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ON THE RELATION BETWEEN PRETENSE AND BELIEF

Tamar Szabó Gendler

Introduction

Overview

By the age of two, children are able to engage in highly elaborate games of symbolic pretense, in which objects and actions in the actual world are taken to stand for objects and actions in a realm of make-believe. These games of pretense are marked by the presence of two central features, which I will call *quarantining* and *mirroring* (see also Leslie 1987; Perner 1991). Quarantining is manifest to the extent that events within the pretense-episode are taken to have effects only within that pretense-episode (e.g. the child does not expect that 'spilling' (pretend) 'tea'[1] will result in the table *really* being wet), or more generally, to the extent that proto-beliefs and proto-attitudes concerning the pretended state of affairs are not treated as beliefs and attitudes relevant to guiding action in the actual world. Mirroring is manifest to the extent that features of the imaginary situation that have not been explicitly stipulated are derivable via features of their real-world analogues (e.g. the child *does* expect that if she up-ends the teapot above the table, then the table will become wet *in the pretense*), or, more generally to the extent that imaginative content is taken to be governed by the same sorts of restrictions that govern believed content.

At the same time, from the same early age, both quarantining and mirroring are subject to systematic exceptions. Quarantining gives way to its opposite – I call this *contagion* – most strikingly in cases of what I call *affective transmission* (e.g. a child who imagines a bear on the staircase may be reluctant to go upstairs alone), but also in cases of what I call *cognitive transmission* (e.g. a child who has been playing at 'birdwatching' may perceive a partially hidden squirrel in a nearby tree as having birdlike features). And mirroring gives way to its opposite – I call this *disparity* – as a result of the ways in which imaginary content may differ from believed content: in being *incomplete* (e.g. there may be no fact of the matter (in the pretense) just how much tea has spilled on the table), and in being

incoherent (e.g. it might be that the refrigerator serves (in the pretense) as a mathematical-truth inverter).

There is a tendency among philosophers and psychologists to subscribe, tacitly or explicitly, to a conception of pretense that gives pride of place to quarantining and mirroring.[2] Ordinary successful pretense, on such a picture, involves segregated off-line processing and is hence unlike belief in its motivational force and cognitive contributions (thereby exhibiting quarantining); but it involves the processing of belief-eligible content and is hence like belief in its subject matter (thereby exhibiting mirroring).

Much important headway has been made in explaining these striking features of pretense (in the work of Currie, Goldman, Gordon, Harris, Leslie, Lillard, Nichols and Stich, Perner, Walton, and others). But such accounts leave other equally conspicuous features of pretense largely unexplained. While ordinary pretense *is*, in many ways, unlike belief in its motivational force and cognitive contributions, the differences are not absolute. In particular, there are at least two sorts of cases where the contributions to subsequent cognitive processing made by imagining p and believing p differ at most in degree (thereby exhibiting contagion): in their role in evoking affective responses (affective transmission), and in their role in activating schemata, generating attentional filters, and altering evidential standards (cognitive transmission). And while the subject matter of ordinary pretense *is*, in many ways, like the subject matter of belief, the similarities are not absolute. In particular, there are at least two sorts of ways in which the content of what is potentially imagined may differ systematically from the content of what is potentially believed (thereby exhibiting disparity): in its potential to remain deeply underspecified (incompleteness), and in its potential to involve contradictory content (incoherence).

Standard conceptions of pretense emphasize the ways in which ordinary cases of pretense exhibit quarantining and mirroring (and hence resemble belief-like states in terms of subject matter but differ from them in terms of motivational force and cognitive contributions), but they tend to neglect the ways in which ordinary cases of pretense also predictably manifest both contagion and disparity (and hence differ from belief-like states in terms of subject matter but resemble them in terms of motivational force and cognitive contributions). But, I will suggest, it is fully consonant with our general knowledge of how human beings learn from and act in the world that normal cases of pretense should exhibit not only high degrees of quarantining and mirroring, but also that they should exhibit elements of contagion and disparity. Indeed, as I will argue later, the sources of all four tendencies can be traced to fundamental aspects of our cognitive architecture.

Preliminary remarks

Quarantining and contagion seem to be principally a matter of near-universal largely automatic processes: our general incapacity to believe at will is a manifestation of the degree to which quarantining occurs beyond the reach of our cognitive control, and our somatic responses to affect-laden stimuli – whether real or

imaginary – are a manifestation of the degree to which the same is true of contagion. At the same time, higher-order exploitation of our susceptibility to contagion is one of the key elements of 'self-help' – as evidenced by examples ranging from Pascal's trick of coming to believe in God by acting as if one already did, to the advice that fills books like *Success is a Choice: Ten Steps to Overachieving in Business and Life* (Pitino with Reynolds 1997). And a second-order capacity for quarantining (keeping track of what is real and what is merely imaginary) plays a central role in the guidance of action. Deviations from these general patterns seems correlated with wide-ranging disturbances in a variety of cognitive and emotional skills: for example, an extreme tendency towards contagion tends to be associated with systemic forms of psychopathology such as schizophrenia; and complete immunity from (affective) contagion seems to occur only among those with damage to the ventromedial prefrontal cortex.

Mirroring and disparity, by contrast, seem to be the result of capacities exercised primarily at the level of cognitive control: our general sense of the 'free play' of the imagination is a manifestation of the degree to which mirroring exploits the flexible nature of symbolic representation, and our corresponding ability to countenance incompleteness and inconsistency within the context of imaginative exercises is a manifestation of the degree to which the same is true of disparity. At the same time, certain involuntary constraints seem to govern both: these are manifest in the case of mirroring by the sense of 'naturalness' connected with certain associations, and in the case of disparity by the corresponding sense of incoherence. Again, deviation from these general patterns tends to be correlated with systemic disturbances: the inability to balance mirroring with disparity seems uniquely associated with the cluster of incapacities that characterize autism.

In this chapter, I will do little more than to sketch, in preliminary form, what the four features amount to, tentatively proposing several hypotheses concerning the relations among them, and suggesting a number of avenues for further investigation. In the first section, I will provide some developmental background. In the main sections, I will spell out in somewhat more detail the ways in which quarantining/contagion and mirroring/disparity are manifest in young children's games of pretense, and how analogues to them govern more complicated exercises of imagining.

Two final preliminary notes: first, although there are contexts in which it is important to distinguish imagining and imagination on the one hand from pretending or pretense on the other, the distinction is unimportant for the purposes at hand; I will thus use the terms largely interchangeably.

Second, it is a complicated and important philosophical question what precisely belief that p amounts to. For the purposes of this chapter, I am interested only in one small aspect of this issue, namely the contrast between belief-like attitudes on the one hand, and pretense-like (or make-belief-like) attitudes on the other. Of the key differences between these attitudes, two are, for the purposes of this chapter, particularly salient. The first is that whereas belief is what might be called a *receptive* attitude (the agent takes herself to be responding to something

about the world itself), pretense is – at least at its core – a *productive* attitude (the agent takes herself to be projecting something onto the world). The second is that belief is – at least at its core – an attitude intimately connected (via desire) to action (one who desires B, and believes that doing A will bring about B will, *ceteris paribus*, do A), whereas pretense is – for the most part – disconnected from action (one who merely makes-believe that doing A will bring about B will not generally, for that reason, do A). So, generally speaking, when S believes that p, she holds p to be true, and she takes the truth of p into consideration when deciding how to act; by contrast, when S pretends or makes-believe that p, she does not (for that reason) hold p to be true, and so does not (for that reason) make decisions about how to act that take p into consideration.

One indication of what one believes is what one is willing to assent to or assert in normal or high-stakes circumstances (i.e. what one reports oneself to believe). But nonverbal 'reports', in the form of actual or intended actions in normal or high-stakes circumstances, autonomic responses to certain stimuli, and other sorts of physiological or behavioral indicators may also be gauges of belief. (I suspect that it is the tendency to focus on the former to the exclusion of the latter – motivated, perhaps, by an instinctive avoidance of anything even tenuously associated with behaviorism – that has led many philosophers to an oversimplified picture of both belief and pretense.)

In the discussion that follows, my use of the term 'belief-like attitude' or, occasionally the shorthand 'belief' will be both loose and stipulative. I will credit someone with the belief(-like attitude) that p if she acts – outside the context of an explicit episode of pretense – as p-believers generally do. That this is inadequate as a general account of belief should be so obvious as to make it clear that my ambitions in this regard lie elsewhere.

Early childhood pretense: developmental background

By the time normal children reach the age of fifteen months, they are capable of engaging in primitive games of make-believe – acting, for instance, as if a piece of cloth or coat collar were their special bedtime pillow (instances of unconscious symbolic representation may occur much earlier – see Piaget 1945/1962: 96 and chapters 6 and 7). By eighteen months, many show signs of tracking rather elaborate games of pretense initiated by others – for instance, being able to identify which of two dolls that have been 'washed' by an adult experimenter is 'still wet' and engaging in the requisite 'drying' activity (Walker-Andrews and Kahana-Kelman 1997). By twenty-two months, these skills become quite widespread (Harris and Kavanaugh 1993; Harris 2000: chapter 2), and by 24–28 months, most children are able to participate fully in such games – for example, pouring 'tea' for a stuffed cow from an empty plastic teapot, feeding a toy pig some 'cereal' from an empty bowl, giving a toy monkey a 'banana' when there are no (real) bananas in sight, and so on (Walker-Andrews and Kahana-Kelman 1997; Harris 1994, 2000: chapter 2).

Around this same age (24–28 months), children show themselves readily able to generalize on the basis of others's pretend stipulations – if they are told, for instance, that a particular yellow block represents a banana and a particular red block represents a cookie, they require no further prompting to engage in a pretense where yellow blocks in general represent bananas, and red blocks in general represent cookies (Harris 2000: chapter 2 reporting Harris and Kavanaugh 1993; Walton 1990). They show themselves readily able to suspend such stipulations as soon as a new episode of pretense begins – the bricks that represent bananas or sandwiches in one game can without difficulty come to represent bars of soap or pillows in the next game. They show themselves ready to credit imaginary objects with causal powers much like those of their real-world analogues – if Teddy eats one of the (wooden brick) bananas, he will no longer be hungry; if he is bathed in a (cardboard box) bathtub, he will emerge wet (Harris 2000). And they are ready to describe situations from the perspective of the imaginary world – when asked to express what happened after (literally) an experimenter holds a stuffed animal in such a way that the animal's paws grip an empty plastic teapot and hold the teapot above the head of some other stuffed animal, children are happy to report the event as: "Teddy poured tea on Monkey's head" or "Monkey's all wet – he's got tea on his head" (cf. Harris 2000). During the year that follows, most children develop the capacity to engage in complex coordinated games of joint pretense with others (Perner *et al*. 1994: 264). And well before the age of four, they have figured out how to keep track of different individuals simultaneously engaging in different games of pretense – recognizing, for instance, that if you pretend the pebbles are apples and I pretend the pebbles are plums, you will be baking an apple cake while I bake a plum cake (Perner *et al*. 1994: 264).

These capacities are accompanied by a parallel capacity to keep track of what is pretend, and what is not. The fifteen-month old does not give any indication that she comes to think that pieces of cloth are pillows. To the contrary, awareness of the merely pretend status seems explicit: even as she indicates the pillow-like status of the cloth by rehearsing her 'going to sleep' routine – lying down on her side and repeatedly closing her eyes – she emits a giggling 'no-no' (Piaget 1945/1962: 96; Harris 1994: 257). Moreover, when bedtime comes around, she gives no indication that she expects the piece of cloth to be the surface on which she rests her head. That is, even with children as young as fifteen months, there is no indication of what Alan Leslie has termed 'representational abuse', that is, no indication that the child comes to believe that actual-world objects have or will come to have features of the pretend objects that they serve to represent (Leslie 1987). And by the age of three, children are able to articulate this difference – noting, for instance, that a child with a real dog will be able to see and pet the dog, whereas a child with a pretend dog will not (Wellman and Estes 1986; Estes, Wellman, and Wooley 1989; Harris 2000: chapters 2 and 4; see also Bouldin and Pratt 2001 and references therein). While there is some evidence that there are instances when the real–pretend boundary is difficult for children (and even adults) to keep track of – in ways that I will discuss below – it is a crucial feature

of games of pretense that, for the most part, the boundary poses no difficulties whatsoever. Children as young as fifteen months old are completely capable of recognizing that the world is one way (e.g. that there is a piece of cloth in front of them) and pretending that it is another way (e.g. that there is a pillow in front of them).[3]

Quarantining and mirroring

It seems, then, that even very young children are able engage in games of acting-as-if symbolic pretense that are carried out (a) without resulting in representational abuse, that is, without producing the expectation that real-world objects have the characteristics they are supposed to have in the context of games of make-belief, and without between-game permeability, that is, without stipulations from one game of pretense being automatically assumed to carry over to other games of pretense, and (b) without resulting in realm-mixing, that is, without producing the expectation that the actual world will be transformed in ways that accord with actions in the pretense. And it seems additionally that even very young children are able to engage in rule-governed games of pretense that require: (c) the capacity to understand and make use of generative rule-governed pretend stipulations and (d) the capacity to apply certain real-world causal relations to actions within the context of the game.

These features can be captured by a pair of principles concerning quarantining on the one hand, and mirroring on the other. The (*prop-based*) *principle concerning quarantining* specifies how what is pretended affects what is believed: it says that when one pretends that X is Y, things that are believed to be true of Y do not come to be believed to be true of X merely because they are pretended to be true of X. The (*prop-based*) *principle concerning mirroring* specifies how what is believed affects what is pretended: it says that when we pretend X is Y, X is – in the pretense – taken to have the effects and features that Y is – in reality – believed to have.

So, for example, the prop-based quarantining principle tells us that when a child pretends that a block is an apple, she does not thereby come to expect that the features attributed to the block within the pretense episode (e.g. being sweet and edible) will hold of the block in reality (or, more generally, in any scenario outside the pretense episode). And the prop-based mirroring principle tells us that when the child pretends of an empty teacup that it is a full teacup, the attributes believed to hold of the full but not the empty teacup prior to engaging in the pretense (e.g. being filled with a drinkable liquid) will be pretended to hold of the empty teacup while engaging in the pretense.

What holds for prop-based pretense holds more generally. One might generalize the *quarantining principle* to say that things do not come to be believed merely because they are pretended; and one might generalize the *mirroring principle* to say that things that are pretended are the sorts of things that could be, in principle, believed.

If the quarantining and mirroring principles held universally, the real–pretend boundary would be completely permeable in the real–pretend direction, and completely non-permeable in the pretend–real direction. Pretending and believing would be exactly alike, except that one would take place 'on-line' while the other took place 'off-line'. For the mirroring principle would guarantee that the same content p could be the object of a belief or of a make-belief, and that no content would be such that it could be the object of only one or the other attitude. And the quarantining principle would guarantee that make-believing p could never, in itself, bring one to the belief that p.

Contagion and disparity

But the quarantining and mirroring principles do not hold universally. In regular and predictable ways, merely pretending p does seem to cause (what can be characterized as something sufficiently like) the belief that p; and in regular and predictable ways, pretending that p does not seem to be the same thing as making-believe what one would, as a matter of fact, believe if p were (actually) the case. That is, successful pretense is also characterized by the *contagion principle*: some things do come to be believed – or treated as if they were believed – merely because they are pretended, as well as by the *disparity principle*: when one engages in the pretense (imagines) that p, then what one makes-believe (imagines) to be true in the make-believe world differs in some way from what one believes would be true in the actual world if p.

Contagion and disparity occur in cases of pretense that are manifestly non-defective: cases where the pretender is explicitly aware that she is engaged with a realm of make-believe, and where the make-belief is elaborate and rich. That is, contagion and disparity are *features of* successful pretense, albeit features with an importantly circumscribed role. The systematic project of articulating exactly what that circumscription amounts to will need to wait for another venue. In the remainder of the chapter, I merely offer some data points around which a successful theory would need to be built.

Examples of contagion

Affective contagion

Contagion is most strikingly manifest in cases involving what I call *affective transmission*: cases where mere contemplation of an emotionally charged situation causes the thinker to behave in a way consistent with the belief that the situation is sufficiently probable so as to influence prudent behavior. So, for example, a child who has been pretending that there is a monster in the shower may well be reluctant to enter the bathroom (as may an adult who has just seen *Psycho*). This common experience has been noted by a number of philosophers (see, e.g. Hume 1739/1978: I, iii, 13: 248; Ryle 1949: 259; Price 1960/1969: 308–9), and is borne out by laboratory research.

In one typical experiment, children were shown and permitted to inspect two opaque empty boxes, and then asked to imagine either that one of the boxes is occupied by a nice and friendly rabbit, or that one of the boxes is occupied by a mean and horrible monster. As expected, children's verbal reporting exhibited typical features of quarantining: when asked whether there was really a monster or rabbit in the box, the children were readily able to confirm that they were 'just pretending' that there was. But subsequent nonverbal responses to the situation were more complicated. The experiment continued with the researcher asking whether she might leave the room to get the child a little gift. In four cases – all cases where the child had been asked to imagine a monster – the child was unwilling to let the researcher depart, despite repeated verbal and visual reassurance concerning the box's emptiness; in the remaining cases, the researcher stepped out, and (videotapes reveal) nearly half of the children opened one or both boxes, showing a marked tendency to focus on the box containing the imaginary creature. When, subsequent to her return, the experimenter asked the children about their action, a considerable proportion of the children who had opened the boxes maintained that they had done so because they wondered whether, after all, there was something in the box (Harris *et al*. 1991; Harris 2000: 173–80).

Although the interpretation of these data is not uncontroversial (see Bourchier and Davis 2000a,b), it seems likely that affect plays at least some role. If, for instance, children are asked to imagine that there is a pencil in a box when there are no other pencils in the room, and a person comes into the room looking for a pencil, children show no inclination to hand the visitor the box with the imagined pencil in it. (Whether this outcome is the consequence of some sort of cognitive override is, to my knowledge, an open question: I am not aware of research concerning the question of whether children in this situation exhibit some sort of momentary hesitation during which, e.g. they look toward the box but decide not to reach for it – and, if so, whether this hesitation can itself be traced to some sort of affect-based response. If so, this would show the phenomenon of contagion to be more rather than less widespread, supporting further the main theses of this chapter.) In any case, examples where there is a clear failure of override tend to be cases that are emotionally charged (in the sense that they involve either issues of personal safety, emotional significance, or empathy), at least according to studies done so far.

In a widely reported study performed by Rozin and Nemeroff, adults were presented with two bottles, and invited to pour sugar into each one. Subjects were then asked to affix a 'sugar' label to one bottle, and a 'sodium cyanide' label to the other. Although subjects were happy to report that both bottles contained the same thing, namely sugar, and happy to concede that the choice of labels was purely arbitrary, many nonetheless showed a marked reluctance to eat from the bottle labeled 'cyanide' (Rozin and Nemeroff 1991; Lillard 1994: 221). Although this tendency might be overridden in a high-stakes situation – it would be surprising to hear that a subject was unwilling to eat from the 'cyanide' bottle even in exchange for a significant sum of money, or unwilling to make use of its contents when sugar was apparently required for some important purpose – its

existence in the low-stakes situation is nonetheless striking. For even if the instinct to take the cyanide label as reporting some actual fact about the world is superseded by the realization that the label is misleading, the instinct is nonetheless there to be overcome. (For an alternative analysis of the case, see Velleman 2000: 276, n. 65 – since our uses of 'belief' differ in precisely the ways relevant to our apparent disagreement, our views may be less distant than they initially seem.)

It is possible, of course, that the presence of the label plays some role in the subject's reasoning, providing apparent evidence that is processed as reality-indicative until it is overridden by the recollection that it is not. This hypothesis accords well with much of the heuristics and biases literature, which seems to suggest that we initially process all information as if it were a sign of the background circumstances normally associated with such a phenomenon (think of how easily we are jolted into action by a watch we know to be five minutes fast). But even if this is the explanation, it remains the case that some overridden cue – the 'danger' indicator invoked by the presence of the 'cyanide' label – feeds into the agent's decision-making system in a way that allows it to play an action-guiding role. So while we may not have isolated the precise source of motivation in the sugar/cyanide case,[4] it seems clear that some feature of the situation that the agent recognizes (perhaps on reflection) to be merely imaginary nonetheless plays some role in guiding her behavior.

And, indeed, other research suggests that similar contagion occurs in cases where the imaginary cue is purely internal; moreover, it suggests that (non-overridden) contagion occurs in circumstances where the subject is directly emotionally affected by the imaginary scenario, and where the emotional involvement concerns the avoidance of risk. In a study of British voters, Nigel Harvey instructed subjects to pretend that they were supporters of a certain political party (party A) and then asked them whether they would undertake a slightly devious action (lying to a pollster) that would benefit the party they imagined themselves to be supporting (party A) and harm another party (party B) (Harvey 1992). Some of those asked to engage in the pretense actually were supporters of party A (actual A-supporters); others were actually supporters of the rival party B (actual B-supporters); still others actually supported neither party A nor party B (neutrals).

When the study was conducted during a nonelection period, there were no differences among the three groups: 80 percent of actual A-supporters, 80 percent of actual B-supporters, and 80 percent of neutrals reported that they would (in the pretense) undertake the A-benefiting action. By contrast, when a similar study was conducted during the election period, the results differed strikingly: 70 percent of actual A-supporters and 70 percent of neutrals reported that they would (in the pretense) undertake the A-benefiting action – but only 40 percent of actual B-supporters reported that they would do so. (Note that in the first study, 'party A' was the conservative party whereas 'party B' was the labor party; in the second study, the roles were reversed. Harvey argues convincingly that this

difference is immaterial to the studies' outcomes, as a pair of studies in which both parties played both roles would presumably show.)

Harvey suggests that this may be a case of 'decoupling failure' where "wishful thinking impairs belief-desire reasoning." The reluctance of actual B-supporters even to pretend to engage in A-benefiting action presumably stems from a rather complicated process of anticipated contagion. Affective contagion occurs when mere contemplation of an emotionally charged situation causes the thinker to behave as if she believed the situation to obtain (or at least to be somewhat likely). In this case, the B-supporting subjects are presumably reluctant to engage in any sort of pretense concerning (their contribution to) A's success, for fear that it might produce in them a belief that A has succeeded (a situation normally associated with A's actually having succeeded), or for fear that it might weaken their actual commitment to B by producing in them a belief that A should succeed. (It is interesting to note that contagion seems more readily sparked by feared outcomes than by desired outcomes: note that while there is a sharp disparity between the willingness of actual B-supporters to pretend to engage in A-benefiting actions, there is no difference between the willingness of A-supporters and neutrals.)

Finally, as the impatient reader no doubt has been eager to point out, we need not turn to laboratory experiments for examples of affective transmission. Sexual fantasy provides a rather striking example of the phenomenon: merely imagining a sexually arousing situation typically results in genuine sexual arousal. (As the existence of pornography reminds us, the effect is even more profound in cases of prop-based pretense.) Psychoanalysis provides another almost endless source of cases: Goethe's earliest memory – of delightedly throwing crockery out the window and watching it smash on the streets below – is, according to Freud, behavior motivated by a fantasy of throwing his baby brother out the window, thereby ridding himself of his infant sibling rival (cf. Velleman 2000: 266). Finally, the phenomenon that philosophers call the 'paradox of fictional emotions' – that we seem, *prima facie*, to feel real emotions for characters we know to be fictional – suggests another general realm in which affective transmission occurs (see Gendler forthcoming).

Cognitive contagion

A second source of contagion can be found in the phenomenon of *cognitive transmission*: cases where mere contemplation of some emotionally neutral imaginary scenario causes the thinker to become (over-) sensitive to similar scenarios in the actual world. It is a well-known phenomenon – observed by anyone who has ever been pregnant or had a broken leg or bought a new car – that one's attention to and evidential standards concerning the world are sharply affected by what is 'on one's mind'. When one is in a particular situation (e.g. pregnant, broken-legged, having just bought a new Subaru) one seems to observe an unexpectedly large number of others who are also in that situation. Three distinct explanations

account for this phenomenon. First, one may be spending more time in settings that appeal to individuals with this condition, so one may indeed be encountering more people with broken legs or new Subarus than one had been previously. But this is not the full explanation. In addition, it is likely that – without consciously realizing it to be the case – one is more sensitive to the genuine markers of that condition, so that one attends to and conceptually processes more instances of pregnancy or new Subaru-hood than one would have otherwise. On top of this, one may well – again without realizing this to be the case – lower one's standards of evidence for concluding that an individual is in that condition, so that one attributes the condition (perhaps falsely) in instances where, even had one attended to them previously, one would have withheld attribution. These various phenomena – raising to salience, affecting attention, altering evidential standards – are universal features of our cognitive behavior: 'priming' and thinking-about affect both pattern-recognition and perceptual interpretation.

In this light, it is not surprising that imagining p could have the sorts of carry-over effects that it seems to, even in non-affect-laden cases. So, for example, if I spend the morning imagining that I am birdwatching, I will be more likely to attend to actual bird-encounters in the afternoon. Moreover, I may be ready to con-clude that something is a bird on much thinner evidence than I would have had I not engaged in the pretense (e.g. hearing a rustle in the tree outside my study win-dow may be sufficient to convince me that the sound has been made by a bird). And my imaginative engagement with birdwatching may even affect the patterns I perceive – I may actually *see* things differently as a result of what I have imagined.

This phenomenon is familiar from psychological research on perception, and from the research on heuristics and biases. For example, the Availability Heuristic describes precisely such a tendency towards cognitive contagion: a tendency to make judgments concerning the likelihood or relative frequency of events or objects on the basis of the 'availability' of such objects or events to memory, per-ception, or – Kahneman and Tversky explicitly note – imagination (Tversky and Kahneman 1972/1983: 178). And research on attention suggests that perception is heavily dependent on the explicit or tacit intentions with which one approaches the perceptual scenario – intentions that may be equally well stimulated by imagining as by some other cognitive activity.

In short, the evocation of perceptual and evaluative schemata is relatively indif-ferent to whether the evocation occurs as the result of something in the ambient environment, something in memory, or something brought to mind merely as the result of imaginative rehearsal. In all three cases, the consequent availability of the object, event, or schema plays a central role in subsequent attention, perception, and even reasoning.

Summary: contagion

It seems clear that episodes of pretense typically exhibit features of contagion as well as features of quarantining. While we have a marked capacity to distinguish

the imaginary from the real with regard to certain of our apparatuses for cognitive processing, others seem relatively indifferent to the question of whether the subject matter with which they are concerned was generated by the world or by the mind. Among these are the two families of cases discussed above: cases of affect-evoking imagination, and cases of schema-evoking imagination. In both families of cases, the traditional picture – that successful instances of pretense resemble belief-like states in terms of subject matter but differ from them in terms of motivational force – is misleading at least in terms of its second claim. (Recent research on eyewitness testimony suggests that such contagion occurs frequently in children and adults when imaginary episodes are misremembered as real (Ceci and Bruck 1993; Ceci and Friedman 2002; Loftus 1996).)

Moreover, in neither case is this a consequence of some incidental or peripheral feature of our cognitive apparatus: cognitive and affective transmission result from features of the human mind as central as those that produce our capacity for quarantining (see Gendler forthcoming). Cognitive transmission is an inevitable by-product of fundamental processing features: the very features that make perception and information-processing possible make cognitive transmission inevitable. Without the use of schemata, attentional filters, and evidential standards adjustable on the basis of non-belief-based input, our finite cognitive and sensory apparatuses would be ineffective tools for making sense of the world around us.

Affective transfer is a similarly inevitable by-product of similarly fundamental mechanisms. As research by Antonio Damasio and others has demonstrated, patients with damage to the ventromedial prefrontal cortex manifest a cluster of incapacities (Bechara *et al*. 1994; Damasio *et al*. 1991; Damasio 1995, 1999; LeDoux 1996). They lack autonomic responses to emotionally disturbing pictures (though they have no cognitive difficulty identifying such images, nor do they lack autonomic responses in general), and they reveal a marked tendency to engage in high-risk behavior (despite describing themselves as fully aware of its inadvisability). Together, these data seem to suggest that some sort of somatic realization of the potential consequences of a risky action is crucial to prudent decision-making: without it, the theoretical advantages of one or another course of action may be apparent, but these are not translated into action-guiding behavior. Without the capacity to feel something akin to real emotions in the case of merely imagined situations, we would be unable to engage in practical reasoning. What this means is that affective transmission is a fundamental feature of our cognitive architecture, and cannot be treated as straightforwardly and unqualifiedly deviant.

Disparity

The mirroring principle says that imagining and believing are attitudes with similar ranges of possible non-defective contents: the sorts of things that we are able to non-defectively imagine are the sorts of things that we could, in principle,

non-defectively believe. But it seems clear that that non-defective imaginative content may differ from non-defective belief content in at least two ways: what I successfully imagine may be *incomplete*, in the sense that some of its features may remain permanently – even explicitly – unspecified and unspecifiable; and what I successfully imagine may be *incoherent*, in the sense that some of its features may be conceptually or logically incompatible. (I here skate over a number of important issues concerning the attribution of content.) The illusion that things are otherwise stems, I suspect, from intuitive reliance on a picture that treats imagining as just like belief, only off-line, and from a picture of prop-based pretense that treats principles of generation as complete, uniform mappings from one realm to another. Once we realize how complicated mapping relations are, even in simple children's games of prop-based pretense, we can gain a sense for one of the mechanisms by which potentially imagined contents may come to differ from their belief-based counterparts, and hence how disparity might arise.

Principles of generation

As Kendall Walton has persuasively argued, games of make-believe are often governed by what he calls *principles of generation* – local conventions that govern how (certain) features of the actual world are to be mapped onto the imagined one. So, for instance, to pass the time on a long drive, we might agree – explicitly or tacitly – that cars 'count as' lions and trucks as tigers. Once we have done so, certain fictional facts will obtain: if there is a car 50 feet from ours, it will be true in the fiction we have generated that there is a lion 50 feet from the lion we are riding – even if none of us notices it; if two trucks are traveling side-by-side, then two tigers are too. The rule-governedness of generative principles is part of what allows us to structure imaginative space in a way that we are able to make sense of its content. But even in simple cases of prop-based pretense, while some features are generative, others are not.[5] The truck's location may determine the location of the tiger, but other features of the truck – its carburetor, its mudflaps, its spare tire – may have no corresponding role to play in the realm of the pretense; and features of the pretense – the color of the tiger's fur, the sharpness of its teeth, the length of its tail – may have no corresponding 'base' in the realm of the prop.

Consider, for example, how many different mapping schemes are employed even in an extremely simple pretend scenario, and how effortlessly the child moves among them.

> The children watched as we introduced two animals, a monkey and a horse. We 'fed' the monkey with a yellow brick, explaining that he wanted some banana, and we 'fed' the horse with a red brick, explaining that he wanted some cake. Next, we introduced some more animals, telling the children whether the animal wanted banana or cake to eat. The two-year-olds almost invariably responded in accordance with the

generativity principle. In 'feeding' the newly-introduced animals, none of them touched either the 'banana' or the 'cake' that had been given to the monkey and the horse. Instead, they spontaneously reached out and appropriately selected either another 'banana' or another 'cake' from two separate piles of red and yellow bricks available on the table.

<div align="right">(Harris 2000: 12)</div>

During the first part of the game, the pile of red bricks represents a pile of pieces of cake, and the child's action in removing a brick from the pile represents selecting a piece of cake and carrying it to another location. Certain features of the bricks are understood to be relevant to play, others not. So, for instance, the location of the actual bricks indicates the location of the pretend cakes. The shape of the actual bricks may be taken to indicate the shape of the pretend cakes. But the color of the actual bricks may not indicate the color of the pretend cakes. Their lack of stickiness presumably does not indicate the lack of stickiness of the pretend cakes. Their density hopefully does not indicate the density of the pretend cakes. And the fact that they are made of painted wood surely does not indicate that the pretend cakes are composed of such ingredients.

Think, moreover, about the complicated role that the color of the bricks plays in the imaginative exercise. That the bricks are colored red is important to the play – it is this that indicates that the bricks represent cakes rather than bananas. But there would be no problem with introducing a further stipulation in the game – that cakes at the top of the pile are vanilla and cakes at the bottom are chocolate. So to determine what sort of object a particular brick represents, appeal would need to be made to two sorts of properties: the color-properties of the brick indicates its category-membership – red bricks are cakes, yellow bricks are bananas – whereas the location-properties of one subset of the bricks (those red bricks lying in the initial pile) would indicate further of their features within the category – bricks at the top are vanilla, bricks at the bottom chocolate. Note how different these two sorts of mappings are. In the case of real-world items, visual and other sensory properties are indicators of features like bananananess and chocolate-cakeness, whereas in this game, visual properties are indicators of the one (banana vs cake), whereas a property that could never criterially serve such a role in actual cases – location – distinguishes them along the other (chocolate vs vanilla).

So far, we've only looked at the very first mapping – the one that makes the bricks in the red pile cakes. The next thing that happens is that the child moves one of the cakes to the 'mouth' of the stuffed animal. Here, her actual-world motions serve to fix the pretend-world motions: the way she moves the brick from the pile to the 'animal' is the way that the cake moves from the table to the horse. Note that unlike the brick, the child may well here represent *herself* both within and without the game: though she may be a zookeeper, or a horse-trainer, or a child on a nineteenth-century farm, she may also just be Sophie or Helena, engaged in an act of animal-feeding. So whereas the mapping that governed the relation between blocks in the real world and their imaginary-world counterparts took

only a few of their elements – such as location and perhaps size and shape – the mapping that governs the relation between the child in the real world and her imaginary-world counterpart may take on nearly all of her features – at least at this stage.

The next step in the story involves the child feeding the cake to the horse while the horse makes munching noises. Note that here, the mapping between the child's actions and the events in the pretend world must simultaneously differentiate between the actions of her hands, and the actions of her voice. When the child holds the cake up to the stuffed animal's mouth, the location of her hand indicates the location of the feeder's hand in the story. But when the child makes the munching noises, the sound of her voice indicates the voice of the *horse*.

In short, it seems that we are extremely flexible and adaptive about the principles of generation we use when we engage in exercises of prop-based pretense. Mapping may be *partial*, in the sense that only some of the features of the actual world entity are mapped into the pretend realm (see Fauconnier and Turner 1998); and mappings may be *multiple*, in the sense that features of many actual-world entities may be mapped onto a single entity in the pretend realm.

Incompleteness and incoherence

The result of partial mapping is that imaginary entities are potentially *incomplete*: they may explicitly lack determinates for their determinables; the result of multiple mapping is that imaginary entities are potentially *incoherent*: they may affirmatively bear incompatible properties.

So, for example, I may imagine that it is between 50 and 75 miles from Lilliput to Brobdignag, with no further commitment that one rather than another of these distances is – even in the pretense – the distance between them; I may have a mental image of a spotted cow with somewhere between 10 and 20 spots, with no further commitment that one rather than another of these provides – even in the pretense – the genuine spot-count. Indeed, I may even commit myself to it being true that, in the pretense, *no* candidate determination correctly specifies the determinable in question. I might be committed to a view of the term 'zillion', for example, according to which a zillion is a one followed by a large finite number of zeros, but is determinately not equal to 10^n, for any value of n. (Some find this last example rather unconvincing.) All of these, if successful, are examples of non-defective incomplete imagining.

In addition, non-defective imagining may be incoherent. I may imagine that seven and five both do and do not equal twelve (for a story to this effect, see Gendler 2000), or that there is a box that is both empty and not empty (for a story to this effect, see Priest 1999). The ease with which I am able to do so is a consequence of the ease with which 'counting as' occurs in imagination: a number can 'count as' the number 7 in a story, even if, in the story, that number in conjunction with 5 does not make 12; a box can 'count as' empty in a story, even if it also contains something; the Scarecrow can 'count as' a scarecrow in

The Wizard of Oz, even if he is able to walk and talk. And when, in *Mary Poppins*, one of the Pleiades (Maia) comes down to do the Christmas shopping for herself and her six sisters, the little girl dressed in a sky-blue wisp of fabric 'counts as' being a star, despite obvious discrepancies between their relatives sizes and chemical compositions (Travers, 1962: 181–92). Without this sort of 'cheapness', the kinds of imaginative projects in which we engage – from childhood prop-based pretense to sophisticated storytelling – would not be possible.

Summary: disparity

As with contagion and quarantining, episodes of pretense typically exhibit features of disparity as well as features of mirroring. While imaginary objects borrow some of their features from their real-world counterparts, they may differ in at least two ways: what is successfully imagined may be (recognized as) both incoherent and incomplete, whereas what is real may not. So, as before, the traditional picture – that successful instances of pretense resemble belief-like states in terms of subject matter but differ from them in terms of motivational force – is misleading, this time in terms of its first claim. And, as before, this is a consequence of features central to the nature of imagination itself.

Acknowledgments

Notes

1 In the remainder of the text, I will omit scare-quotes unless their omission would lead to confusion.
2 See, for example, Nichols and Stich, whose explicit goal is to provide an account of pretense that explains how it is that "the events that occurred in the context of the pretense have only a quite limited effect on the post-pretense cognitive state of the pretender" (Nichols and Stich 2000: 120) (quarantining) and how it might be that "inference mechanisms treat the pretense representations in roughly the same way that the mechanisms treat real beliefs" (Nichols and Stich 2000: 125) (mirroring). Given their caveats, my project can be seen as supplementary to theirs: what this chapter explores are aspects of the 'limited effect' of the pretense on the pretender's 'post-pretense cognitive state' (contagion) and the ways in which the inference mechanisms that govern pretense are only 'roughly' like those that govern belief (unproductivity).

3 In recent years, there has been intense debate among psychologists concerning exactly what this capacity for pretense amounts to, in light of the fact that children of this age are (a) generally incapable of solving standard ('Smarties-box') false-belief tasks; (b) fairly limited in their capacity to distinguish apparent from real identity in the case of visually deceptive objects; and (c) generally willing to attribute the behavior 'pretending to be an X' to an individual unaware of the existence of Xs. In light of these data, Josef Perner has stressed that the capacity to treat one object as another need not involve the capacity to represent oneself as holding a particular attitude towards that object: the child may believe that the object before her is a blanket and retain that belief while acting as if (pretending that) the object before her is a pillow – without having any second-order thoughts concerning her own attitudes towards it. In particular, Perner argues, she need not believe that she believes that the object is a blanket, or represent her pretense-partner as bearing one or another mental attitude towards the object in question. Indeed, he contends, children of this age lack a differentiated notion of belief as opposed to pretend, making use rather of an undifferentiated concept that Perner terms 'prelief'. Others have challenged Perner's position on various empirical and theoretical grounds. (Perner 1991; Perner *et al.* 1994; for related methodological and/or empirical discussions bearing on these issues, see Bruell and Woolley 1998; German and Leslie 200 ; Harris 1994; Harris *et al.* 1994b; Harris 2000: chapter 3; Leslie 1987; Lillard 1993, 1994; and references therein.)

4 In order to do so, one might perform something like the following experiments. (1) Ask subjects to label the 'cyanide' jar with a label reading 'cyanide' and then to paste a second label over the initial label that reads 'sugar'. (Perhaps doing the inverse with the other jar.) (2) Ask subjects to label the 'cyanide' jar with a label reading 'sugar' and the 'sugar' jar with a label reading 'cyanide'. (3) Ask subjects to label the 'cyanide' jar with an 'A' and the 'sugar' jar with a 'B'. (4) Ask subjects merely to imagine that one of the jars contains cyanide and the other sugar. And so on.

5 Sometimes when we engage in prop-oriented games of pretense, the main goal is to keep the mapping as steady and uniform as possible. So, for example, if I am trying to figure out what the room would look like if the couch were where the table is now and the table were pushed back against the now-empty wall, I want to employ only two sorts of mappings into my imaginary realm: objects besides the table and the couch occupy exactly the same locations in the imaginary realm as they do in the actual world, and the couch and table are of exactly their real-world size, but occupying different locations. This is often the case when we employ mental imagery in the service of spatial problem-solving tasks.