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COMMENTARY

Revisiting Maher's One-Factor Theory of Delusion, Again

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Abstract Chenwei Nie ([22]) argues against a Maherian one-factor approach to explaining delusion. We argue that his objections fail. They are largely based on a mistaken understanding of the approach (as committed to the claim that anomalous experience is *sufficient* for delusion). Where they are not so based, they instead rest on misinterpretation of recent defences of the position, and an underestimation of the resources available to the one-factor theory.

Keywords Delusion · one-factor · two-factor · anomalous experience · rationality

Preliminaries

Three tasks should be discharged before we discuss Nie's arguments. First we should identify the theoretical target of his critique. In this piece, when we refer to the one-factor theory we mean to refer to an approach according to which there is a single factor (anomalous experience) to which we need to appeal in the explanation of delusion (an approach defended by Brendan Maher [14–18]). This view sits within a broader approach to explaining delusion (*empiricism*), according to which anomalous experience plays a causal role in the generation and/or retention of a delusional belief. Theories developed under this broader approach distinguish between experiential and doxastic mechanisms. A different kind of approach comes from prediction-error theories, which have sometimes aligned themselves with the one-factor project. However, prediction-error theorists often deny a sharp distinction between experiential and doxastic mechanisms and are thus operating at a different level from the debate to which Nie is contributing. In what follows then, references to the one-factor theory should be taken as references to a Maherian theory and its recent developments.

Second, we must properly identify the target phenomenon. Monothematic delusions concern a single theme, and occur 'in isolation in people whose beliefs are otherwise entirely unremarkable' ([2]: 642). Polythematic delusions are more often elaborated and occur in the context of mental disorder. Nie suggests that contemporary theorists in the debate take their theories to be applicable across monothematic and polythematic delusions (p. 2, f. 1). Notwithstanding this, though, our arguments should be read as concerning the monothematic case, a restriction we have been explicit about in previous work with which Nie engages. This is in line with many one- and two-factor theorists who also restrict their accounts to the monothematic, and merely gesture at ambitions that the theory will be applicable to the cases

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which originally motivated Maher's account (see e.g. [7]: 137,[3]: 282,[4]: 103,[28]: 679,[5]: 225–6,[24]: 10,277, [25]: 87).

Third, we must be clear about what we mean by *factor,* given that we are adjudicating between theories which disagree on how many we need to explain delusion. Nie, rightly in our view, identifies a factor as a 'departure from normality' (pp. 1, 13). The one-factor theory appeals to an abnormal, anomalous experience, together with background conditions, to explain delusional belief. There is no further abnormality. The two-factor theorist disagrees and appeals to a second abnormality of belief formation or evaluation. A consequence of this is that what distinguishes a one-factor and a two-factor theorist is not that one takes an anomalous experience to be *sufficient* to explain delusion and the other does not. Rather, the key question is whether, whatever else is needed to explain delusion, it involves a second departure from normality.

Nie's objections to the one-factor theory

Nie's objections to the one-factor theory are based on three arguments regarding: (1) intelligibility, (2) dissociation, and (3) empirical evidence of reasoning abnormalities. Before discussing these, we note a preliminary surprising move that Nie makes at the outset. He remarks that the endorsement view, on which the content of the delusion is presented in the anomalous experience (Nie talks of 'encoded'), is incompatible with Maher's idea that the delusion is a normal explanation of the anomalous experience (p. 5). We don't see Nie's ground for saying this. The anomalous experience is naturally thought of as a state distinct from the subject's delusion. The formation of the belief is a result of the subject's endorsement of the content of the experience. Consider the case of Capgras, where a subject believes that a familiar person has been replaced by an imposter. It is hypothesized that in such cases subjects experience a lack of affective response to somebody with whom they are close (the cause of which has been traced to ventromedial prefrontal cortex damage [30], or right lateral temporal lesions and dorsolateral prefrontal cortex damage [6, 31]). In such a case, nothing rules out the content of the anomalous experience, for example, that *one's loved one has been replaced by an imposter*, as the explanation of the delusional belief that *one's loved one has been replaced by an imposter*. The fact that the content of the belief is the same as the content of the experience does not establish that the experience *thus* fails to explain the belief based upon the content of the experience. When Maher says that delusions are normal explanations of perceptual phenomena what he has in mind is this. The content of the delusional belief, if true, is an explanation of why the subject is having the perceptual experiences they are. The content of the delusional belief is that *one's loved one has been replaced by an imposter*. That is an explanation of why the subject is experiencing that *their loved one has been replaced by an imposter*. A distinct state of affairs, that one's loved one has been replaced by an imposter, is explaining the content of the perceptual phenomena which is that *one's loved one has been replaced by an imposter*. One is a putative fact about the world – about which the subject is mistaken – the other is a perceptual experience with that content. In which case, once these distinctions are recognised, the endorsement view provides an immediate answer to the intelligibility argument below (apparently recognised by Nie when he discusses Sakakibara's work later, p. 9) and puts pressure on the claim that subjects with delusions on the basis of anomalous experience must be making an error of reasoning. However, the endorsement approach is not an essential component in seeing what is wrong with the arguments Nie offers, and so we discuss it no further.

Intelligibility

Drawing on Jaspers ([12]), Nie suggests that delusions do not have an 'intelligible link' with the 'mental events proposed to be their cause' (p. 6). Considering Capgras delusion, Nie argues that the imposter hypothesis might be an explanation of the experience, but there are better ones available (e.g. I am ill). He concludes that:

> the anomalous experience falls short of explaining why the imposter hypothesis is adopted in the light of the significant counterevidence and other more plausible hypotheses. One plausible suggestion is that although the anomalous experience is an important factor, it is not sufficient,

> and some additional factor or factors must be involved in the aetiology of delusions. (p. 7)

The main problem is that Nie, without argument, assumes that it is unintelligible why a subject has a delusional belief if its contents are not the most plausible, given the evidence against it. That is, although Nie has arguments which support the claim that the epistemic behaviour of people with delusions is strange, irrational, or unideal, nothing he says supports the claim that such behaviour is thus *unintelligible.* In general, we are familiar with providing accounts of people's actions, and their beliefs, even though they are not acting on the best reason for their action, or believing in line with what they have sufficient reason to believe. We recognise all sorts of errors, oversights, failures to take into consideration the reasons for doing or believing one thing rather than another. When this happens, we don't think that there is an *intelligibility* failure. It is all too intelligible that a subject should have made an error of this kind. This was part of the impetus behind those who questioned the principle of charity in the interpretation of human behaviour and substituted for it a principle of humanity or some kind of simulation (e.g. [11]: 443–4, [10]).

Let us look at Nie's arguments to show how they fail to demonstrate unintelligibility. The first argument is that some delusions (e.g. Capgras) are 'implausible in the light of common knowledge' (p. 6). But implausibility does not equal unintelligibility, and Nie takes delusion further from the charge of unintelligibility when he grants that replacement of a familiar by an imposter is 'a familiar topic in movies, science fiction, and mythologies' (p. 6, following Christodoulous [1]). We add that not only do we find Capgras themes in the places Nie identifies, there are also news reports or rumours regarding people being replaced by look-alikes (Avril Lavigne, Paul McCartney, Kate Middleton, and Melania Trump have all been the subjects of such stories across the media in recent years). So the idea that delusional themes are implausible set against common knowledge is overstated, and the move from that to unintelligibility is illegitimate.

Another line of argument hinted at by Nie is based on the fact that sometimes subjects have insight into the implausibility of their delusions. Nie doesn't say why this fact suggests unintelligibility, but perhaps he had in mind something like the following thought: given that a subject recognises the implausibility or even absurdity of their beliefs, it might strike us as unintelligible why they nevertheless maintain them.[1] If that was the intended line of argument, it does no better than the first. That subjects with delusions are able to engage in reflective evaluation of their beliefs, and come to judgements regarding their perceived implausibility that might be matched by an observer, does not indite their *intelligibility.* In fact, that they are able to make these judgements has been appealed to in support of the idea that they display no bias in belief formation, and that their competence is untouched ([9]: 167–8). In any case, even if one thought it irrational or poor epistemic practice to form or maintain a belief that one recognises is implausible set against the available facts, once again, we are nowhere close to *unintelligible.* Indeed, such a phenomenon is observed elsewhere. For example, a subject in an abusive relationship may recognise that her belief that her partner loves and respects her looks implausible set against the facts, but she nevertheless maintains her belief due to some feature of her first person experience [23]: 76ff). Such a phenomenon may well be equally likely to present itself when a subject is faced with an anomalous experience of the kind associated with delusions.

Furthermore, what we have said so far sets aside the question of whether the subject with delusions takes there to be sufficient reasons for the delusional belief from their perspective, rather than the perspective Nie assumes when talking about the hypothesis as less plausible. This is a question not addressed by Nie's pointing out that subjects with delusions have a partial sense of the evidence against them and the strangeness of their experiences. The question is whether they take their experience to provide sufficient grounds for their belief and/or whether their suspicious cast of mind (which subjects with monothematic delusions are sometimes said to have) leads them to downplay the evidence provided by friends and experts against their belief and in favour of an alternative (i.e. that they are suffering from a delusion). In our discussion of the one-factor account, we suggested that one way in which subjects with delusions could diverge from those who don't have

[1] A referee suggested this interpretation of Nie.

delusions but have the same anomalous experiences, is that they differ over the weight they give to experience as opposed to testimony from others [24]: 10,298–30). This would provide a clear sense in which it is intelligible why subjects form the beliefs they do. Saying that subjects can't put aside their experiences to look at the evidence against their beliefs in the right way, is to offer explanations familiar in everyday life which allow us to make somebody's behaviour intelligible to ourselves.

It might be suggested that we are skating over an important difference in degree here – that although we find a privileging of experience in the everyday, the extent of the privileging in the case of delusion is more extreme, indeed, sufficiently extreme as to suggest unintelligibility. The point might generalise: the kinds of epistemic failings Nie points to (e.g. believing something that is (1) implausible in light of common knowledge, (2) at odds with testimony from others, and (3) noted by the subject as implausible or absurd) might be argued to show up in a more extreme way in delusional belief in particular (as over against e.g. beliefs from self-deception, conspiratorial ideation, and so on). However, we know of no evidence that this is so, and Nie doesn't provide any. Moreover, we note that such errors are ones which occur in the context of profound anomalous experiences to which the subject is seeking to respond. Thus, even if the epistemic faults were in fact more extreme in the case of delusion, we are, once again, nowhere near unintelligibility once we give due consideration to the context in which those faults occur.

Let us turn now to motivational factors. We can find it perfectly intelligible why somebody would retain a belief, which might originally have been well-grounded in experience, because of motivational factors. One analogy that Maher uses is of the scientists who fail to give up their pet theories in the light of what their colleagues might take to be better evidence for another theory ([14]: 107). Maher's argument was that subject with delusions may do the same thing with regard to their delusional hypotheses. Distress caused by the experience might be met with significant relief for the subject once she has figured things out, whilst attributing to oneself some perceptual or cognitive malfunction might be far more challenging concerning one's current picture of the world ([24]: 10,299–30). An appeal to a role for motivation in the formation or maintenance of belief does not require any commitment to pragmatism (over evidentialism) about reasons for belief. That is, motivational influences on belief is consistent with both the evidentialist's and pragmatist's characterisation of the landscape of reasons. That's because even if you think that only epistemic considerations can constitute reasons for belief, you need not deny that, nevertheless, motivation plays a role in our doxastic lives, you will just add that, insofar as it is not epistemic, it is not a role that we ought to recognise. Often the endorsement of a particular view of reasons is combined with a view about what kind of considerations it is psychologically possible to respond to in deliberation over what to believe. Evidentialists might say that not only are reasons to believe always epistemic, it is only reasons of this kind that we can, as a matter of psychological (or conceptual) possibility, respond to (e.g. [27]). On the other hands, pragmatists who think that there can be non-evidential reasons for belief might well take this fact to be reflected in our practices of belief formation and retention (e.g. [13, 20, 26]). Some pragmatists take a middle ground, arguing that there are pragmatic reasons for belief, but that we are unable to recognise them in doxastic deliberation [8]. Thus, appeal to a role for motivation in belief need not commit one to pragmatism, unless that role is characterised as one grounded in *reasons*. Without that additional commitment, one is free to be neutral on the nature of reasons for belief whilst appealing to motivational influences as an explanatorily useful descriptive (and familiar) fact about how non-deliberative belief formation works. Something like this story is standardly taken to be what is in play in motivatedly biased belief formation, most obviously in non-intentionalist accounts of self-deception, where the role of motivation is to influence the way a subject interacts with evidence in various ways (for an overview see [19]: 26–7). It is this familiar framework that we allude to when we talk about motivational influences on delusional belief.

Lastly, imposing a strong condition on intelligibility, in terms of anything involving a departure from what the subject's reasons support overall, makes it much more difficult to establish that the additional explanatory factor is something which involves a departure from normality. All of the examples given above of how a subject may not arrive at a belief the evidence supports are perfectly normal range mistakes, differences of perspective, or enabled by

motivational factors. Nie's correct characterisation of what is required to establish a two-factor theory seems to be forgotten when the argument from lack of intelligibility is formulated.

Dissociation

Nie's second argument is the familiar argument from dissociation. All two-factor theorists argue that if a one-factor theory were true, then every subject who had the relevant anomalous experience would have the delusional belief. But, since this is not the case, there must be a second factor.[2] The force of the objection relies on taking the one-factor theory to endorse the claim that anomalous experience is *sufficient for delusion* (as Nie does, pp. 1, 6, 7, 10, 13). Without this dissociation would be unremarkable. However, as noted earlier, it is not, in fact, a prediction of the one-factor account that anyone who suffers a particular anomalous experience will develop a delusion ([24]: 10297, [28]: 683, [29]: 2-4).

We might nevertheless wonder *what explains the difference* between those who have the experience and become delusional, and those who have the experience and do not? Opponents of the one-factor approach, most notably, two-factor theorists, have a ready-made answer in their pockets: what explains the difference is the second factor, present in the person who becomes delusional, and absent in the person who does not. But the one-factor theorist can help themselves to all of the resources we outlined in the previous section to explain cases of dissociation. Everyday irrationalities, or idiosyncrasies, can bear the explanatory burden. This leaves the two-factor theorist having to claim that whatever explanation is offered must concern an abnormality. It is far from clear that this is so.

[2] Nie distinguishes two variants of the dissociation argument. The first is as we have stated, the second is structurally identical, but instead of identifying the presence of an anomalous experience without delusion, it identifies the presence of a neuropsychological deficit thought to be responsible for anomalous experience without delusion (p. 9). This version of the argument makes no advance: the mistake in appealing to experience dissociated from delusion is not overcome by shifting the focus to the presence of *the neuropsychological correlates of experience.* Given this, we do not distinguish these versions of the argument in our discussion.

Empirical evidence for reasoning abnormalities

Nie's third argument is that there is some empirical evidence for reasoning abnormalities in subjects with delusions. Although Nie engages with some of our work, he fails to consider in particular the issues we raise with regard to the evidence he cites. To recapitulate, first, although there is evidence that, especially, schizophrenic patients with delusions jump to conclusions (the evidence is more mixed for those with monothematic delusions), it has been suggested that these subjects perform *more* in accordance with Bayesian rationality. Normal subjects are too cautious ([24]: 10,288). This is acknowledged by the proponents of the jumping to conclusions bias. Second, those with the bias show no greater tendency to stick to the conclusions to which they jumped. In which case, when testimony against their delusional belief is provided, one might expect that they immediately conclude that the belief is false. However, they do not. This suggests that there is both a jumping to conclusions bias and a bias against disconfirmatory evidence at work. Nie notes the meta-analytical work in favour of that hypothesis. He does not explain how (say) a subject with Capgras delusion may jump to the conclusion that their loved one has been replaced by an imposter on the basis of, presumably, the evidence given in anomalous experience (rather than resist the disconfirmatory evidence to their prior belief that their loved one is in attendance) and yet, thereafter, display a bias against disconfirmatory evidence to protect the delusional belief ([24]: 10,289). Nie argues that the empirical work suggests 'that some reasoning abnormalities may be an important factor in the aetiology of delusions' (p. 10). However, without a coherent attribution of these biases, the ground for thinking that there is a second abnormal *explanatory* factor of this sort at work is weak. Third, the difference between subjects with delusions and normal subjects is strongest when focusing on neutral subjects (e.g. whether a series of coloured beads is drawn from one jar than another with different proportions of coloured beads). In highly charged subjects, normal subjects and subjects with delusions both jump to conclusions. Since the subject matter of monothematic delusions is highly charged, there is no explanatory salient difference in the crucial case ([24]: 10,289). We haven't discussed all the biases Nie mentions because the meta-analysis he cites concludes that there isn't

the data available for biases against disconfirmatory evidence, against confirmatory evidence, and liberal acceptance, with respect to delusions being a necessary factor across diagnoses (rather than just schizophrenia) ([21]: 351). It also, unfortunately, overlooks the studies we mentioned that the difference between subjects with delusions and normal subjects is strongest relating to neutral subjects.

While overlooking these points, Nie does engage some aspects of our previous work by identifying two arguments upon which he takes our position to rest that he suggests either cut against us or involve a confusion.

The meta-theory argument

Nie quotes earlier work in which one of us argued that people with delusions 'have normal range reasoning applied to abnormal experiences' ([28]: 683). He goes on:

> How should we distinguish a normal-range reasoning process from an abnormal range reasoning process? Sullivan-Bissett does not offer an answer. Instead, she argues that the burden is equally on the two-factor theorists […] (p. 11)

Nie interprets this as the putting forward of the *meta-theory argument.* He argues that in endorsing it, and not providing a demarcation between normal and abnormal mental processes, the one-factor theorist is in danger of either failing to establish their theory over a two-factor one or failing to defend their theory against possible 0-factor theories (which would deny that there is anything anomalous about the anomalous experiences), or delusion sceptics. Nie's argument involves a misunderstanding of the theoretical situation. To see this, let us disentangle two points. The first point is that we must provide an account of why the anomalous experience is abnormal. And the reason that this theoretical burden becomes ours is due to the second point which is that we provide no account of where normality ends and abnormality begins with respect to belief formation and maintenance. Thus, insofar as we take such silence to be legitimate, we leave our position vulnerable to a similar move when it comes to characterising the nature of the anomalous experience involved in delusion. To the first point, it is accepted by both sides that anomalous experiences are non-standard. It is not the case that if we do not accept that the subsequent belief-formation process is non-standard, we are thus challenged to resist a 0-factor account in which even the anomalous experiences are taken as standard. All that we need for the defence of our position is that there are various standard ways in which the subsequent process of belief formation may differ that has the potential to explain why some folk have delusional beliefs on the basis of anomalous experience whereas others do not.

And indeed, contrary to what Nie suggests, it is not true that we say nothing about the issue. At the minimum, we think the process of belief formation that leads up to a delusional belief posterior to the anomalous experience has to be *non-standard* if it is not in the normal range. And indeed, we make a suggestion the mental processes outside of the normal range of those involved in belief-formation are significantly more resistant to rational correction than we would expect in general from the population, given the presence in that population of the kind of experiences which subjects with delusions undergo ([28]: 684, [24]: 10,301). Normal irrationalities are ones over which the subject has some responsibility the basis of which shows up in typical patterns of responsiveness to reasons. Nie does not engage with this in the setting up of the dilemma he takes to derive from the meta-theory argument. Yet, he displays knowledge of it when he talks about irrationalities for which a subject is responsible in the case of the argument by analogy to which we now turn.

The analogical argument

Nie attributes to us an analogical argument in favour of the one-factor theory drawn from our discussion of conspiracy theories. Nie interprets us as saying that '[t]he kind of epistemic irresponsibility in delusions *is the same* as the kind of epistemic irresponsibility in conspiracy theories' (16, our emphasis). He responds:

> While it is true that both delusions and conspiracy theories are notorious types of beliefs that are impervious to counterevidence and in this very general sense the subjects in both cases are epistemically irresponsible, it does not follow that the kind of epistemic responsibility in delusions is the same as the kind of epistemic irresponsibility in conspiracy theories. (p. 16)

He goes on to list other evidence-resistant beliefs, noting that it is 'unlikely that the specific kinds of epistemic irresponsibility in all of these beliefs are the same' (p. 16).

On the last point, Nie is quite correct, but his characterisation of the analogical argument is not. It involves a quantifier shift in order for him to make the point. Our claim is that for each of the various kinds of irresponsible reasoning discussed, that behind delusions, in favour of conspiracy theories, and so on, there is *some* kind of individual difference that explains why some subjects have the irresponsible belief discussed and others, in the same epistemic situation, do not. We do not make the claim, and nor do we need to, that there is some *particular* kind of irresponsible reasoning that covers all the cases of irresponsible belief. Our point was that unresponsiveness to evidence is shared by other beliefs, and that the approach of researchers to understanding other evidence-resistant beliefs is not to appeal to abnormal reasoning, but rather to normal range personality differences or cognitive styles.

Concluding remarks

Nie begins his paper with a correct characterisation of a factor as a departure from normality, and thus what is required for a two-factor theory to be true is that the problem in belief must have this feature. There are points where he keeps this requirement in focus. Unfortunately, at key points, it is held that the one-factor view is committed to anomalous experience being the only *cause* rather than the only *cause* with the feature of being *abnormal* so obscuring the explanatory potential of a one-factor theory. Matters would be advanced if unmotivated restrictions on the explanatory resources of the one-factor theory were not adopted and serious work was done on how, if there is a second factor, it is abnormal, what abnormal means in this context, and what precise evidence bears on the abnormality.

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Declarations

Conflict of interest None.

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