1984) notes that we are required to triangulate beliefs, desires, and behaviour in our psychological predictions and explanations. It might be possible to attempt to attribute other beliefs and desires to the delusional subject in order to make them out to be exhibiting practical rationality. The people who do not act in ways we would expect may have further beliefs, such as the belief that the authorities will not take them seriously; and they might have different desires, such as happiness that their wife or child has gone. Nobody seems to have employed this line, however, most probably because such a move would seem to merely shift the problem of irrationality

back creating more of a problem for the other two rationality constraints.

1.6 Three levels of explanation

Campbell is led to the conclusion that there is no consistent content that we can attribute that is both derived from standard meanings of the terms and that makes the delusional subject out to be rational. This leads him to the conclusion that delusions therefore cannot be contentful states. Delusions are typically thought to be irrational beliefs, and yet (as we have considered) the attribution of irrational belief seems to be precluded by the three assumptions of rationality. If we are unable to assume the subject to be rational in one or more of the ways that are required for psychological explanation then it would seem that psychological explanation of delusional belief would be ruled out as a matter of principle. At this point one may be very concerned indeed about the prospects for an intentional, or psychological explanation of delusional belief.

Intentional / Psychological Explanation - We have already considered that attempting to offer a psychological explanation involves adopting the intentional stance towards the person whose behaviour we want to explain. The intentional stance involves attributing beliefs and desires to an agent in order to explain their behaviour. Beliefs are thought to play a fairly specific role in the production (and hence explanation) of behaviour. We have seen how they operate under three functionally specified rationality constraints: on belief formation; on inferential relations; and on practical rationality. Psychological states were divided into motivational and representational states, though I should also note that there are other varieties of psychological states that are hard to classify into either of these categories; wishful thinking, imagining, and emotional states, for example.

Daniel Dennett (1969) writes about a distinction between personal and sub-personal levels of explanation that may be relevant to the problem of how we are best to explain delusion. He considers that person level explanation appeals to states that are capable of being consciously experienced by a ra-

tional agent. Sub-personal explanation, on the other hand, appeals to states (and processes) that are not consciously accessible to the agent. At a first approximation, person level explanation seems to correspond to psychological or intentional level explanation. People would seem to be aware and able to report on what it is that they believe and desire. While it might be tempting to consider that the agent is authoritative on what it is that they believe and desire, there would seem to be circumstances in which the person may be mistaken, however. Someone who says that they desire to get married but do not get married despite an excellent opportunity either would not seem to know what it means to desire something, or they would seem to be wrong about what it is that they do in fact desire.

Person level states would also not seem to have to be conscious to the agent all the time. We still consider someone in a dreamless sleep to continue to believe what they believed when they were awake, so people do not stop believing the sun is hot when they stop being consciously aware of their belief. Most of us do not spend a great deal of time being consciously aware that one believes the sun is hot, yet it seems that we continue to believe it even when we are not consciously aware of that and thus there would indeed seem to be sub-conscious beliefs. Searle (1992) considers that mental states do not have to be consciously experienced to count as mental states. So beliefs and desires do not cease to count as mental, or psychological states of the agent when the agent is unaware of the state. Searle considers that the crucial feature of a mental state, however, is that it is possible for the agent to become aware of the state. Searle concludes that a state that is not capable of being consciously experienced by the agent cannot be considered to be a mental, or psychological state.

Sub-personal states and processes, however, are not required to be accessible to the subject's conscious awareness. Dennett considers two levels of sub-personal explanation; physical stance explanations, and design stance explanations. I shall now turn to these two other levels of explanation and I shall ultimately consider how they may be able to help with the psychological (person level) explanation of delusion.

Physical Stance / Neuro-Psychological Explanation - Dennett considers the lowest level stance to be the 'physical stance'. In order to adopt the physical stance towards a system we are required to make assumptions about the internal nature of the object and the laws of physics in order to arrive at a prediction as to how the object is going to behave. If we drop various objects off a tall building then we can make predictions about whether the object is likely to break by considering the object (as a certain kind of physical system that) will act in accordance with the laws of nature. Dennett considers that predictions and explanations that are obtained from adopting the physical stance have the highest degree of accuracy, but that the cost is that the stance usually requires considerable knowledge of the nature of the object, and the relevant laws of nature. The knowledge and computation involved in physical stance predictions of a persons behaviour makes the stance of limited utility to us in our daily lives when we are operating within real world time constraints with limited knowledge of the relevant aspects of the persons internal constitution and the relevant laws of nature.

One might consider that if we knew all the neuro-physiological facts about the person's brain states then one would either be able to predict the person's behavior (including the expression of the delusional utterance) with one hundred percent accuracy (in a determined world), or one would be able to say what the probability of various outcomes was (in an irreducibly indeterministic world). Neuro- psychologists study the brain abnormalities that have been found in some subjects with delusion; the nature of the structural and neuro-transmission problems in people with psychotic delusions, and the location of lesions in subjects with cerebral trauma. In practice, these neuro-psychological (physical stance) findings are of limited utility to us in attempting to explain delusions. We simply do not know enough about how brain states cause behavior, either in normal subjects or in delusional subjects.

Design Stance / Cognitive Psychological Explanation - Dennett also considers a higher level stance which he dubs the 'design stance'. The design stance requires us to make assumptions about the design of the object, and

to assume that the object will behave as it is designed to behave. An alarm clock is an example of a designed object. We can predict that if we depress the button just so, the alarm clock will make a noise loud enough to wake us at the time it is set for. We can make this prediction without knowing anything about the internal nature (or constitution) of the alarm clock, and without knowing how the internal pieces of machinery work (when considering how the laws of nature will operate on the parts). The design stance is a higher level stance to the physical stance in the sense that it assumes more and there is always the possibility of error arising from malfunction (where the object does not behave as it is designed to behave). In the case of malfunction the assumption of the design stance is not met, and thus the design stance would not be appropriate for predicting or explaining the behaviour of the object. In the case of malfunction there is little to be done but to revert to the lower level physical stance.

While the design stance has more likelihood of error than the physical stance (because it requires the assumption that the object will behave as it is designed to behave – which may turn out to be false), the design stance is more useful to us in our daily lives than the physical stance because it allows us to fudge through our limited knowledge of the internal constitution of the object and our limited knowledge of the relevant physical laws. While the design stance is clearly appropriate to artefacts that have been designed with a certain function in mind (such as alarm clocks), Dennett considers that it may also be appropriate to use the design stance (in a very loose sense of ‘design’) to predict and explain the behaviour of evolved systems. The function of hearts is to pump blood because that is what hearts have been ‘designed’ to do by the blind forces of natural selection. Design thus does not imply that an agent deliberately designed the object with that purpose in mind, it just implies that objects have a function (whether it is designed with that function in mind, or whether it is arrived at via mutation, inheritance, and differential fitness). We can appeal to function in design stance predictions and explanations by assuming that the object will behave in accordance with its design. Thus hearts have been designed (in this loose sense of design) to

pump blood, and we can make a number of predictions about the likely behaviour of a properly functioning heart which will serve us well except in the case of malfunction.

We have already considered that ‘rationality’ is a notion that may be conceptually analysed into parts, and from the design stance of cognitive psychological explanation one may consider that these parts are composed of special purpose cognitive mechanisms whose proper function results in the kinds of rationality we have considered. When we are looking to explain delusional belief it would seem to be worthwhile to consider the cognitive mechanisms that function to produce and maintain normal beliefs. There may be sub-personal processes of belief formation and maintenance on the cognitive / design level whose proper function results in the three kinds of rationality exhibited by normal subjects.

One concern with attempting to offer a cognitive neuro-psychological explanation of delusion is that psychological explanation may fall by the wayside, however. One might consider that a potential problem with psychological explanation, is the point that the ontology of intentional explanation (which involves intentional states such as belief and desire) is arrived at by conceptual analysis of the role that these mental state terms play in our folk-psychological vocabulary. It would seem to be an empirical matter whether these states are found to map on to cognitive and / or neurological structures, however. It may also be the case that from the person level it is illegitimate to consider there to be irrational beliefs because of the rationality constraints on the content of the beliefs that it is legitimate to attribute to the subject. Adopting the intentional stance may be illegitimate when the required rationality assumptions are not met in which case it would be more appropriate to defer to a lower level stance where rationality need not be assumed in order to explain delusions (as irrational beliefs). At this point one may be very concerned indeed about the prospects for a psychological explanation of delusional belief.

1.7 Cognitive neuro-psychology and the intentional explanation of delusional beliefs

It might be possible to explain delusions by postulating a certain kind of relatively specific breakdown in a model of the cognitive mechanisms involved in the belief formation processes of non-delusional subjects. If these mechanisms are what function to produce normal belief, then it would seem plausible to consider that a specific kind of malfunction in a specific kind of mechanism may be appealed to in order to explain delusional beliefs from the cognitive level. When we are looking at the malfunction of these cognitive mechanisms, then we would also need to consider the nature of the structural and / or neurotransmission abnormalities in the case of psychotic delusions, and the location of lesion sites in the case of cerebral injury. These physical level breakdowns are thought to result in the cognitive malfunction that in turn results in the subject endorsing an irrational belief. Thus neuro-psychology may be able to assist us with explaining what is happening in the persons brain that has led to the breakdown in the cognitive mechanism. Cognitive psychology may be able to assist us in explaining how the breakdown of the cognitive mechanism may result in a very limited breakdown in rationality, so that we can say that given that kind of breakdown in that kind of cognitive mechanism, delusions would seem to be inevitable, understandable, or perhaps even ‘rational’ responses. This would seem to involve modifying the usual conception of rationality that is typically employed in psychological explanation, however.

Empiricist accounts of delusion consider that we may be able to specify the nature of a localised breakdown in rationality from the sub-personal cognitive level. Cognitive psychology may be thought to be one application of the design stance, in the sense that it requires the assumption that there are different functional mechanisms and that these functional mechanisms behave according to their design in order to result in normal belief formation, normal inferential relations between beliefs, and normal practical rationality. It is because these cognitive mechanisms typically function as they do that

the folk-psychological ‘rationality’ assumption is of utility to us in our daily lives, allowing us to adopt the intentional stance towards a person with a high degree of success. By considering the different aspects of ‘rationality’ derived from our conceptual analysis of the role of belief in our psychological predictions and explanations, this may pave the way for us to consider what cognitive psychology can show us about the functional mechanisms that typically result in the normal production and retention of belief. The notion is that there may be a malfunction on the intentional, cognitive, and neurological levels. Once we specify the precise nature of the malfunction, however, then we may still be able to adopt a modified version of the intentional stance to explain delusion from the level of folk-psychology.

This may plausibly be a way around some of the problems that have resulted from a heavy reliance on conceptual analysis which seemed to rule out an explanation of delusions as irrational beliefs solely as a matter of stipulated definition on the basis of what beliefs are assumed to be in our everyday folk conception of them. Psychological explanation would fairly often seem to be inadequate with respect to explaining abnormal phenomena. It would seem that we may be faced with a choice as to whether we defer to the cognitive neuro-sciences for an explanation of delusion or whether we consider that it may be more appropriate to revise folk- psychological conceptions in light of some of the empirical findings pertaining to subjects with delusions.

The role of philosophy in such a project would be to attempt to integrate the findings from the cognitive-neurosciences with a view to incorporating these findings into a model of belief where delusions would be the inevitable, or understandable result of certain limited breakdowns in this model. In this way it might be possible that the states and processes that are appealed to in cognitive neuropsychological explanation may assist us in seeing what revisions we need to make to the assumptions of folk-psychology in order to arrive at a psychological explanation of delusional belief. It is important to bear in mind that a psychological explanation of delusional belief must appeal to person level states in order to count as a psychological explanation. While we may predict and explain peoples behaviour by recourse to sub-

conscious beliefs and desires at times Searle maintained that we only consider these to be psychological states because they are capable of being consciously experienced.

Ghaemi (2004, p. 53) writes that

Havens also observed in his mentor, the famed psychoanalyst Elvin Semrad, another element, a radical empathy, which tends to modify psychosis. His students were often amazed how paranoid psychotic patients appeared to relate to Semrad, while they were unapproachable to most others... In other words, Semrad never met a patient with whom he could not successfully adopt the intentional stance.

If Semrad was indeed able to adopt the intentional stance towards his delusional patients then it would be useful if we were able to offer an account of the alterations that Semrad needed to make to usual folk-psychology that enabled him to do this. Sass (2004 p. 72) recommends that

In my opinion, the work of many analytic philosophers interested in psychopathology would be enriched if they spent more time trying to discover and imagine what it might be like to experience certain kinds of abnormal psychiatric conditions, and also speculating about what implications such experiential modalities might have for action and verbal expression.

In the next chapter I shall turn to considering a cognitive model of recognition and considering how a sub-personal breakdown in the model may lead to the production of a person level anomalous experience for the delusional subject. If we can appeal to a person-level anomalous experience in the production of delusion then it would seem that there would be prospects for a psychological explanation of delusional belief. In order to grasp the nature of this person level experience, however, we may need to consider the role of the sub-personal processes which produce the person-level processes in the delusional subject. I think that it is worth considering the cognitive-neurophysiological findings before being led to the conclusion that delusions

cannot be contentful states and cannot be given a psychological explanation which seems to me to amount to no less than ruling out psychological explanations of delusions on merely conceptual grounds.

Chapter 2

Cognitive neuropsychology and the role of anomalous experience

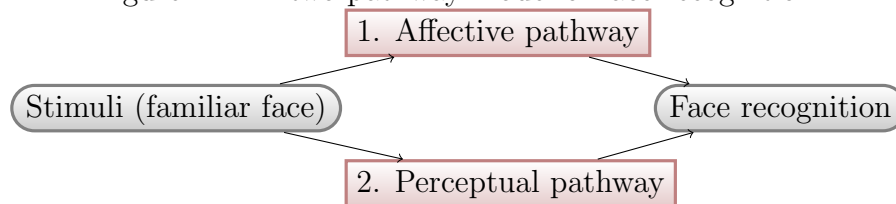
2.1 Stone and Young's cognitive model of face recognition

The Capgras and Frégoli delusions are thought to be different kinds of delusions of misidentification. In the Capgras delusion the person seems to be misidentifying someone they were previously close to such as a husband, wife, or child by maintaining that they have been replaced by an impostor, robot, or clone. In the Frégoli delusion the subject would seem to be misidentifying strangers for people who are familiar to them when they maintain that they are being followed by people who are known to them but that they can't say who they are because they are disguised as strangers. It would seem plausible to consider that both these kinds of delusions of misidentification may arise from a difficulty in processing perceptual information that would normally enable them to recognize familiar people.

Ellis and Young (1990) have outlined a cognitive model of face recognition

that attempts to describe something of the process by which normal subjects are able to recognize faces. I shall offer a simplified version of their model for the purpose of drawing out what is relevant to an explanation of delusion. Ellis and Young consider that face recognition requires the proper functioning of two cognitive pathways (see Figure 2.1).

Figure 2.1: A two pathway model of face recognition.



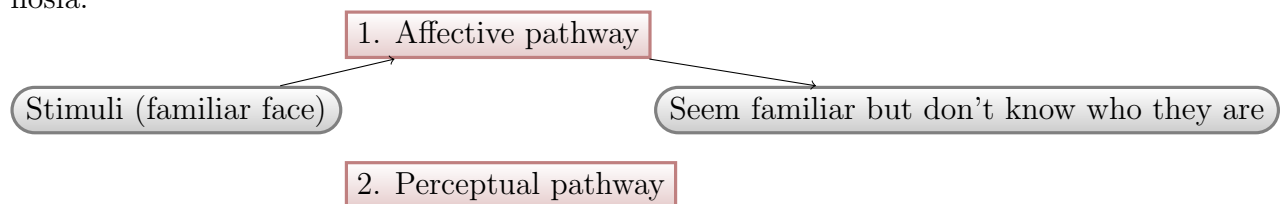
Perceptual pathway - When normal subjects are presented with a picture of a face that is familiar to them they are able to report who that person is by providing a name and some biographical details. The function of the perceptual pathway is thought to be to match the current perceptual information of the face to information stored in memory so that the person is able to recall and verbalize information pertaining to the face of the person they have been shown, such as biographical information, and the person's name. The perceptual pathway is thus considered to be what enables us to overtly recognize faces.

Affective pathway - When normal subjects are presented with a picture of a face that is familiar to them they have been found to display a heightened skin galvanization response (SGR). This SGR is a measure of autonomic or physiological arousal, and it has been interpreted as being a measure of affective response, or 'covert recognition'. Ellis and Young, (1990) do not explicitly consider the function of the affective pathway (though I shall consider this in Chapter 4.).

The model was initially developed because it was found that subjects with the neurological condition of prosopagnosia were unable to recognize faces that were familiar to them in the sense of being able to provide a name and biographical details. Subjects with prosopagnosia were able to say that the

face seemed familiar to them, however, and they were also found to display a heightened SGR comparable to the response exhibited by normal subjects. Ellis and Young consider that we might be able to understand prosopagnosia as something that occurs when there is a certain kind of breakdown in the normal process of face recognition. This is just to say that the condition may be explained by appealing to a certain kind of breakdown in their model of face recognition. They consider that prosopagnosia is the result of a breakdown in the perceptual pathway and that this breakdown has the result that they are unable to retrieve the name and biographical information pertaining to the face of the person they have been shown. They do display the usual SGR, however, and they are able to say they the face seems familiar, which shows that the affective pathway continues to function normally (see Figure 2.2).

Figure 2.2: Application of the two pathway model for explaining prosopagnosia.

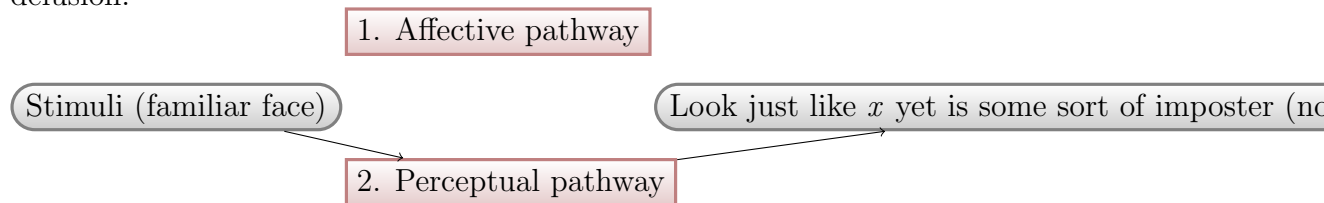


This model thus seems to handle the normal process of identification and the findings pertaining to subjects with prosopagnosia quite well. If this two pathway model provides a fairly accurate account of the process of face recognition, then it would seem profitable to consider whether the Capgras and Frégoli delusions may be able to be similarly explained by appealing to different kinds of breakdowns in the model of face recognition. Ellis and Young, and Stone and Young (1997) attempted to do just that with respect to offering an account of the Capgras delusion.

Subjects with the Capgras delusion often acknowledge that the alleged impostor looks remarkably like the person whom they have replaced. They are able to report the name of the person that the impostor looks like and they can also provide biographical details of that original person, which subjects

with prosopagnosia are unable to do. They thus seem to recognize them on the perceptual level unlike subjects with prosopagnosia. On the affective level, however, it has been found that they do not show the normal heightened SGR to familiar faces (Bruyer, 1991; Young and de Haan, 1992 and Young, 1994 in Stone and Young, 1997 p. 337). It thus seems that they have a breakdown in the affective pathway, though the perceptual pathway remains intact (see Figure 2.3). Ellis and Young consider that the Capgras delusion thus arises from a cognitive deficiency that is a ‘mirror image’ of prosopagnosia.

Figure 2.3: Application of the two pathway model for explaining the Capgras delusion.

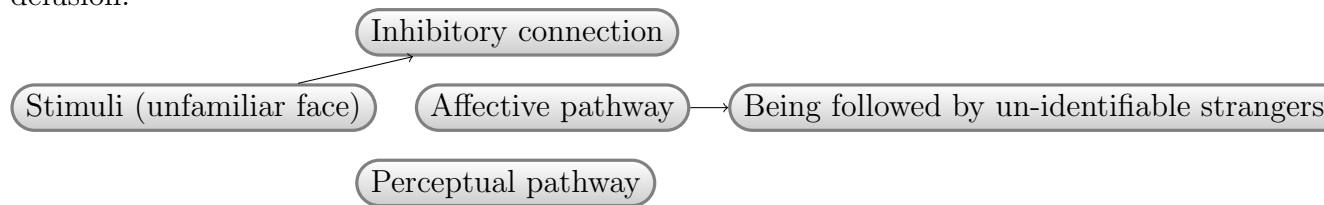


The cognitive model of face recognition may also have prospects for providing a similar sort of explanation of the Frégoli delusion. While this has not been tested, it might be the case that subjects with the Frégoli delusion display an abnormally heightened SGR in response to strangers. If this was found to be the case then it may be that strangers would seem to be known to them, even though the person cannot identify them on the perceptual level, and even though they are not in fact known to the delusional subject.

To get an abnormal production of a SGR response where one *should not* have been generated may require a slightly different explanation from a lack of response where one should have been generated, as in the Capgras delusion. In the case of the Capgras delusion the notion is that on the physical level there is some kind of lesion or cerebral trauma that is preventing the sending of excitatory signals. Thus the response that should have occurred does not occur because the ‘message’ does not get through the affective pathway. In the case of the Frégoli delusion it may be possible that some kind of neurological abnormality produces excitatory signals where normally none would

have been generated similarly to how neurological abnormality can lead to seizure activity. Another possibility would be that there is a breakdown in another pathway that would typically send inhibitory signals to prevent a SGR occurring in response to faces who are unfamiliar (see 2.4).

Figure 2.4: Application of the two pathway model for explaining the Frégoli delusion.



If either of these suggestions are plausible then we can see how there might be an abnormally heightened SGR. While this would seem to be rather speculative and the positing of inhibitory connections may seem rather convoluted in particular, if it is indeed the case that subjects with the Frégoli delusion have an abnormally heightened SGR to strangers then the model would have prospects for explaining the Frégoli delusion. The plausibility of this approach to explaining the Frégoli delusion would be greatly assisted by finding that subjects with the Frégoli delusion do in fact have a heightened SGR to strangers.

2.2 Neuro-physiology and production of SGR

It might be natural to think that the two pathway cognitive model would be realized or implemented on two different neural pathways in the brain, and indeed Stone and Young suggest this is the case by identifying the pathways with the dorsal and ventral routes which have been shown to play a role in face processing. Breen et al., (2000) have critiqued this notion, however. Breen et al. consider that there is no evidence that the ventral route is capable of the kind of processing that the cognitive model assigns to it. They also maintain, however, that both cognitive pathways could be realized on a branching dorsal pathway and thus their criticism does not disrupt the

cognitive model of face recognition, so much as showing that there are issues as to how it is realized on the neural wetware of the brain.

If we accept that an account of face recognition broadly along the lines of that proposed by Ellis and Young, or Breen et al. is correct, and that this model is implemented on neural pathways in the brain (whether on two separate pathways or on a branching dorsal pathway) then cerebral trauma could plausibly lead to various breakdowns in the pathway/s and thus various breakdowns in Stone and Young's cognitive model of face recognition. While there has been some investigation into the location of cerebral injury the matter is complicated by: relatively coarse grained methods of neuro-imaging (and the expense involved in that), cerebral plasticity, the point that even relatively localised cerebral trauma is often not terribly specific, and so forth. Much more research is needed to clarify the precise nature of the neuro-physiological deficits that are relevant to the production of various kinds of delusion. What has been found, however, is that delusions tend to result from trauma to the right hemisphere and people with comparable trauma to the left hemisphere do not tend to endorse comparable delusions.

It is also a point that psychotic subjects with the Capgras delusion often develop their delusions in a way that seems to run contrary to Stone and Young's model. Feinburg (2001 p. 35-36) describes such a case where a woman was able to regard an old photograph of her husband to be her husband (which she should not have been able to do by Stone and Young's account) even though she considered the present man to be an impostor. It would seem that when the Capgras delusion arises within the context of a psychotic disorder an alternative explanation may be required.

One man with cerebral trauma reputedly gave expression to the Capgras delusion when he saw his father, yet he did not maintain that he was an impostor when he spoke with him on the phone. This is the finding that prompted Stone and Young to consider that the Capgras delusion results in problems with processing visual information relevant to the perception of faces. There has been some interest expressed in whether the Capgras delusion might result from a similar breakdown in another sensory modality:

might there be a comparable phenomena with respect to the processing of auditory information, for example? I have found several cases of the Capgras delusion occurring in the auditory modality for both blind and sighted subjects (Hermanowicz, 2002; Rojo et al., 1991; Reid et al., 1993).

It has been found that sighted subjects exhibit a heightened SGR to voices who are familiar (Lewis et al., 2001). Lewis et al. reported a case of a sighted person with schizoaffective disorder (a type of psychotic disorder) who developed the Capgras delusion for her sons voice. She was found to have reduced SGR to voices who were familiar compared with non-delusional controls who showed a heightened SGR to familiar voices. It would seem plausible to consider that there may be a comparable two pathway model of recognition of familiar voices that occurs within the auditory modality. Presumably a two pathway model for the processing of auditory information would be realized on a different neural pathway as some subjects may have a delusion occurring in response to an abnormality in one modality while the other modality continues to function normally. It would be interesting to know whether Feinberg's case had a lack of SGR to her husband's voice because if her delusion arose from an abnormality in the auditory modality then we would expect her to be able to recognize her husband as her husband in a photograph. The model thus far may be able to explain those kinds of cases.

This two pathway cognitive model of face recognition would thus seem to have fairly good prospects for extension to other modalities as considered in cases where people develop the Capgras delusion in response to familiar voices. Two pathway models of recognition may also have good prospects for being extended to explain delusions that result from stimuli other than familiar faces. Feinberg (2001 p. 37) describes a case of reduplicative paramnesia where a man maintained that

More than 300 items, including Wilkinson Sword razor blades, a Black & Decker electric drill, and assorted mens underwear, had been removed from his home and replaced by nearly identical doubles... While the substituted items bore great resemblance

to the originals, the patient noted that some of the substituted items were of inferior quality to the originals.

If this two pathway cognitive model is accepted as a model of face recognition then it may be the case that there is a similar process (of two pathways) being involved in the recognition of objects as well. This subject would seem to have something comparable to the Capgras delusion, but in this case for objects rather than for faces.

One lady was even reported to have developed a delusion of misidentification saying that her canary had been replaced by an impostor (Rosler et al., 2001 p. 429). It may seem that this is a distinct process from the Capgras delusion as it occurs in the perception of faces because someone who has the Capgras delusion for a person might not have reduplicative paramnesia for any objects, and vice versa. It soon becomes obvious that if we simply posit an independent recognition mechanism with a different neural instantiation to account for every different object and modality in the different kinds of delusions of misidentification then such an explanation may come too cheap. What lent plausibility to the two pathway model of face recognition was the independent evidence in support of the notion that the dorsal and ventral pathways were involved in the visual perception of faces. There was also further support with the finding of subjects with prosopagnosia because here we have a case of the other pathway (the perceptual pathway) breaking down, and thus there is independent evidence for the positing of two independent pathways. Without such independent evidence the positing of a two pathway mechanism and the positing of a neural pathway seems to be somewhat ad hoc.

While Stone and Young, (1997 p. 346-347) maintain ‘The person who forms the Capgras delusion suffers from a perceptual deficit that leads to familiar faces losing their normal personal affective significance’ and that ‘the person thus suffers a specific form of anomalous perceptual experience’ it would still seem to be far from obvious how an abnormal SGR results in delusion. Normal subjects are not even aware of producing a heightened SGR to familiar as opposed to unfamiliar faces. So it may be hard to see how the lack of

a response that people are not normally aware of having that could result in a delusional belief. While it does not necessarily follow from the point that they have a lack of experience of SGR that they have an experience of a lack of SGR, it is thought that the discrepancy between the response that should have occurred and the response that does occur leads to a person level conscious anomalous experience.

A way around this problem of inventing a new two pathway mechanism to account for each kind of delusion of misidentification might be to consider that what is relevant to the development of delusions of misidentification is the emotional (or affective) significance that the object of the delusion has to the delusional subject. Perhaps it is the case that it is the lack of SGR to an object that is significant (which is to say to an object that would have produced the strongest SGR prior to the cerebral trauma) that determines the object of the delusion. Perhaps the relevant mechanism isn't necessarily to do with the perception of *faces*; rather it is more to do with the perception of *objects of significance* whether they be people, canaries, or other kinds of objects. This seems to be supported by Rosler et al's suggestion that

Usually the misidentification involves a person with whom the patient has an "intense affective sentiment." Our patient had no close person in her own environment who fulfilled this role. Instead, her canary had become her closest living companion... The lack of personal contact in her social environment may have identified her pet canary as the focus for her delusion. (Rosler et al., 2001 p. 429).

There may be a similar type of explanation for Feinberg's case of reduplicative paramnesia.

It would assist us to know more about the SGR responses exhibited by normal subjects in response to various stimuli, and more in particular, to stimuli they report feeling particularly attached to (and have strong SGR responses to) as opposed to objects that they aren't as attached to despite those objects being familiar to them as well.

It would seem plausible to consider that prior to head injury the person with the Capgras delusion would have produced the strongest SGR to people who were close to them such as a wife, husband, or child, though it should be said that this has not been tested. If this were so then post head trauma the difference between the response that should have occurred and the response that does occur would thus be the greatest for their loved ones. This is thought to go some of the way towards explaining why it is that the Capgras delusion is typically focused on people who were close to them rather than being focused on mere acquaintances. This would seem to be an alternative explanation to the psychodynamic accounts that were historically offered where the reason why the delusion tended to be focused on people who were close was because the delusional subject was unsuccessful in repressing hatred for the object of the delusion and thus needed to repress knowledge of who the person was in order to reconcile the conflict.

The anomalous experience is important with respect to the prospects for a psychological explanation of delusion as without an anomalous experience the cognitive model describes purely sub-personal processes and states. The normal functioning, and indeed the breakdown of the cognitive model and the resultant SGR are not person level states and thus the model does not describe psychological states or processes in the sense that Searle (1992) considered that psychological states and processes must be capable of being consciously experienced by the subject in order to count as psychological states / processes. Stone and Young maintain that a breakdown in this model produces an abnormal SGR, and the abnormal SGR leads to a consciously experienced state: a 'specific form of anomalous perceptual experience'. It is because this state is consciously experienced by the subject that the state would count as a psychological or person level state. If we can explain delusion by recourse to a prior psychological state – that of an anomalous experience – then Stone and Young's model would seem relevant to the psychological explanation of delusional belief.

2.3 The role of anomalous experience

The psychological theorist Brendan Maher, (1999; 2003) similarly considers that a neurophysiological anomaly results in the production of an anomalous experience for the delusional subject. Though Maher does not consider Stone and Young's cognitive model of face recognition or the role of SGR in the production of anomalous experience, what he does have to say about neurophysiological anomaly and anomalous experience is consistent with Stone and Young's line. Maher considers that an anomalous experience of a certain intensity and duration will result in a delusional belief. He considers that anyone who were to have such an experience would develop comparable delusional beliefs.

Maher considers that 'the origins of anomalous experience may lie in a broad band of neuropsychological anomalies. These include but are not confined to...' and he goes on to consider 6 kinds of neuropsychological anomaly (Maher, 1999 p. 551):

1. Endogenous neural activation of the feeling of significance normally triggered by pre-conscious recognition of changes in a familiar environment.
2. Unrecognized defects in the sensory system, such as undiagnosed hearing loss, or the endogenous activation or inhibition of the central neural representations of sensory input.
3. Temporary alterations in the intensity and vividness of sensory input, as in some forms of drug intoxication.
4. Neurologically based difficulties in the focusing of attention with consequent difficulty in discriminating between situationally relevant and irrelevant elements of the environment.
5. Experienced discrepancies between the willed intent of a response and the actual form of the response.

6. Impairment in the monitoring and calculation of recurring sequential probabilities in environmental events that is necessary to anticipate and respond effectively to later elements in the sequence.

While Maher is primarily interested in offering an account of schizophrenic delusions rather than delusions arising from cerebral trauma, he does however state that:

[D]elusional interpretations of circumscribed anomalies of experience arising from psychopathology are not confined to schizophrenia. . . . [T]he model of delusion formation . . . posits that the basic origin lies in the anomalous experience, regardless of how that anomaly arose (Maher 1999, p.566).

Maher is thus attempting to offer an account of delusions in general. In what follows I shall focus on how Maher's line would apply to an explanation of the Capgras delusion.

Maher considers that a neuropsychological anomaly of the kind listed in table 1.2 produces an anomalous *experience* for the delusional subject. He considers anomalous experiences to be 'primary' in the sense that

They have the same quality of irreducible directness as do such experiences as sensory experience of color, the feeling of physical pain, the experience of sound, and other sensations. Unlike these experiences, they cannot readily be attributed to identifiable external stimuli or internal somatic structures. Being primary, they do not arise as the end result of prior rational analysis, and cannot be altered by rational analysis. The qualities of primary experiences are beyond the reach of argument (Maher, 1999 pp.552-553).

While Jaspers (1959) maintained that delusions could not be explained by recourse to the subject's prior perceptions, experiences, and beliefs, and thus

he considered that delusions are beyond the reach of psychological explanation, Maher considers that delusions can be explained by recourse to the subject's prior anomalous experiences. If Maher is right in maintaining that delusions can be explained by recourse to the subject's prior anomalous experiences then it would seem to be the case that psychological explanation would have a prior psychological state (that of anomalous experience) that could be appealed to in order to explain delusional belief from the psychological level.

Maher considers the anomalous experience 'may be a feeling that one has become *aware* that something *significant* has happened, and that the feeling is primary and intense enough to be *convincing* (Maher, 1999 p. 552)'. I shall focus on the first kind of anomalous experience which he enumerates as this would seem to be the most relevant for an explanation of the Capgras delusion. The first anomalous experience consists in 'feelings of non-recognition: something is different'. He considers that

The point of this kind of experience is that we begin with a "feeling" that something is different and then we try to find out what it is that has changed. The chronology of the experience does not begin with the conscious identification of the changed element. It begins with a *vague general feeling* that prompts us to look for a changed element. . . This feeling is, most probably, stimulated by a neuropsychological process arising when some stored icon of the expected usual appearance of the person or object is activated by the encounter but mismatches the current actual input of that appearance. . . (Maher, 1999 p. 554).

Maher thus considers that the delusional subject has an anomalous experience and that delusions are attempts at *explanations* for the anomalous experience. I shall come back to the point that some theorists consider delusions to be attempts at explanations in Chapter 3. I shall contrast this with the notion that the content of the belief may be given by the content of the anomalous experience directly without a step of inference. Maher considers the anomalous experience to be a '*vague general feeling*' and thus there

needs to be a step of inference between the content of the general experience and the content of the delusional belief that the subject arrives at in the attempt to explain their anomalous experience. Maher considers that in this particular case there is a mismatch between the memory of the person and the present percept of the person, which seems similar to Campbell's second interpretation of the Capgras delusion where 'this [perceived] woman is not that [remembered] woman'. Maher continues:

We can summarise the essence of these examples [of different kinds of anomalous experiences] as indicating that discrepancies between expected and perceived input are very often monitored at a level below the threshold of conscious experience, and when detected at that level give rise to primary feelings. These feelings have in them an element of discomfort and uncertainty that prompts a conscious search for the discrepancy' Maher, 1999 p. 556)

The notion is that a sub-personal discrepancy is responsible for the production of an anomalous experience. This seems similar to Stone and Young's suggestion of a sub-personal discrepancy occurring in the processing of visual information relevant to the perception of faces, and indeed we can think of Stone and Young's model as a more detailed specification of the sub-personal breakdown that Maher considers to be implicated in various kinds of delusions.

Maier considers that when the anomalous experience is intense and prolonged, the person is led to develop a delusion in response to their anomalous experience. While normal subjects may have similar kinds of experiences in their daily lives they are not compelled to explain their experiences in the way that a person who has more intense and prolonged experiences is. He considers that when the experience is less intense then people may be able to come up with alternative explanations, such as that the person has had a hair cut or is wearing a different kind of tie. When the experiences are intense and prolonged, however, then such attempts at explanation fail to terminate the anomalous experience for the subject. The subject is thus led

to adopt a delusional explanation for their anomalous experience. Maher considers that delusion is the inevitable result of such an attempt to explain or make sense of such an intense and prolonged anomalous experience. He concurs with Reed's claim that

[G]iven the necessary information, the observer can empathize with the subject; if he himself were to have such an unusual experience he would express beliefs about it which would be just as unusual as those of the subject... They can occur in anybody who experiences disturbing phenomena, while retaining the ability to think clearly enough to be able to devise explanations of those phenomena (in Maher, 1999 p. 551).

Maheer thus specifies the content of the anomalous experience that is relevant to the production of the Capgras delusion as 'feelings of non-recognition: something is different' in response to the stimuli of familiar faces. What may still be unclear is how or why intensity and duration of an experience could be the crucial difference that determines that a subject must arrive at a delusional explanation for their experience.

2.4 From one to two factors in the explanation of delusion

Maheer maintained that an anomalous experience of a certain (unspecified) intensity and duration is both necessary and sufficient for delusion. There may be two different ways in which we could interpret his claim. The first way might be to consider that the anomalous experience is both necessary and sufficient to determine whether a subject will develop a delusion or not. The second way we could interpret the claim would be to consider that the kind of anomalous experience determines the kind of delusional explanation that the subject will adopt.

While the causes of depression may be hard to pinpoint, it does seem clear that people with clinical depression tend to benefit from psychotropic medi-

cations. What people have surmised from this is that in depression something has gone wrong with levels of neurotransmitter in the brain. The medication is thought to assist because it helps rectify the problem. If depression is left untreated, however, then some people can deteriorate over time, becoming more and more depressed and their SGR become progressively dulled, or muted. Subjects begin with making claims that they don't feel real, or that they feel disembodied, and if they continue to deteriorate they may eventually reach the conclusion that they are dead. The Cotard delusion is now even rarer than it once was as modern advances in psychotropic medications now largely prevent people deteriorating to that level.

In other cases people develop the Cotard delusion in response to cerebral trauma. They may have been involved in an accident that has resulted in damage to parts of their brain, or a blood vessel may have burst which may result in a similar kind of damage. People who develop the Cotard delusion in response to cerebral trauma may suffer from other conditions, some even suffer from other kinds of delusion as well. It has been found that these people also exhibit a muted SGR.

So, subjects with the Cotard delusion have been found to exhibit a comparable loss of SGR similarly to subjects with the Capgras delusion. If the anomalous experience is determined by the difference between the SGR that should have occurred and the SGR that is generated then it would seem plausible to consider that Cotard and Capgras subjects have the same kind of anomalous experience. If the anomalous experience of subjects with the Cotard delusion is the same as the anomalous experience of subjects with the Capgras delusion then it would seem that the kind of anomalous experience is not sufficient to determine that the subject develop one of these delusions as opposed to the other.

The person with the Capgras delusion only has the loss of normal SGR when presented with the stimuli of a familiar face however. The person with the Cotard delusion would seem to have a more global loss of SGR in response to a greater variety of stimuli. Some theorists have thus been led to consider that the anomalous experience of subjects with the Capgras as opposed to

Cotard delusion must be different. A problem with this line of defense is that the Cotard and Capgras subjects would appear to have the same loss of normal SGR when they are presented with the stimuli of familiar faces. While the person with the Cotard delusion does have a more global loss of affective response this does not seem to entail that their experience when they are looking at familiar faces is any different from the person with the Capgras delusion. It may be puzzling why the person with the Cotard delusion does not arrive at the Capgras delusion in addition to having other bizarre beliefs related to their loss of affective response to other stimuli. Indeed, the person with the Cotard delusion would also seem to have a loss of affective response to familiar objects and so it may be puzzling why they do not have delusions comparable to the people with reduplicative paramnesia who maintain that their personal belongings have been replaced by duplicates.

We could of course maintain that SGR does not determine the nature of the anomalous experience. We could maintain that there are different mechanisms that are responsible for the production of the appropriate SGR in the Cotard delusion compared with the delusions of misidentification that we have considered. If different mechanisms are involved then the anomalous experience of subjects with the Capgras as opposed to Cotard delusions could thus be quite different even though there is a comparable loss of SGR. The problem then becomes to specify in more detail the nature of the difference in the experience of subjects with these different kinds of delusions. The best way to go about this may well involve specifying in more detail the nature of the mechanisms that are failing differently in these different cases. I shall return to this in Chapter 4.

With respect to the weaker interpretation of Maher's claim – that the intensity and duration of the anomalous experience determines whether a subject will develop a delusion or not we might consider that there may be alternative hypotheses that the delusional subject could also adopt as an explanation for their anomalous experience. Why is it that subjects with the Capgras delusion maintain that their wife has been replaced by an impostor as opposed to the hypothesis that something has gone wrong with their brain / affective

response system? It would seem that either hypothesis could result from the kinds of anomalous experience that we have looked at thus far and so the presence of an anomalous experience would not seem to be enough to determine that the subject must develop a delusion in response to it. This is problematic for the model in which anomalous experience is both necessary and sufficient for the production of delusion as it would seem that a subject with the anomalous experience that is relevant for the development of the Capgras delusion may or may not develop a delusion as there are two different hypotheses that could be adopted and only one of these would be considered to be delusional. These considerations seem to put pressure on Maher's account of delusion and more must be said about the relationship between certain kinds of anomalous experiences and certain kinds of delusions for us to see how delusion is an inevitable response to anomalous experience.

Maher considers both the role of neuro-physiological deficit, and the resultant anomalous experience in the production of delusion. His account of delusion has been considered to be a one-factor model in the sense that he attempts to offer a psychological explanation of delusion that relies on a single psychological factor – that of an anomalous experience. The neurophysiological deficit is not a psychological factor so Maher thus does not offer a psychological explanation of the anomalous experience. The anomalous experience is thought to be a psychological state, however, and it is in virtue of this that Maher is considered to offer a one factor psychological explanation of delusional belief.

We have already considered that there may be problems with Maher's thesis that an anomalous experience is both necessary and sufficient for delusion. Two-factor theorists depart from Maher by considering that while an anomalous experience would seem to be the first factor in a psychological explanation of delusion, an anomalous experience would not seem to be sufficient to determine that the subject develops a delusion in response. Two Factor theorists consider that delusions would not seem to be 'normal' or 'rational' responses - despite the nature of the delusional subject's experience. Davies et al., (2002 pp. 136-137) present a battery of eight different

types of delusion and they suggest that a prospective account should be assessed for adequacy with respect to how well it can explain each of these types. They consider that the anomalous experience that is relevant to each of these kinds of delusion is one that is experienced by both delusional and non-delusional subjects. They thus consider that while an anomalous experience may be necessary for delusion, it cannot be sufficient. As such they consider that Maher's account of the role of anomalous experience needs to be supplemented by a second factor. It is this second factor that is supposed to determine whether a subject will develop a delusion in the face of an anomalous experience.

Empirical models of delusion are thought to be 'bottom-up' as they attempt to explain delusions by recourse to sub-personal neurological or cognitive states and the person level anomalous experiences of subjects. This can be contrasted with the 'top-down' rationalist or analytical treatment of delusions offered by Jaspers and Campbell who were left concluding that one cannot offer a psychological explanation of delusion. Davies et al., distinguish between two types of empiricist accounts. The first is the one-factor style account offered by Maher where delusions are considered to be inevitable responses to certain kinds of anomalous experiences. The second type of empiricist account is the two-factor accounts of theorists who maintain that a second factor is required in order to determine that a person develops a delusion in response to an anomalous experience. I shall now turn to considering four attempts to enumerate the nature of the second factor in the explanation of delusions.

Chapter 3

The role of irrationality in the production of delusion

3.1 Cognitive deficit / bias

In Chapter One we considered Jaspers' (1959) thesis that primary delusions are not able to be explained from the psychological level. Campbell (2001) similarly concluded that delusions were intractable from the psychological level. His line of reasoning was that the rationality constraints on the role of belief rule out our being able to attribute a consistent content to delusional utterances. One of the concerns seems to be that if delusions are irrational phenomena then it is hard to see how we can offer a (rational) explanation of them.

In Chapter Two we considered how a breakdown in sub-personal mechanisms and a resultant abnormal SGR might produce an anomalous experience for the delusional subject. Maher's response to Jaspers' thesis that primary delusions cannot be explained from the psychological level was to counter that anyone would develop a delusion in response to the intense and recurrent anomalous experiences that are encountered by delusional subjects. He thus considered that delusional subjects exhibit rationality that is comparable to the rationality exhibited by non-delusional subjects. Maher believed that all

delusions could be explained from the psychological level by appealing to a prior person-level state of an anomalous experience.

Near the end of Chapter Two we considered that an anomalous experience (of the kind that Maher considered) would not seem to be sufficient for the development of delusion. Why doesn't the subject simply accept the explanation that they have suffered cerebral trauma which has meant that something is going wrong with their brain / affective responses? Two-factor theorists countered Maher's suggestion by saying that delusions would not seem to be normal or 'rational' responses despite the nature of their anomalous experience.

Before I turn to some of the accounts that have been offered of the nature of the delusional subject's irrationality I want to reiterate that in attempting to specify the nature of the delusional subjects breach in rationality we have to say something more than that they do not live up to the ideal of rationality. This is for the simple reason that we all fall short of the ideal of rationality. People without delusions are prone to a variety of cognitive biases, heuristics, and logical errors. We have also considered that non-delusional subjects may discover contradictory beliefs when they follow through logical entailments of pre-existing beliefs for the first time. What we seem to need is an account of how people with delusions reason differently from non-delusional people in order to explain why some people are led to delusion in the face of certain kinds of anomalous experiences while others are not.

While this would seem to be the case, on the other hand it would also seem to be the case that it is inadequate to posit a complete and global break in rationality. Some subjects exhibit monothematic and circumscribed delusions and thus they seem to exhibit rationality that is comparable to normal subjects outside the limited context of their delusion. We cannot maintain that they have forsaken reason completely as if this were the case we would expect them to have more pervasive and global abnormalities in their other utterances and in their behavior. The challenge for two-factor accounts of delusion is to offer an account of the nature of the second factor that is pervasive enough to result in a person endorsing a delusional belief in the face

of an anomalous experience, yet specific enough to allow that they exhibit rationality comparably to non-delusional subjects outside the context of their delusion.

Stone and Young (1997) consider that it may be profitable to distinguish between a deficit in rationality, and a bias in rationality. They consider that a deficit in rationality would result in a complete breakdown, and as this is observed not to be the case they concur with Maher that the delusional subject does not have a deficit in rationality. They then go on to consider the notion of a cognitive bias. They maintain that while a deficit would seem to imply a complete breakdown, a bias may result in reasoning processes that are more along the lines of a variation or distortion on the reasoning processes of non-delusional subjects. The notion is that if we can specify the nature of a bias in rationality, then we may be able to explain delusions as an inevitable (hence predictable and understandable) result of the subject having such a bias.

The bias / deficit distinction might not entail that delusions are understandable on the one hand and not understandable on the other. In Chapter One we considered how from the psychological level there would seem to be a structure to rationality in the sense that rationality is a tripartite notion. There would seem to be rationality constraints operating on the process of belief formation, the process of inferential relations between beliefs, and the process of beliefs and desires producing understandable (predictable) behavior. It would seem possible in principle that there could be a complete break (a deficit) in one of these aspects to rationality while the others could remain intact. Positing a complete break in any of these aspects of rationality would still seem to be too much of a deficit, however. People with monothematic and circumscribed delusions seem to exhibit belief formation, inferential relations, and practical rationality that is comparable to non-delusional subjects in other contexts, and thus it would be inadequate to posit a complete break or deficit in any of these aspects.

It would seem that if the delusional subject does in fact have problems with rationality at any (or all) of the above mentioned places that the problem

would seem to be more appropriately thought of as a bias from the psychological level. In Chapter One we considered three different levels of explanation, however. It might be plausible to consider that a bias on one level of explanation (psychological) might be explained by recourse to a deficit (or complete break) in a cognitive mechanism (on the cognitive / design level) and even more plausibly by the positing of a deficit on the neurological (physical) level when people have delusions that arise in response to localized cerebral injury. Whether the breakdown in rationality is considered to be a bias or a deficit would seem to have little consequence so long as we can specify the nature of the break in a way that is specific enough to produce a single delusional belief without entailing that they will endorse many others as well. If we can specify the nature of the deficit / bias then it would seem that delusions would be understandable (or inevitable) responses given the precise nature of the deficit / bias in rationality. I shall now turn to considering some of the cognitive biases that have been suggested by two factor theorists.

3.2 Attribution bias

If there is a step of inference between the content of the anomalous experience and the content of the delusional belief then it might be the case that the delusional error could be a result of faulty inference. While Maher considers the step of inference to be comparable to the inferences of non-delusional subjects, other theorists have attempted to describe a bias which makes it more likely that the delusional hypothesis occur to them over non-delusional alternatives. An attribution bias has been appealed to in the attempt to explain why it is that the delusional hypothesis occurs to the delusional subject in the first place. It thus seems to be a bias operating on the process of belief formation. Subjects with the Cotard delusion have been found to have a loss of the normal SGR to familiar faces that is comparable to subjects with the Capgras delusion. Instead of maintaining that someone has been replaced by an impostor, however, subjects with the Cotard delusion typically maintain that they are dead. Young (1988 Ch. 10) and Stone and Young (1997) consider that an attribution bias may account for why some subjects

are led to consider the hypothesis ‘I am dead’ as opposed to the hypothesis ‘the person in front of me has been replaced by an impostor’.

Normal subjects have been found to attribute the cause of positive events to internal factors, and to attribute the cause of negative events to external factors. One explanation for this is that it is ‘ego-preserving’ in the sense that they are responsible for positive events while factors external to themselves are responsible for negative events. Normal subjects also show a mixed attributional style with respect to explaining events which are perceived as neutral. Subjects with paranoid delusions showed a certain kind of externalizing bias, where an external agency is responsible for negative events. Subjects with depression tend to attribute the cause of negative events to internal factors and they are also more likely to describe the causes as stable traits within themselves that are enduring and are unlikely to change over time.

Stone and Young (1997) suggest that some people may be more inclined to develop the Cotard as opposed to Capgras delusion depending on whether they have an internalizing as opposed to externalizing bias in their attributional style. The thought here is that the Cotard delusion is a kind of internal attribution as the person attributes the cause of the anomalous experience to something within themselves having changed. In this case, the thought is that they have died. In the Capgras delusion the person may be more inclined to externalizing attributions. The person with the Capgras delusion locates the cause of the anomalous experience in the external world when they conclude that the person in front of them has been replaced by an impostor.

This account would seem to run up against a few problems, however. Firstly, Butler (2000) has reported a case of co-present Cotard and Capgras delusions in the same person. If the only difference between people who develop the Cotard as opposed to Capgras delusions is the attributional bias that the person is prone to then the finding of co-present Cotard and Capgras delusions in the same person would seem to create a problem for the account considered thus far. The problem would seem to be that if we want to say that the

presence of attributional bias explains the presence of the delusion then there needs to be more involved in the notion of attributional bias than the mere fact that the person has a certain sort of delusion. If there wasn't anything more involved then attributional bias would merely be a re-description of the phenomena rather than an explanation for the phenomenon.

The measure of whether someone is indeed inclined to an internalizing or externalizing bias would seem to be how often the person makes those kinds of attributions. To consider a person to have both an internalizing and externalizing bias at the same time would seem to undermine the notion of an internalizing as opposed to externalizing bias in the first place. To exhibit a mixed attributional style is simply what normal subjects have been found to do. Although the finding of co-present Cotard and Capgras delusions has been considered to be a fairly significant problem for the attributional bias account of the second factor, it may not be such a significant problem after all. On closer examination the individual with 'co-present' Cotard and Capgras delusions was inclined to one of these delusions in the morning and the other delusion in the evening so it may be plausible to hypothesize that their attribution style underwent a corresponding shift through the course of the day. Stone and Young (1997, p. 346) consider a similar case of KH, 'who was depressed when he claimed to have died, and experiencing persecutory delusions when he said people were impostors'.

A different concern that we may have with the account thus far is that an attribution bias would still seem to underdetermine the belief that the person comes to in two respects. Firstly, why is it that one person maintains that the impostor is an alien, while another may maintain the impostor is a robot, and yet another may maintain that the impostor is a clone? It is hard to know what to say about this. One suggestion has been that we may need to appeal to whatever interests or pre-occupations the person had before their delusion developed. If they had an interest in aliens, for example, or had watched a few alien movies then this might be enough to have the hypothesis occur to them over the alternative hypotheses as to the identity of the 'impostor'. It is hard to know what more to say about this.

Secondly, another more serious problem with the attributional bias account is that it would not seem to be enough to determine that the person adopt the belief ‘I am dead’ over other alternative beliefs that also involve internal attributions. One alternative attribution that has been considered is the hypothesis ‘something has gone wrong with my brain’. Why is it that the person comes to believe the first hypothesis, and yet not the second? At this point I think it is worth noting that the person with delusions seems to be attempting to arrive at a psychological explanation for their anomalous experience. Appealing to brain injury would seem to be a neuro-physiological explanation, however, and thus would not seem to constitute a genuine alternative to their hypothesis in the sense that it is not a hypothesis that is at the appropriate level of explanation. Also, appealing to some unspecified cerebral injury is not a very satisfactory form of explanation. If it was satisfactory, then we would have explained delusions already! There would still seem to be alternative things that the delusional subject could say in the face of their anomalous experience, however, such as saying that they feel strange, or that it is *as if* they had died. Why don’t these, more plausible, hypotheses occur to them as well?

3.3 Jumping to conclusions

While an attributional bias may have prospects for explaining why it is that certain kinds of hypotheses (internal or external) are more likely to occur to the delusional subject in their attempt to explain their anomalous experience, it would not seem to be enough to determine that they will actually adopt as a belief the hypothesis that has occurred to them. Bentall et al. (1991); Bentall and Kinderman (1998); and Garety and Hemsley (1994) found that on probabilistic reasoning tasks people with schizophrenia were found to make judgments of certainty on the basis of less evidence than normal controls, who tend to leave making a judgment of certainty until the probability is higher. It is thought that the tendency to jump to conclusions may explain why it is that a person adopts as a belief the hypothesis that has occurred to them.

In fact, compared to Bayesian norms of probabilistic reasoning people with schizophrenia actually outperformed the normal subjects (who tend to be too conservative in their judgments of certainty). While the finding that people with delusions may perform closer to the ideals of Bayesian probabilistic reasoning may be described as their being found to be ‘more rational’ than non-delusional subjects, this would seem to be more indicative of a problem with taking Bayesian norms to describe normal rationality. As we considered before it is pointless to attempt to show that delusional subjects fall short of the ideal of rationality for the simple fact that non-delusional subjects have also been found to be lacking. It would seem that the performance of people with delusions is significantly different from the performance of non-delusional subjects, however. While Maher is inclined to minimize the differences saying that they are a matter of degree and not of kind and that in any case the people with delusions were found to perform closer to the ideal than non-delusional subjects, the differences between delusional and non-delusional subjects reasoning would seem to be statistically significant.

So, according to the ‘jumping to conclusions’ hypothesis, people with delusions may be more inclined to ‘jump to the conclusion’ that a particular hypothesis is correct rather than waiting until more evidence comes in. This is not an attempt at explaining why it is that the delusional hypothesis occurs to subjects in the first place. It is thought, however that when people attempt to explain certain kinds of anomalous experience an attribution bias may explain why it is that certain kinds of hypotheses occur to them. The tendency to jump to conclusions can then explain why it is that the delusional subject adopts as a belief the hypothesis that has occurred to them. It may be that they simply jump to the conclusion that the first hypothesis that occurs to them is correct. Thus an attribution bias together with a tendency to jump to conclusions is thought to explain the delusional subjects bias / deficit in the process of normal belief formation. The bias / deficit is thought to provide something of an account as to how the subject comes to adopt a delusional belief in the attempt to explain their anomalous experience.

A problem with the story thus far is the experimental finding that the delu-

sional subjects who were found to jump to the conclusion that a certain hypothesis was correct were also found to be inclined to jump out of the delusional hypothesis and change their mind as future evidence came in. This indicates that while the jumping to conclusions hypothesis may go some of the way towards explaining why it is that they jump to the conclusion that a certain hypothesis that has occurred to them is correct, it shows no prospects for explaining why it is that they retain the delusional hypothesis as a belief despite what the APA describes as ‘incontrovertible and obvious proof or evidence to the contrary’. It does not explain why they retain their delusional hypothesis in the face of others attempting to argue them out of their delusion. The problem of the nature of the delusional error in rationality thus seems to be shifted to how they retain their delusional belief as certain in the face of evidence to the contrary.

3.4 Observational adequacy and conservatism

We have already seen how Stone and Young (1997) consider that a breakdown in their model of face recognition may produce an abnormal SGR which may in turn be associated with an anomalous experience for the subject. Stone and Young go on to offer a two-factor account of delusion in the sense that contrary to Maher, they do not consider delusion to be the inevitable result of the person having such an anomalous experience. They go on to offer an account of the second factor by considering that the nature of the delusional subject’s error in rationality is to show a bias for preferring observational adequacy over conservatism.

They describe two principles that they consider to be involved in the normal process of belief formation. The first principle is the ‘bottom up’ principle of observational adequacy. Here the idea is that if we perceive something then it is observationally adequate to form beliefs on the basis of the observational data. The second principle involved in the normal process of belief formation is the ‘top down’ principle of conservatism. They consider that this top down constraint means that it is rational for a person to adopt beliefs that involve

the minimum of doxastic disruption in the sense of maintaining consistency with their pre-existing beliefs. This is because people are thought to be motivated to avoid contradiction if possible. Stone and Young consider that a certain amount of observational adequacy is required in order for us to update our belief network in the face of new information. If we did not employ the principle of observational adequacy at all then we would not be able to learn anything new. Sometimes these principles may come into conflict, however. Stone and Young (1997 p. 349-350) think that

if the belief formation mechanism is to be adaptive then a balance needs to be maintained between these two imperatives. In a person experiencing a delusion this balance goes too far toward observational adequacy as against conservatism.

Davies and Coltheart (2000 p. 28-29) consider that people with delusions are aware that their delusional belief will be considered implausible by others, and that this suggests that they appreciate that their beliefs are inconsistent with many deeply entrenched beliefs of other people, and, indeed, with many belief to which they are strongly committed as well. They seem to be aware that their beliefs are not appropriately conservative but they retain them nevertheless.

Davies and Coltheart elaborate on why this might be so

For a Capgras patient, the belief revisions that would be required to maintain overall consistency given the hypothesis that loved ones have been replaced by impostors would surely be disruptive and uncomfortable. In the case of some other delusions, aiming for overall consistency and embracing the resulting doxastic disruption might even lead to madness (Davies and Coltheart p. 28).

Here the thought seems to be that the delusional belief has been accepted because it is an observationally adequate explanation for their anomalous experience. If they were to aim for consistency once the delusional belief has been formed, however, then this would require radical revisions across the

rest of the person's web of belief and thus the person is motivated to isolate their delusional belief from their other beliefs (the principle of conservatism). They thus do not draw the appropriate inferences or perform the appropriate behaviour. If they did not do this then they may well exhibit the more elaborate delusional systems exhibited by some psychotic subjects rather than having a circumscribed and mono-thematic delusional belief and they may also be more inclined to act on their delusion. Stone and Young say that they are suggesting a motivational explanation for the circumscription, rather than elaboration, of a delusion and that the circumscription of a delusion is a matter of a motivated limitation of inferential *performance* rather than a lack of knowledge or *competence* concerning inferential relations as is suggested by their awareness that others will consider the delusional belief implausible. The problem we seem to be left with is why people with delusions are unable to reject the delusional belief in the face of its inconsistency with their other beliefs. Stone and Young may have described something of the delusional error but with regards to explanation we still seem to be left with a puzzle.

3.5 Two interpretations of observational adequacy

Davies and Coltheart (2000 p. 18) consider that there are two different ways in which we can interpret Stone and Young's principle of observational adequacy that was considered in the last section.

On the first construal, the observational data to which belief revision should be adequate concern the external world... rather than my experiences. On the second construal, the data to which belief revision should be adequate are data about my experiences.

In order to illustrate this distinction Davies and Coltheart (2000 p. 16) describe a situation where 'sitting in my office I seem to see in the corner several little green men playing blackjack with a pink elephant dealing the cards'. On the first interpretation it would be observationally adequate to

form the belief ‘there are several little green men playing blackjack with a pink elephant dealing the cards’. The trouble with adopting and retaining this belief, however, is that one is likely to have compelling reasons for other beliefs that are inconsistent with this hypothesis, such as beliefs that there aren’t any little green men, that pink elephants are unlikely to get into the building, and that at any rate elephants are unable to deal cards. Forming the belief that ‘there are several little green men playing blackjack with a pink elephant dealing the cards’ thus goes against the principle of conservatism.

On the second interpretation of observational adequacy the person should adopt beliefs that are observationally adequate to the experience they are having. In this case the person might come to the belief that ‘it seems to me as though there are several little green men playing blackjack with a pink elephant dealing the cards’. They consider that while it might be natural to take Stone and Young’s observational adequacy requirement to be that one should adopt beliefs that are adequate to their experiences

It does not seem right, however, to say that the Capgras patient goes wrong by attaching too much weight to data about the nature of his experience. That anomalous experience does demand explanation. The Capgras patient’s mistake is to be too ready to adopt a particular explanation of his experience, an explanation involving the delusional hypothesis rather than a more conservative alternative (Davies and Coltheart, 2000 p. 19).

They thus consider that the delusional error is not so much that they accept observational adequacy regarding their *experiences* over conservatism, but rather that they ‘arise from a bias in favor of accepting experiences as veridical’ (Davies and Coltheart, 2000 p. 20). They go on to consider the delusional error in more depth.

3.6 Accepting perception as veridical despite rational grounds to doubt

Davies et al. consider that ‘attempts to say in more detail what this loss of ability amounts to face many problems’ (2002 p. 149). They offer an account of the normal process of belief formation that is broadly similar to that offered by Stone and Young though they are more explicit in offering an account of how the person forms false beliefs about the state of the external world on the basis of accepting their experiences as veridical. Davies et al. consider that normally people do come to believe what they perceive, and they call this tendency a pre-potent doxastic response. Non delusional subjects are thought to be able to inhibit this response when what they perceive diverges too radically from prior perceptions or beliefs. Delusional subjects, on the other hand, are thought to develop delusions because they are unable to inhibit this response in the face of an erroneous perceptual experience (Davies et al. 2002 p.153).

It would seem that it is not a normal, rational, or typical response to always believe what we perceive. Sometimes what we perceive diverges too radically from what we previously knew to be true in the sense that it diverges too much from our prior beliefs and perceptions. When we experience visual illusion, for example, then it may well be a typical initial response to judge the lines to be of different length when viewing the Muller-Lyer illusion. Once we come to understand something of how the illusion is produced, however, or once we see the arrows removed and reinserted then we no longer believe what we perceive. We judge the lines to be of equal length despite the way that they appear to us to be. In this case conservatism has us reject the belief that the lines are of equal length.

Another difference in Davies et al’s, and Davies and Coltheart’s line is that they explore the idea that delusions might not be attempts to *explain* anomalous experiences, rather they suggest that delusions might simply be adopted as the result of the ordinary operation of belief formation. They consider that normally we do accept our perceptual experiences as veridical and if the

delusional subject is doing this then there is no step of inference between the experience and the adoption of the delusional belief.

Davies et al. (2002 pp. 150-151) consider different ways in which the anomalous experience has been specified. Maher gave a very general account of the relevant anomalous experience as a '*vague general feeling*' and thus there would need to be a step of inference between the anomalous experience and the delusional belief. It would seem that the person needs to come to some sort of explanation in order to identify the changed element. If the anomalous experiences of people with the Capgras and Cotard delusions is the same when looking at a face of their loved one then it would seem that a step of inference or explanation is required between the anomalous experience and the delusional belief that the person arrives at in order to explain their anomalous experience. Davies et al. instead consider that the content of the delusion might be given directly by the anomalous experience.

Suppose, on the other hand, that the patient's unusual experience represents the situation as follows: "This is someone who looks just like my close relative *but is not really her/him.*" If the delusional hypothesis is already part of the *representational content* of the patient's perception, then the route to a delusional belief involves nothing more than accepting the perception as veridical.

Davies et al. (2002 p. 149) maintain that the second factor may be described as 'a loss of the ability to reject a candidate for belief on the grounds of its implausibility and its inconsistency with everything else that the patient knows'. The thought seems to be that people with monothematic and circumscribed delusions are able to isolate their belief off from the other beliefs in order to minimize doxastic disruption, but they didn't seem to be able to reject the belief in the face of inconsistency with their other beliefs in the first place. This seems similar to Stone and Young's suggestion that the person with monothematic and circumscribed delusions retains conservatism enough to not follow inferential relations and perform appropriate actions given their belief, but they accept their experience as representing the state of the external world adequately with respect to their adopting the delusional

belief in the first place.

So Davies et al. characterize delusional beliefs in regards to two steps. The first is that they come to a candidate for belief (a hypothesis) the same way that normal subjects do: on the basis of accepting their perceptual experience to be veridical. They consider that this is how people normally do form beliefs and thus this does not consist in a breakdown / bias in rationality. The delusional error, however, is that they adopt the candidate for belief in spite of rational grounds to doubt the belief. This seems to amount to the first interpretation of Stone and Young's suggestion that the delusional error is the inability to reject the candidate for belief on the grounds of its inconsistency with everything they previously knew to be true. They do not reject it even though adopting it results either in a significant breakdown in inferential relations (in relatively circumscribed delusions), or pervasive ramifications right through the subjects belief network (in the more elaborate delusions of some psychotic subjects).

Davies and Coltheart (2000 p. 29-30) summarize their account as a four stage model of delusions (EHBC). They consider that 'The four steps in this schematic account are an anomalous Experience, a prioritized Hypothesis, the adoption of this hypothesis as a Belief, and then finally the Circumscription of the delusion within the subject's web of beliefs'. With respect to the Capgras delusion they outline an explanation as follows:

- E – In response to cerebral trauma the subject has a disorder of face processing which results in an anomalous experience when the person sees a familiar face.
- H – The delusional hypothesis is generated. This might be an explanatory hypothesis prioritized by an attributional bias (Stone and Young's line); or it might be the result of the person simply accepting an anomalous experience as veridical. (Davies et al. adopt the latter line)
- B – This hypothesis is adopted and maintained as a belief as the result of a deficit in belief revision that Stone and Young characterize as a

bias in favor of observational adequacy.

- C – On the basis of motivational factors, the delusion remains relationally unelaborated or circumscribed.

With respect to the motivational factors for circumscription they agree with Stone and Young in considering ‘the circumscription of the delusion may be intelligibly motivated to the extent that following through the consequences of the delusion would lead to substantial doxastic disruption and perhaps, in the limit, to the fracturing of the patient’s conception of the world and his place in it’. Thus the person with circumscribed delusions does not forsake conservatism completely though this might be the case for people with more elaborated delusional systems.

Davies et al, (2002 p. 152) consider that a difficulty with their account of the nature of the second factor - and this is a difficulty that would seem to apply to Stone and Young’s account also - is that they run up against what Davies et al. refer to as an ‘unwanted’ prediction. A visual illusion (such as the Muller-Lyer illusion, or the Ames room) would provide an erroneous visual perception for the delusional subject. On Davies et al.’s account of the nature of the second factor the delusional subject would be expected to accept this erroneous percept despite any rational evidence to the contrary (such as after measuring the lines, or coming to understand how the illusion is produced). On Stone and Young’s account of the nature of the second factor the delusional subject would be expected to come to the same belief on the basis of accepting an observationally adequate hypothesis (regarding the external world) as a belief over a hypothesis that is appropriately conservative. Davies et al. would seem to be correct in considering this prediction to be implausible, although it should be said that it has not been empirically tested.

In the next Chapter I want to consider whether we may be able to avoid the unwanted prediction currently implied by Davies et al’s account by reconsidering the nature of the anomalous experience that is thought to be relevant to the production of delusion. Davies et al. consider the relevant anomalous

experience to be a *perceptual* experience, and hence on their specification of the delusional error we would expect subjects to similarly come to accept their other *perceptual* experiences to be veridical despite rational grounds to doubt. If the relevant experience is not strictly perceptual, however, then we may not expect delusional subjects to accept their erroneous perceptual experiences as veridical despite rational grounds to doubt. It would also seem worthwhile to consider the mechanisms that may be involved in the production of anomalous experience in more detail. It would seem that if it is indeed the case that the person has a rich content anomalous experience which leads to a delusional belief (when accepted as veridical) without a step of inference then we would need more of an account of how such a rich content anomalous experience may be produced.

Chapter 4

Delusional content: anomalous experience reconsidered

4.1 Perceptual versus affective anomalous experience

In the last chapter we considered how Davies et al. (2001) specified the nature of the second factor as the person accepting an anomalous perceptual experience as veridical despite having rational grounds to doubt the veridicality of their percept. They then consider that if this is indeed the nature of the delusional error then we would expect people with delusions to do this same thing in response to other anomalous perceptual experiences such as the experience of visual illusion. Davies et al's account would thus seem to entail that a person with delusions should be routinely fooled by visual illusion despite evidence to the contrary. Davies et al. consider this prediction to be fairly implausible. While it is clearly an empirical matter whether people with delusions would be found to do this or not, I think it would indeed be surprising if this had not been noticed and commented on by family members and clinicians up until now.

Stone and Young (1997, p. 358) consider that

the particular form of perceptual impairment we propose to account for the Capgras delusion involves a loss of affective reactions; whether one sees this as primarily a perceptual deficit or primarily emotional is in part a question of which label is preferred.

They do not elaborate on what other considerations might come to bear on this issue as to which label should be preferred, however. I would like to suggest that the problem of the unwanted prediction might well be one such consideration in the sense that the problem seems to arise from taking the relevant anomalous experience to be perceptual rather than affective.

Stone and Young consider that people with prosopagnosia seem to have a perceptual deficit as they are unable to provide a name or biographical details which enable them to identify or recognize the person who is before them. People with the Capgras delusion are able to report that the person in front of them looks just like the person they have allegedly replaced, however. Stone and Young go on to consider that while in prosopagnosia the perceptual pathway is disrupted, in the Capgras delusion the disruption occurs on the affective pathway. Prosopagnosia would thus seem to be better described as the result of a *perceptual* anomaly while the Capgras delusion would seem to be better described as the result of an *affective* anomaly.

Davies et al's account can be modified so that it no longer entails the unwanted prediction. Instead of considering the delusional error to be in the acceptance of an anomalous *perceptual* experience as veridical despite rational grounds to doubt we can consider the relevant anomalous experience to be affective rather than perceptual. I think that it would indeed be surprising if a person with the Capgras delusion were found to exhibit an abnormal SGR to visual illusions. If they exhibit normal SGR to visual illusion and the relevant anomalous experience for delusion is affective rather than perceptual then we would have no reason to expect them to be repeatedly fooled by visual illusion. Perceptual anomaly that is unrelated to an inappropriate SGR may simply be the wrong kind of anomalous experience for the production of delusion.

4.2 A familiarity mechanism and the production of rich content anomalous experiences

Maher (1999 p. 554) considers the content of the relevant anomalous experience to be a *‘vague general feeling’* that something is different. If this is the content of the anomalous experience for people with the Capgras delusion then there would need to be a step of inference between the content of the experience and the content of the delusional belief. Maher thus considers that delusions are *explanations* for anomalous experiences. In considering the role of attributional bias Stone and Young seem to be similarly thinking along explanationist lines where there is a step of inference between the content of the experience and the content of the delusional belief. Stone and Young consider that people arrive at a delusional explanation for their anomalous experience as a result of attributional bias, a tendency to jump to conclusions, and an acceptance of an explanation that is observationally adequate rather than appropriately conservative. Davies et al. diverge from the explanationist line. Instead they consider that the general content of the delusional belief might be given by the content of the anomalous experience directly. If this is the case then there doesn’t need to be a step of inference between the content of the anomalous experience and the content of the delusional belief. What I want to do now is to attempt to cash this out a bit more with respect to offering an account of how a sub-personal cognitive level breakdown might be responsible for generating such a rich content anomalous experience.

Stone and Young did not explicitly consider the function of the affective pathway except to posit that a breakdown in this pathway results in the anomalous experience that is relevant to the production of the Capgras delusion. While this is very speculative I would like to suggest that the affective pathway may function as a low level recognition mechanism. It might be plausible to consider that such a system may operate on a low level so that higher level cognitive resources are available for alternative activities. The evolutionary advantage in having such a system would be that people would

be able to quickly and automatically assess situations with respect to whether people, objects, places etc are familiar or unfamiliar. This would allow us to monitor for strangers and situations that might be likely to pose a threat. If this notion is plausible then we may have some reason to posit the existence of a fast, low level, primitive recognition system. It may be plausible to consider that if this mechanism were to malfunction and give a false negative then the content of the anomalous experience may be ‘this [stimulus] is unfamiliar to me’ as in cases of Capgras and at least one variety of reduplicative paramnesia. In the case of a false positive the content of the anomalous experience may be ‘this [stimulus] is familiar to me’ as in the case of the Frégoli delusion, and déjà vu experiences in the case of objects / situations.

If there is a mechanism that operates as a low level recognition system then this may also go some way towards explaining why it is that they are not able to just ignore the message that the person / object is familiar / unfamiliar despite others trying to argue them out of their delusion. The pathway may be of use to us primarily because it delivers a fast and compelling verdict that is typically accurate. It might take a bit of time for a new part of the brain to take over the old function, for the person with delusions to learn how to consciously inhibit the ‘unfamiliar’ or ‘familiar’ message their experience is giving them, and / or for psychotropic medication to take effect to mute their anomalous experience. While this is rather speculative it would seem to go some of the way towards explaining how it might be that there are rich content experiences. If this is plausible then it would provide some support for Davies et al’s line that the content of the anomalous experience may provide the content of the delusional belief directly.

The anomalous experience may be found to occur fairly reliably whenever the delusional subject experiences the object of their delusion. Aside from this anomalous experience the delusional subject may well have normal experiences, however. Positing such an anomalous experience with fairly specific content would thus have prospects for explaining why it is that the object of the delusion has been selected and why they have the general kind of delusion that they do. The ‘alarm bells’ signal that something is wrong, but

more than that, they signal just what is wrong, namely that that stimulus which would have produced the strongest SGR prior to cerebral trauma is unfamiliar to them. We can also consider that the same delusional content may result from the auditory rather than visual modality as we saw in Chapter 2. The difference between monothematic delusions and polythematic delusions may be that in the first case there is a deficit with respect to processing a specific kind of stimuli, whereas in the second case there may be a deficit in processing more of a range of stimuli. This may be plausible if we consider that monothematic delusions are typically found in association with fairly specific cerebral injury whereas polythematic delusions tend to be associated with people with psychosis and more distributed problems with neuro-transmission / structure that affect multiple areas of the person's brain.

Some theorists (e.g., Frith, 1992; and an earlier paper of Campbell, 1999) have postulated a mechanism to monitor the self initiation of actions and thoughts. If these mechanisms malfunction then that might lead to delusions of alien control and thought insertion respectively. Here the notion is that delusions of alien control may result from a breakdown in a mechanism that leads to the experience 'that is not my action'. Subjects with delusions of thought insertion may have a breakdown in a comparable mechanism so that their thoughts are experienced as being ego alien. Pacherie et al. (in press) have recently suggested that the notion of an external agency might even be implicated in the content of the delusional anomalous experience rather than being arrived at by way of inference or elaboration in their paper 'Phenomenology and Delusions: Who Put the Alien in Alien Control?'. While I shall not consider these delusions or the mechanisms that have been postulated in order to explain them in any more depth, these examples illustrate that different delusions may well result from different kinds of malfunction to different kinds of cognitive mechanisms.

If it is granted that there can be a fairly rich and specific experiential content then it would seem that we are able to bypass the problem of how the delusional hypothesis occurs to the person in the first place. Instead of

considering the role of cognitive biases such as an attributional bias and a tendency to jump to conclusions the content of the anomalous experience for people with the Capgras delusion may be ‘this person is unfamiliar to me’ as the result of a certain kind of break in a familiarity mechanism. It would seem that there is still a step of inference or elaboration to get the subject from ‘this person is unfamiliar to me’ to some of the more specific hypotheses that people have come to regarding the identity of the impostor, however. In Chapter Two when we considered the possible role of attributional bias in the production of the delusional hypothesis it was noted that this problem of specific content occurred in the positing of an attributional bias as well. It would seem that the specific hypothesis does arise as an elaboration or inference from the content of the anomalous experience. Once again, it is hard to know what more to say about this, though I shall attempt to say a little more later in the chapter.

People with the Cotard delusion often have depression and this depression has been found to result in the subject having a loss of SGR in general. Sass (2004 p. 73) considers that the subject with the Cotard delusion

has lost the capacity to experience affect due to a global shutting down of affective processing in which “information derived from perceptual or cognitive channels have no bodily consequences” . . . such a person is conscious, yet his consciousness lacks a quality that has always accompanied his conscious experience, a quality that is, in fact, intimately allied with his experience as a living subjectivity.

It may be the case that a different mechanism is responsible for the production of an abnormal SGR in delusions of mis-identification (e.g., Capgras, Frégoli, reduplicative paramnesia) than is implicated in the Cotard delusion. If the person with the Cotard delusion has an experience of being dissociated from their body, or of being affectively numb or ‘dead’ then it may be the case that the content of the anomalous experience is quite different even though there is similarity between Capgras and Cotard with respect to comparable loss of SGR to familiar faces, and similarity between (one variety

of) reduplicative paramnesia and Cotard with respect to comparable loss of SGR to familiar objects. If the anomalous experience of people with the Cotard delusion is different from the anomalous experience of people with the Capgras delusion then we do not need to appeal to attributional bias to explain why it is that one person arrives at one of these delusions while another person arrives at the other. It may be the case that the anomalous experience of people with these different kinds of delusion is quite different. The finding of a genuine case of co-present Cotard and Capgras would provide some support for this notion as the attributional bias hypothesis would seem to rule out people being able to exhibit both biases and hence both delusions at the same time.

4.3 Observational adequacy regarding experiences: Explanations versus reports

What I wish to do now is to go back to the two readings of observational adequacy that Davies and Coltheart suggested. As we considered in Chapter Three on the first reading of observational adequacy the data to which one's beliefs are supposed to be observationally adequate concern the external world object of the person's experience under the assumption that ones experiences are veridical. On the second reading of observational adequacy the data to which one's beliefs are supposed to be observationally adequate concerned the one's experiences in themselves rather than as being assumed to be veridical representations of the external world. Davies et al. eventually adopt the first interpretation of observational adequacy with respect to the veridicality of their experiences and are led into the problem of the unwanted prediction. While I have already suggested that their account can be clarified so that the unwanted prediction is no longer implied, I would also like to re-examine the alternative reading of observational adequacy where the data to which ones beliefs are supposed to be observationally adequate concern one's experiences. I would like to see whether there are prospects for furthering the explanation of delusions along these lines, especially in regard

to explaining why it is that delusional utterances are retained with such a sense of certainty / conviction.

Davies and Coltheart (2000 p. 24) consider that if the delusional subject's error is in their adopting beliefs that are observationally adequate regarding their experiences rather than adopting beliefs under the assumption that their experiences are veridical then 'the overall account would need to appeal to something like attributional biases to prioritize the delusional hypothesis'. Davies and Coltheart thus consider that on the second reading of Stone and Young's observational adequacy requirement delusions are explanations for their anomalous experiences. They consider that there would seem to be delusional and non-delusional explanations for their experiences, however, and thus an attributional bias would need to be appealed to in order to explain how the person arrives at a delusional as opposed to non-delusional explanation for their experience.

Davies and Coltheart, (2000 p. 20) consider that this line seems problematic as 'The patients anomalous experience does demand explanation. But the correct explanation is that, as a result of brain injury, the patient is suffering from an affective deficit'. They maintain that if we attempt to take the subject to be explaining their experience then a problem arises in that the delusional explanation

is no more observationally adequate to the nature of the Capgras patient's experience (seeing a face that looks just like their relative, but without experiencing the affective response) than any of a host of alternative hypotheses (Davies and Coltheart, 2000 p.21).

We have already considered, however, that there would not seem to be a host of alternative psychological explanations *for the subject's anomalous experience*. Appealing to 'brain injury' changes the level of explanation. If the person is attempting to come to a psychological explanation for their experience then it would seem that appealing to neurological deficit would be inadequate.

In Chapter Two we considered how Maher attempted to offer a psychological explanation of delusion by appealing to the anomalous experience of delusional subjects. We noted that Maher did not attempt to offer a psychological explanation of the delusional subjects' anomalous experience in turn, however. Instead he considered that anomalous experiences were to be given a neurological explanation by recourse to underlying neurophysiological deficit. If the person is attempting to arrive at a psychological explanation for their anomalous experience and the only non-delusional explanations for their experience are neurological then it may be that there aren't any alternative explanations for their anomalous experiences at the level of explanation that is required. If this is the case then it may be that the delusional subject is behaving in a similar manner to scientists who may cling to an inadequate paradigm despite its obvious implausibility because until a suitable replacement is found it may well be the best explanation they have.

Another suggestion that has come up is that the delusional subject could simply preface their utterances with 'it seems to me as if...' or 'it is like...'. If they were to do this then they would not be considered to be delusional. If this is an alternative hypothesis then it would seem that there are non-delusional explanations available to the delusional subject and thus the second reading of observational adequacy may be insufficient to determine that the subject arrive at a delusional explanation for their anomalous experiences. It is an important point that 'it seems to me as though my wife has been replaced by an impostor' is not an *explanation* for their anomalous experience so much as a way of *reporting* their anomalous experience. Davies and Coltheart considered a direct content line as opposed to an explanationist line on the first interpretation of observational adequacy and it may be that there is a similar direct content / explanationist distinction to be made on the second reading of observational adequacy as well. I have already considered that if they are attempting to offer a psychological explanation for their anomalous experience then it may well be the case that there are no non-delusional alternatives to the delusional hypothesis. From this point I shall consider that they may simply be reporting on their anomalous experience.

rience to see whether this line can similarly lead the subject to endorse a delusional belief. We shall return to the ‘as if’ objection for the reports of experience model later in the chapter.

While delusions are typically considered to be beliefs, and irrational and radically false beliefs at that, it is worth laboring the point that all we have direct access to is the delusional subject’s utterances that we considered in Table 1.1. To figure out the content of the delusional belief, or to figure out what the delusional subject is trying to say in making their utterance we are required to engage in translation. What we saw in Chapter One was that in the case of the Cotard delusion the term ‘death’ may be ambiguous. In the Cartesian model the subject was interpreted as attempting to express the belief that they do not exist as a thinking thing. In the biological model the subject was interpreted as attempting to express the belief that they are biologically dead. Here we have two quite different content attributions of the utterance ‘I am dead’ that would both seem to be licensed by standard usage of the term ‘dead’. A third interpretation has been suggested by Sass (2004). He considers that although we may not be able to empathize with the delusional experience completely we may be able to grasp something of it by recalling times where we have felt a strange neutrality of mood, or as Sass puts it ‘a diminution in the normal tonality of life’. He considers that in these cases we do talk of feeling ‘dead’ or ‘deadened’ and thus if the person was attempting to report on their state of affective non-responsivity with the term ‘dead’ then this would seem to be ‘well within the extended penumbra of comprehensible meanings of this term’.

Maier, Davies and Coltheart, Davies et al., Stone and Young, and the APA definition of delusion are similar in that they consider the delusional subject to be making a false claim about the way things are in the world. They consider that the delusional subject realizes that their delusional belief is likely to be considered implausible by others, and thus they do not seem to have completely lost touch with normal rationality constraints. They also do not seem to have lost their grasp on standard meanings of the terms as they are able to use the words with which they express their delusional utterance

appropriately in other contexts. If Sass is correct in considering ‘emotional death’ to be licensed by standard meanings of the terms then this may be a more plausible interpretation of the content of their belief. The person may well realize how other people are likely to interpret their utterance, however, and this might be an alternative explanation for why it is that they seem to appreciate that others will find their utterance implausible.

4.4 Prospects for delusions as reports of experience

It is often thought to be a fairly significant problem for models of delusions that consider delusions to be false beliefs about external reality that in most cases people with delusions do not follow inferences we would expect and they do not act in ways in which we would expect were they to believe what they are saying to be literally true of the world. In the Capgras delusion, for instance, the person maintains that someone who is close to them has been replaced by an impostor. We might expect that they would attempt to talk to the alleged impostor to see whether they have access to the memories of the original. We might expect them to show some concern as to where the original has got to or concern as to what might have happened to them. Subjects with the Capgras delusion do not attempt to locate the original. They do not contact the relevant authorities to inform them of the disappearance of the original.

While we could attempt to attribute all sorts of other beliefs and desires to the delusional subject in order to make these behaviors rational given their delusion and their other beliefs and desires this is not a line that anybody seems to have pursued. Rather, these facts about delusional subjects most often not acting in ways we would expect has been taken to be evidence for their irrationality. It has also led some theorists to consider that delusions may not be appropriately classified as beliefs. I think that viewing delusions as reports of anomalous experience is able to solve the problem of inferential relations and the problem of inaction quite naturally. There wouldn’t seem

to be any obvious behavioral consequences for beliefs that the delusional subject has regarding their anomalous experiences as opposed to being left having to explain their circumscription if we take them to be making false claims about the external world.

In the last chapter we considered the rich content that Davies et al. assigned to the content of the anomalous experience. In this chapter I attempted to cash that out a bit more by considering how a certain kind of breakdown in a certain kind of cognitive mechanism could result in a rich content anomalous experience. If it is plausible that there is such a mechanism and that it could provide such a rich content anomalous experience then it may also seem plausible to interpret the delusional utterance as the person reporting on their anomalous experience, rather than arriving at the delusional content as a result of attempting to explain them. Davies and Coltheart (2000 p. 17) consider ‘Experience itself may become the object of enquiry because it has been classified as illusory rather than accepted as veridical’. We considered this in the last chapter where Davies and Coltheart maintained that in the case of the pink elephant one’s other beliefs would normally lead to the experience being classified as illusory, and thus the appropriate explanandum is not why there is a pink elephant in the room, rather it is why it seems to me that there is a pink elephant in the room. Davies and Coltheart continue, however

this is not the only way in which our explanatory interest can come to be fixed on the nature of our experience rather than on events in the external world. In the case of some experiences, there is no question of a correct or incorrect presentation of how things are in the external world. Itches and tickles, for example, are not classified as either veridical or illusory, but they can certainly claim the attention of the person undergoing them (Davies and Coltheart, 2000 p. 17-18).

The rich content experiences of people with delusions might well be such experiences. Instead of considering the subject to be attempting to make a false claim about reality on the basis of their experiences, perhaps they are

simply trying to report or express their experience as it appears to them. If this is indeed what they are doing then this would make sense of why it is that they are so very certain about what they are saying. If they are reporting on their experience then they are entitled to be certain that things are in fact the way they seem to them to be.

One of the problems with interpreting the person to be making a false claim about reality was the point that people with the Cotard delusion did not consider it to be relevant to what they were saying that they were still able to walk around. Perhaps they did not find it relevant because they did not draw the implicit steps. It would seem that an alternative explanation for this might be because facts such as their being able to walk around are indeed irrelevant to their utterance. If they are reporting on their experience then those facts would be irrelevant as facts about the external world are irrelevant with respect to providing supporting or disconfirming evidence for one's experiences. This could similarly be the case for people with the Capgras delusion as on one level they may know that the person is their wife and so they do not search for her or mourn her disappearance. Yet on another level they no longer feel attached to her and thus things will not be as they were before though in some cases people with the Capgras delusion do go on to form amicable relationships with the 'replacement'.

Campbell writes that delusional beliefs seem to have been elevated to the status of Wittgensteinean framework propositions by which he seemed to mean that they are immune to supporting or falsifying evidence. Delusional beliefs seem to have taken on this quality where they seem to be beyond the reach of supporting or disconfirming evidence. If delusions are reports of experience then their framework status would be understandable as their claims would indeed be immune to supporting or falsifying evidence from external reality. If they are simply reporting on their experiences then they cannot be wrong, which may be why the delusion is held with such conviction. Their utterances would also not be in conflict with what they previously held to be true.

While Davies et al. enumerated the second factor as them holding on to their

delusional belief ‘despite rational grounds to doubt’; we would not seem to need a second factor if we interpret them as reporting on their anomalous experiences. This is for the simple reason that reports of experiences are comparable to reports of pains and tickles and other first person states. These reports are entitled to be held with conviction and there is no external world evidence that could either lend support to or falsify the subject’s report of the experience that they are having.

4.5 Intensity of experience and delusional certainty

Maher considered that the difference between delusional and non-delusional anomalous experiences was that delusional experiences are more intense and prolonged than the experience of non-delusional subjects. Maher was also particularly careful to emphasise that delusional anomalous experience is a severe variation on normal experience rather than being different in kind. Sometimes we do fail to recognise someone as being familiar to us. These mis-identifications often occur in bad light, or when we see a person in the distance, or when we see the person briefly from behind rather than when the person is standing in front of us pleading for recognition, however. One might consider that a big enough difference in degree may plausibly lead to a difference in kind. The specification of the content of the anomalous experiences that we have considered might be construed as being different in kind from the experience of non-delusional subjects, while not being so very radically different that we are unable to grasp and empathise with the delusional anomalous experience. While the everyday experience of the familiarity mechanism being briefly fooled is different from a reliable deficit in the mechanism, such an everyday experience may provide us the leverage we need in order to be able to empathise with the delusional anomalous experience. The same may be the case with the relatively normal experience of affective flattening and the Cotard subject’s more intense and compelling experience of affective non-responsivity.

We have already considered that instead of saying ‘I am dead’ or ‘my wife / cufflink / canary has been replaced by an impostor’ the person could say ‘*it seems to me as though* I am dead’ or ‘*it is like* my wife / cufflink / canary has been replaced by an impostor’. It was noted that these are not alternative *explanations* for their experience, but they would seem to be alternative reports of their experience. If the delusional subject is intending to report on their experience then we need an explanation as to why they insist on their delusional utterance instead of accepting one of these non-delusional alternatives.

People who develop the Cotard delusion tend to start out by making claims that they don’t feel real or that they feel disembodied. As their depression progresses they end up concluding that they are dead. It might be that, as the depression progresses and their SGR progressively diverges from the normal SGR; their anomalous experience becomes correspondingly more intense. It may be that the force or intensity of the experience is what the delusional subject is attempting to capture with their delusional utterance. People with cerebral trauma wouldn’t seem to have a progressive SGR discrepancy, rather the SGR discrepancy would be pre as opposed to post cerebral injury. In this case the onset of the delusion might be quite sudden. It may still be plausible to consider that they also have a similar force or intensity of experience, however, and it is this that they are attempting to capture with their delusional utterance.

The recurrence and intensity of their anomalous experience may lead to them repeatedly commenting on it, in a similar manner to how some people tend to repeatedly express that they are in pain. If another person attempted to question or deny our reports of experience then while philosophers would recognise this as an illegitimate move I’m sure we have observed people (and children especially) escalating in such situations. If people perceive another person to be doubting their authority on the matter then they tend to report their experience with all the more certainty and conviction than ever before. It is also a point that when normal subjects report that something is painful, they do not take pains to distinguish between their first person experiences

and what may or may not be the case in the world. They do not express their state of pain by saying ‘it is *as if* I am in pain’. If someone were to question whether they were in pain or not then they may emphasise that they *really are* in pain, however.

Maher’s appeal to intensity and duration has come under fire by other theorists. With respect to duration, in particular, it may be hard to see why this would make much of a difference. Surely it would be possible for a person to come to a delusion on the basis of a single anomalous experience. Delusions seem to be present tense rather than past tense, however. People do not present for neurological or psychiatric attention because they maintain ‘my wife used to be an impostor but now she is herself again’. Instead, they present for medical attention because they maintain that woman is [*presently*] unfamiliar. We may thus consider that the delusional utterance would need to be repeated (with conviction) a fair few times before the subject is brought to the attention of a diagnostician. It would seem possible in principle for a subject to form a delusion on the basis of a once off anomalous experience, though it might well be the case that in practice the delusional experience recurs so as to lead to them repeatedly commenting on it, which has them ultimately considered to be delusional.

With respect to the intensity of the experience there is a concern that intensity of experience should be measurable. We might consider that the *difference* between the SGR that should have occurred and the SGR that did occur might be one measure of intensity of the delusional subject’s experience. More work needs to be done with respect to compiling data on SGR to various stimuli in both delusional and non-delusional subjects. More work also needs to be done on the physical instantiation of the cognitive mechanisms that have been postulated in order to obtain the delusional content.

We have been considering that there are two very different things that the delusional subject could be doing in making their delusional utterance. They could be intending to explain, or more plausibly report on the state of the external world on the basis of accepting their anomalous experience to be veridical (which is comparable to the first reading of Stone and Young’s ob-

servational adequacy requirement). Alternatively, they may be intending to explain / report the nature of their anomalous experience (which is comparable to the second reading of Stone and Young's observational adequacy requirement). The APA defined delusions as being 'false beliefs about external reality' but it seems to beg the question to say that people who express the kinds of utterances that we considered in Table 1.1. should be interpreted as intending to describe reality.

It may be that many people who say things that are characteristic of certain kinds of delusions are classified as being delusional, and yet they intend their utterance to be an explanation / report of experience. It may be that only when they are making a false claim about the world that they are appropriately classified as delusional. In this case people with circumscribed delusions may well be inappropriately considered to be delusional because they do not meet the APA definition of delusion even though their utterances are taken to be fairly paradigmatic examples of delusional utterance. We could consider that people who are reporting their experience are not in fact delusional because delusions proper involve making a false claim about the world. But the other way we could go is to say that these people clearly are delusional and this shows the inadequacy of the APA definition of delusion. It seems that not a lot of philosophical import rests on this linguistic decision. Either way it seems that more people do not act on their 'delusional' utterances than people who do and thus a larger class of the utterances that we considered in Table 1.1. would seem to be better explained by the reports / explanations of experience model.

4.6 The problem of action and elaboration

For any model that is able to solve the problem of inaction, there is a related problem that arises. How do we account for the relatively few cases where people actually do act on their delusions? In an often cited case of this one man became convinced that his step-father was a robot and he decapitated him in order to look for the batteries and microfilm in his head. This seems a

very strange thing to do if one is merely attempting to report one's anomalous experience. In another case one woman with the Cotard delusion cut herself in order to show other people that she did not bleed (Stone and Young, 1997). Where people do act as though they intend their claims to be true of the external world then it would seem that the report of experience model is inadequate and we are left having to conclude that the utterances that led to these people being classified as delusional really were intended as claims about external reality.

On Davies et al.'s account of the nature of the second factor the nature of the delusional error was considered to be the retaining of this the content of the anomalous experience as being veridical despite evidence to the contrary. At this point one may well wonder whether the delusional belief comes into conflict with what they previously knew to be true, however. In the case of the Capgras delusion the delusional hypothesis may be arrived at on the basis of an internally generated 'feeling of unfamiliarity' in response to the person. I am not sure to what extent this belief conflicts with what the subject previously knew to be true. Hohwy & Rosenberg (forthcoming) suggest that delusions may be a function of the recurrence of the anomalous experience where there are no alternative ways to reality test. The notion here is that typically we can reality test the information provided by one sensory modality with information provided by another sensory modality. We can check things we hear with what we can see, and what we can see with what we can touch. They consider that the nature of the anomalous experience of delusional subjects is one that is not able to be tested by any alternative sense modality. In the case of the Capgras delusion I would like to consider that the experience of unfamiliarity may provide information that is not duplicated by any other mechanism. One might want to maintain that the remaining perceptual pathway and the beliefs that result from that would be enough for reality testing; however, this does not seem to be the case. I would like to suggest that the reason for this is that the affective response system delivers a more basic and compelling verdict that may take priority because of the evolutionary advantage of monitoring for strangers and possible threat po-

tential. It might also be plausible that the content is not amenable to reason in the same way that some affective experiences have been found not to be.

There is evidence that basic emotional responses (when measured as SGR) can come apart from cognitive evaluation (beliefs) as when a person exhibits a heightened SGR to a stimulus that is presented subliminally and is thus inaccessible to consciousness. Here the perceptual pathway does not get the opportunity to process the stimuli to the point where the person can report on what stimulus was shown to them. Subjects with a phobia of snakes were found to display heightened SGR to pictures of snakes but not spiders or mushrooms, however. People with a phobia of spiders were found to display a heightened SGR to spiders but not snakes or mushrooms. Neither of these groups were able to report the stimulus that was shown to them but they did display a heightened SGR which shows that affective evaluation can be prior to cognitive evaluation. Griffiths (2003) notes that ‘this had led to Ekman’s thesis that there is an “automatic appraisal mechanism” which is a cognitive subsystem dedicated to determining whether a stimulus will elicit a basic emotion and that this is able to operate independently of the cognitive systems that lead to conscious, verbally reportable appraisals of the same stimulus’.

In another case showing how affect and belief can come apart we can consider how a person can have a phobia for spiders and be afraid of a particular spider despite being well aware that that [particular] spider cannot hurt them. It might be interesting to consider that if the person with the phobia were encouraged to provide a rational explanation for their fear then they may appeal to a belief that the spider can harm them – despite their knowing that it can’t. This seems to lead to something akin to delusional ‘double awareness’ where they insist upon the belief yet also seem to be aware that others will find their belief to be implausible to others. They do not seem to be able to relinquish it in the face of their anomalous experience. The process of questioning the persons affective experience or requiring / encouraging them to rationalize it may lead the subject to endorse contradiction.

Stone and Young (1997 p. 340) considers a case of unilateral neglect where

the person has the delusional belief that his left hand is not his hand.

The examiner, placing the patient's left hand in the patient's right visual field, asks: 'Whose hand is this?':

Patient: Your hand.

The examiner then places the patient's left hand between his own hands, and asks: 'Whose hands are these?':

Patient Your hands.

Examiner: How many of them?

Patient Three.

Examiner: Ever see a man with three hands?

Patient A hand is the extremity of an arm. Since you have three arms it follows that you must have three hands.

In this case the person seems to be aware of appropriate inferential relations however the delusional belief does not seem to be negotiable. There is nothing wrong with his logic it is just that he comes to endorse two further delusional beliefs that the examiner has three arms and that the examiner has three hands via this process of questioning.

4.7 Reports of experience, delusional conviction, and implications for therapy

Traditionally it was thought that delusions were not amenable to reason and thus it was pointless to attempt to argue delusional subjects out of their delusion. Fairly recently, however, there has been a move towards offering cognitive therapy as treatment for them. Part of the cognitive therapy approach is to confront the person with evidence and to draw out contradictions and make them explicit in order to weaken their sense of conviction or certainty that the delusion is true. In looking at cases of delusions and case reports of interviews with delusional subjects as therapists attempt to persuade them that their delusions are false I can't help but wonder whether this strategy results in an unhelpful dialectic. One of the main problems they have found with attempting this kind of treatment is that it is hard to build a good rapport between the therapist and the delusional subject and that there are high drop out rates as the delusional subject simply stops going to therapy.

If the delusional subject's sense of conviction or certainty comes from the nature of their anomalous experiences, however, then we may be able to understand something of why it is that they are so reluctant to back down on their delusional utterances. When people attempt to offer evidence to the contrary they may be missing the point that the evidence is not relevant to what the subject is saying. Attempting to draw out the logic of their utterances may result in them coming to endorse greater and greater contradictions in their effort to justify their sense of certainty in the face of their experience. While this might not be fully rational, if we can instead attempt to empathize with the kinds of experience that the delusional subject might be having then we may be better able to arrive at an understanding of why they insist on their delusional utterance despite everyone attempting to argue them out of their delusion. Rather than by engaging in radical translation to attempt to understand the logic of how they can believe a literal interpretation of what they are saying to be true of the world we may be able to

engage in radical empathy to understand why they might be led to say the things they do.

Perhaps it is as Walkup notes:

The distinction between a description of the experience (sometimes called a phenomenological description) and the description of the factual state of affairs is scientifically and clinically important. Scientifically, a subject who consistently failed to describe the perception of certain illusions would be suspected of some visual or neurological abnormality. Clinically, the therapist who challenges a patient's description of his or her experience may sound absurd, just as would a vision researcher who insisted to an experimental subject that the two lines in the Muller-Lyer illusion actually *look* the same length (Walkup, 1995 p. 326).

Rather than focusing on the logic (or illogic) of their utterance I wonder whether it might be more profitable to attempt to empathize with the subject's anomalous experience, not with the view to attempting to argue subjects out of their delusions, but with a view to validating their experience *as an experience*. If one is able to validate the person's anomalous experiences as experiences that are indeed entitled to be held with a sense of conviction then they may be more willing to acknowledge (or come to acknowledge) the distinction between their experiences which are in fact certain, and an external reality that might well be otherwise. If they were to perceive other people as attempting to doubt their authority regarding the experience they know they are having then that might have the counter-productive result of them elaborating and perhaps even acting out on their delusion in an attempt to justify and express their sense of conviction to others. One may be better off establishing rapport by validating the sense of conviction or certainty which is appropriately associated with the subject's anomalous experience and in this manner they may be more open to acknowledging a distinction between the certainty of their experiences and the fact that the state of affairs in the external world is different from the content of their experience in certain specifiable contexts.

4.8 Concluding remarks

Near the end of Chapter One I considered Sass' recommendation that

In my opinion the work of many analytic philosophers interested in psychopathology would be enriched if they spent more time trying to discover and imagine what it might be like to experience certain kinds of abnormal psychiatric conditions, and also speculating about what implications such experiential modalities might have for action and verbal expression (Sass, 2004 p. 72)

In this chapter (in particular) I have attempted to do just that. With respect to a psychological explanation of delusions I considered how appealing to a person level anomalous experience would give us a prior psychological state to appeal to. If delusions are reports of / explanations for certain kinds of anomalous experiences then we may be able to explain them insofar as they are reports of / explanations for a person level state. If delusions are false beliefs about external reality then we may still be able to appeal to a prior psychological state if the belief is formed on the basis of a preceding anomalous experience, though we have also considered that they might not be able to rationally doubt their experience if delusional anomalous experiences may be isolated from the persons network of belief comparably to how some emotional experiences seem to be.

While Maher considered the first factor to be anomalous experience and the other theorists we have considered similarly consider the first factor to be an anomalous experience in a later article Davies et al. (2005) consider that the first factor might be neurophysiological deficit rather than anomalous experience and that further research is needed to determine whether an anomalous experience features early, late, or not at all in the production of delusion. This would indeed seem to be an empirical matter and thus it may turn out to be the case that we cannot offer a psychological explanation of delusional belief. In the line I have considered here, there would only seem to be prospects for person level psychological explanation because of the interaction between physiological, cognitive, and psychological explanation by

way of anomalous experience. I think that interaction between these levels of explanation is important with respect to the prospects for a psychological explanation of delusion and with respect to the prospects of therapy for delusions. It might be possible that the kind of explanation offered thus far would be more palatable to delusional subjects than accounts that appeal to strictly underlying neurological abnormalities.

There is still much work to be done on the explanation of delusion. I have only really considered Capgras and Frégoli (as they arise in response to cerebral trauma), one variety of reduplicative paramnesia (for objects), and the Cotard delusion. A fuller explanation of each of these delusions is required, and it still remains to be seen whether the other varieties of delusions that we considered in Table 1.1. can also be explained along these lines.

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