

What Imagination Teaches

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In “What Experience Teaches,” David Lewis famously argued that “having an experience is the best way or perhaps the only way, of coming to know what that experience is like”; when an experience is of a sufficiently new sort, mere science lessons are not enough. Developing this Lewisian line, L.A. Paul has suggested that some experiences are *epistemically transformative*. Until an individual has such an experience it remains epistemically inaccessible to her. No amount of book-learning, or testimony from others, will be enough to give her this access – nor will she be able to achieve it by way of imaginative projection. It’s this last claim that I will question in this paper. Can imagination teach us about fundamentally new kinds of experiences, experiences that are radically unlike any of the experiences that we’ve had before? As I argue in this paper, this question should be answered in the affirmative.

I. Background: From Jackson to Lewis to Paul

Our story begins with Frank Jackson’s paper, “Epiphenomenal Qualia,” and more specifically, with one of the thought experiments contained therein (Jackson 1982). As part of his case against physicalism, Jackson asks us to consider Mary, a brilliant woman who has been confined to a black and white room for her entire life. Though Mary has normal color vision, she has never seen color. Mary lives at some point in the future in which we have achieved a completed color science, and while Mary is in the room, she learns the entirety of this science. Studying textbooks and viewing black and white lectures, Mary learns the complete physical story of color and color experiences, that is, she learns all of the physical facts. But now

suppose that one day Mary is released from her black and white room and is able to experience color for the first time. Suppose, for example, that she is shown a ripe tomato. How will she react? In particular, will she learn something? According to Jackson, it seems obvious that she will – that upon seeing the ripe tomato she'll have a sort of "Eureka!" moment – "Aha!" she'll say, "So that's what seeing red is like." But since Mary already knew all of the physical facts while in the room, whatever she learns cannot be a physical fact. Thus, the physical story about color and color experience leaves something out, and Jackson suggests that we can thereby conclude that physicalism is false.

In the 35 years since the paper was published, this argument – now commonly known as *the knowledge argument* – has been much discussed. Much of the discussion concerns whether and to what extent the argument succeeds in defeating physicalism. But this issue is not of concern to us here. Rather, for our purposes, what matters is the central intuition underlying the Mary case, namely, that absent color experience, Mary cannot know what seeing color is like. Interestingly, there has been widespread agreement about the truth of this claim. Though there are one or two notable exceptions, even the vast majority of knowledge argument opponents accept it.¹

Consider, for example, the response to the knowledge argument offered by David Lewis. In "What Experience Teaches," Lewis argues that it would be a mistake to think that Mary gains any propositional knowledge when she leaves the room and sees the ripe tomato. Yes, she has an "Aha!" moment, and comes to know what seeing red is like, but this knowledge does not consist in the acquisition of any new fact, rather, what Mary gains is a cluster of abilities. In particular, Lewis claims that Mary gains the ability to imagine seeing red, to recognize seeing red, and to recall seeing red. This proposal, which has come to be known as *the ability hypothesis*, sees Mary's knowledge of color experience – and experiential knowledge more generally – not as propositional knowledge (knowledge *that* such and such) but rather as a kind

¹ In a variety of works on the knowledge argument, both Paul Churchland and Daniel Dennett have repeatedly denied the intuition that Mary learns anything when she leaves the room, i.e., they argue that she can have knowledge of what seeing red is like even while she is inside the room. See, e.g., Churchland 1985; Dennett 1991, 2007.

of know-how.² Knowing what an experience is like simply consists of having these abilities. And, setting aside cases involving neurosurgery or magic, the only way to acquire this experiential knowledge – and hence to acquire these abilities – is to have the relevant experience itself.

Developing this Lewisian line, L.A. Paul has recently redeployed a version of the Mary case to motivate a paradox about what she calls *transformative experience*. For Paul, transformative experiences have both an epistemic and personal dimension. When an experience is *epistemically transformative*, you learn something that is in principle epistemically inaccessible to you absent that experience. When an experience is *personally transformative*, you undergo a change to your own point of view to such a degree that even your core personal preferences may be changed. In such cases you may even take yourself to be so changed as to be essentially a new person. Moreover, as with cases of epistemically transformative experiences, the kinds of changes that result from personally transformative experience are in principle inaccessible to you prior to having the relevant experience.

When we consider Mary's release from the black and white room – and here Paul amends Jackson's original case so that we needn't suppose that Mary has any special scientific prowess or knowledge – it seems clear that her color experiences will be transformative in both the epistemic and personal sense. Following Paul, let's distinguish this case from Jackson's original case by referring to the protagonist as *ordinary Mary*. As Paul notes:

Ordinary Mary does not and could not know what it is like to see color, and so she cannot know what it will be like for her to see color until she's left her room. In other words, ordinary Mary, before she leaves the room, is in a special kind of epistemic poverty, keyed to her inability to grasp crucial information of her future experiences. Once Mary leaves the room, her experience transforms her epistemic perspective, and by doing so, it transforms her point of view. (Paul 2014: 9-10)

² The ability hypothesis was originally proposed by Laurence Nemirow (1980, 1990). Nemirow's version of this hypothesis focuses on only a single ability, namely, the ability to imagine seeing red. Lewis's version, which specifies the three abilities laid out in the text above, is now considered to be the standard version of the view.

While the case of ordinary Mary might seem removed from real life, it's nonetheless true that many of our major life experiences appear to resemble Mary's experience of color in being both epistemically and personally transformative. Consider having to grapple with the death of a parent, or of a child, or being the victim of a violent crime, or suffering a traumatic injury. Such experiences are often described by those who undergo them as "lifechanging," a term that seems to capture their transformative nature. In all of the cases just listed, the relevant experience is simply thrust upon us, often without warning, but there are other transformative experiences that are presented to us as a matter of choice. For Paul, many of the major decisions that we confront as we go through life concern experiences that are both epistemically and personally transformative. When we face decisions about whether to become biological parents for the first time, or join the army, or undergo major surgery, Paul suggests that key facts about what the experience will be like are inaccessible to us prior to undergoing the experience itself, and she also suggests that the experience will profoundly change who we are, and do so in ways that cannot be predicted in advance. Thus we have the paradox that interests her: In cases involving transformative choice, that is, in cases where we're faced with deciding whether to undergo the experience, how is it possible to make such choices both rationally and authentically?

For our purposes here, just as we need not worry about the conclusions concerning physicalism that Jackson wanted to draw from the case of super scientist Mary, we also need not worry about the conclusions concerning rational decision-making that Paul wants to draw from the case of ordinary Mary. Rather, what's important to us is the claim underlying these cases, namely, that there are various cases of experiential knowledge in which the only way such knowledge can be gained is to have the relevant experience. In the remainder of this paper, I will call into question the plausibility of this claim. My focus on what follows will be on epistemic transformativeness though if my argument succeeds I suspect that much of it will be applicable to personal transformativeness as well. My argument will proceed, in effect, by turning the ability hypothesis inside out. Rather than thinking that we gain the ability to imagine a certain experience in virtue of knowing what such an experience is like, we should

instead think that in at least some cases we can come to know what an experience is like in virtue of our imagining it.

II. Imagination and Decision-Making

Suppose that you're in the process of redecorating your living room. You've recently repainted the walls a rich shade of golden brown, and now you're at the furniture store trying to pick out a new sofa. Unfortunately, you forgot to bring paint chips or pictures, so you can't compare the sofa colors to the new color of the walls – and it would be a long trip home to retrieve them. So how do you make your decision about which sofa to buy, about which color sofa would look best in the newly repainted room? Here there seems an obvious solution: Call upon your imagination. You imagine the various sofas in your living room, and you use these imaginative exercises to make the determination about which sofa would be the best choice.

This isn't the only context in which you use your imagination to help you in your decision-making. Suppose you're trying to decide whether to spend your Thanksgiving vacation in the desert of Joshua Tree or the mountains of Big Bear, or whether to get the iPhone Xs or the iPhone Xs Max. Or suppose, as you're headed out to spend an afternoon on the soccer sidelines watching your kids' games, you're trying to decide whether to bring the heavy EZ Up that offers more effective sun protection or the much lighter beach umbrella that's less effective at providing shade. In all of these cases, you are likely to be calling upon your imagination. Let's think about how you might go about your Thanksgiving vacation planning. You might first imagine hiking to the Lost Palms Oasis trail, returning home for a refreshing swim in the pool, and then having Thanksgiving dinner under the stars against a brilliant desert sunset. And you might next imagine skiing down the Widow-maker slope at Bear Mountain, returning home for a relaxing soak in the Jacuzzi, and then having Thanksgiving dinner inside in front a burning fire. And likewise for these other decisions: You might first imagine how much easier it will be to type and read on the bigger screen of the Xs Max, and then next imagine how much harder it will be to fit the phone in your pocket. Yes, you could go to the store for a

hands-on test, but in the wee hours of the morning, when you're making the purchase on line, there are no sample models available for you to try out.

In general, in making all sorts of decisions both big and small about our futures, we frequently call upon imaginative exercises to help us make better, more informed choices. Our imagination might not always get things exactly right, but it needn't be an infallible guide in order that we be rational in relying upon it. So one might thus naturally think that we could also call upon the imagination in the sorts of cases that Paul has in mind as epistemically transformative – cases where we are trying to decide whether to have a child, or to join the army, or to undergo major surgery. Just as our imaginative exercises give us epistemic access to the way the sofa will look in the newly repainted living room, or what's it like to spend Thanksgiving vacation in Joshua Tree, can't our imaginative exercises give us epistemic access to what it's like to be a parent?

For folks like Paul (and presumably Lewis) who answer "no," the difference between these ordinary decision-making contexts and the transformative decision-making contexts is that in the transformative cases we don't have enough experiential background to get an appropriate toehold for the imagination. Here we might recall a famous passage about the alleged inadequacy of imagination from Thomas Nagel's paper "What Is It Like To Be A Bat?" In the course of arguing that such knowledge is inaccessible to us, Nagel argues as follows:

Our own experience provides the basic material for our imagination, whose range is therefore limited. It will not help to try to imagine that one has webbing on one's arms, which enables one to fly around at dusk and dawn catching insects in one's mouth; that one has very poor vision, and perceives the surrounding world by a system of reflected high-frequency sound signals; and that one spends the day hanging upside down by one's feet in an attic. In so far as I can imagine this (which is not very far), it tells me only what it would be like for me to behave as a bat behaves. But that is not the question. I want to know what it is like for a bat to be a bat. Yet if I try to imagine this, I am restricted to the resources of my own mind, and those resources are inadequate to the task. I cannot perform it either by imagining additions to my present experience, or by

imagining segments gradually subtracted from it, or by imagining some combination of additions, subtractions, and modifications. (Nagel 1974, 439)

Just as imagining that one has webbing on one's arms and that one has poor vision, etc., is not to imagine what it's like to be a bat, imagining that one has an infant strapped to one's chest in a baby carrier and that one is utterly exhausted is not to imagine what it's like to be a parent. And just as Nagel denies that the present experiential resources of someone who is not a bat are adequate to provide the appropriate materials for imagining what it's like to be a bat, Paul denies that the present experiential resources of someone who is not a parent are adequate to provide the appropriate materials for imagining what it's like to be a parent.

Importantly, these transformative cases are meant to be special ones. It won't be true in every ordinary case that one actually has to have undergone the experience before to know what such an experience is like. If you haven't hiked the Lost Palms Oasis trail but you've hiked other trails in Joshua Tree, and you've seen an oasis before, or even just seen pictures of oases before, then by using your imagination – as Nagel says, by “imagining some combination of additions, subtractions, and modifications” to other experiences you've had – it's plausible to say that you could know what hiking the Lost Palms Oasis trail is like even without having done it. Let's call the process employed in this sort of case one of *imaginative scaffolding*. And this is the same kind of process that we use in the other kinds of decision-making cases mentioned above, from the living room redecoration to the iPhone purchase. Sure, I haven't ever held on iPhone Xs or Xs Max, but I've held an iPhone 7, and that seems to give me what I need to make the appropriate extrapolations.

Note that for our purposes here, we don't have to specify exactly what role this imaginative scaffolding plays in the production of this experiential knowledge, i.e., whether it is involved only in the context of discovery, or whether it can also be said to be involved in the context of justification. Historically, philosophers such as Jean-Paul Sartre and Ludwig Wittgenstein have famously argued that imagination never plays a justificatory role in our acquisition of knowledge. As Sartre claims, “nothing can be learned from an image that is not already known.” (1948, 12) Since on his view “it is impossible to find in the image anything

more than what was put into it,” we can conclude that “the image teaches nothing.” (1948, 146-7)³ Wittgenstein makes a similar point when he notes that we are not surprised by the content of our imaginings. (Zettel §632) Elsewhere I’ve argued against these claims; in my view, the fact that imagination calls upon our past experiences doesn’t prevent it from being able to play a justificatory role in knowledge acquisition. (Kind 2016; Kind 2018) But in the present context, it doesn’t really matter whether imagination gets the credit for providing justification of the relevant knowledge – all that matters is whether such knowledge is attainable. I’ll often talk in terms of imagination *providing* the knowledge; this talk should be read as neutral on the question of the precise nature of the epistemic role that imagination plays in the process of knowledge-generation.

So there are some decision-making contexts – like redecorating the living room or vacation planning – where our experiential resources are sufficient to enable us to use imaginative scaffolding to gain experiential knowledge, whereas there are other decision-making contexts – like family or career planning – where they are not – or so it’s been claimed. In the following section, I’ll turn to the question of what exactly is supposed to account for this difference.

III. Tasting Durian and Climbing Mountains

Let’s consider another example of Paul’s – that of tasting a durian for the first time. The taste of a durian is quite different from the taste of other types of fruit, indeed, it is quite different from anything most people have tasted before. Moreover, it is very hard to describe the taste of a durian to someone who hasn’t tried one, and while some people love it, others find it completely repulsive. Indeed, the Internet is awash with videos of people trying durian for the first time, and their reactions can provide for a few moments of diversionary amusement. Paul’s thought is that before you’ve tasted durian, no matter how many different kinds of fruits or exotic foods you’ve tried in the past, you can’t know what tasting durian is like.

³ See also McGinn (2004, 18).

Of course, when you're about to eat a strawberry, even when you've tasted strawberries many times before, there's also a sense in which you don't know what tasting *this particular strawberry* is like. Perhaps it will be slightly tart, or perhaps it will be especially sweet. Importantly, however, Paul doesn't want to treat tasting *this particular strawberry* as an epistemically transformative experience. As she puts it, "epistemically transformative experiences arise from having new *kinds* of experiences." (2014, 26)

Initially, this clarification may seem to help answer the question that we're here considering. Given that I've taken hikes before, the experience of hiking the Lost Palms Oasis isn't a new kind of experience, just like tasting this particular strawberry isn't a new kind of experience given that I've tasted strawberries before. But for Ordinary Mary, who has never had any sort of color experience before, seeing red is a fundamentally new kind of experience. And likewise for the prospective soldier or the prospective parent. Given that a prospective soldier hasn't previously done anything like risking their life of the battlefield, and that a prospective parent hasn't previously done anything like bringing a new life into the world, such experiences also seem to be of fundamentally new kinds for the experienter.

But matters are not quite this simple. Let's consider a case involving a considerably more elaborate hike than the 7.2 mile trek in Joshua Tree, namely, climbing Mount Everest. For many mountain climbers, climbing Mount Everest is a life-changing experience – one they claim can't be fully understood in advance. Take these remarks from climbing expert Alan Arnette, who summited Everest on his fourth attempt at the age of 58: "Climbing Everest is hard. It tests you in ways you never knew possible. You will understand that several months after you get home – regardless of your result. ... If you summit, it will change your life. If you attempt it, it will change your life."⁴ If we take Arnette at his word – and there's lots of testimony from other climbers who say similar things – then it looks like climbing Mount Everest should be a transformative experience.

⁴ See <http://www.alanarnette.com/blog/2016/12/16/i-want-to-climb-mt-everest/>

But in what way is climbing Mount Everest a fundamentally new *kind* of experience? Consider an avid hiker and climber who has previously undertaken many mountain adventures. They have scaled Half Dome at Yosemite, they have spent three weeks hiking the John Muir trail, they have climbed Mount Whitney where the elevation at the summit is 14,494 feet, they have climbed Mount Kilimanjaro where the summit is 19,341 feet, and so on. They have previously used ice axes and crampons and oxygen masks. So how is climbing Mount Everest a new kind of experience for them in the relevant sense? This experience falls under several kinds – *mountain climbing experience*, *dangerous and strenuous mountain climbing experience*, *stretching oneself to the limit experience*, and so on. But our seasoned climber has undergone all of these kinds of experiences before. Unless we have a very fine grained conception of experience – such that the relevant kind of experience is, simply, *climbing Mount Everest experience* – it’s hard to specify an experiential kind that would be a fundamentally new one for our seasoned climber. And since climbing Mount Everest, i.e., the experience of climbing a particular mountain, sounds equally fine grained as the experience of tasting a particular strawberry, it doesn’t seem that Paul should classify this as a fundamentally new experiential kind.

Now Paul herself doesn’t cite climbing Mount Everest as an example of transformative experience, and so presumably she’d simply deny that such an experience is epistemically transformative in her sense. But, as we’ll see, the Mount Everest example is instructive, for it enables us to start to put pressure on what counts as undergoing a fundamentally new kind of experience. We have some cases that plausibly seem to be on one side of the line – like tasting a durian for the first time – and other cases that plausibly seem to be on the other side – like tasting a particular strawberry for the first time. In between we have a whole bunch of cases about which it’s less clear what we should think. For someone who has had lots of varieties of melon – honeydew, cantaloupe, etc., does it count as a fundamentally new kind of experience when she tries a canary melon for the first time? For someone who has had lots of apples and other types of fruit, does it count as a fundamentally new kind of experience when she first tries a pear? For someone who’s tasted both apples and bananas, does it count as a fundamentally new kind of experience when she first tries a Hawaiian apple banana?

I won't here try to answer these questions, but I raise them to begin to put pressure on the idea that we can clearly demarcate some class of experiences that count as fundamentally new. This alone is not enough to show that Paul is mistaken, of course, since even if there are some cases that are hard to classify, as long as there is a class of cases that fall clearly on the side of being fundamentally new, Paul's arguments will hold for at least that class. In the next section, however, I will suggest that it's not even clear that there is such a robust class – or at least, it's not clear that the examples of transformative experience on which Paul focuses fall into that class. In what follows, I'll home in on one such example in particular, namely, that of having a child. Paul is explicit that this experience – which she understands as one of gestating, producing, and becoming attached to one's child – “is an experience with an epistemically unique character.” (Paul 2014, 80-81) On her view, no matter how many new parents you talk to, no matter how much time you spend with your nieces and nephews, no matter how many parenting books you read, and no matter how much you try to imagine a parental future, you cannot know what it is like to become a parent prior to your becoming so. As I will suggest, attention to cases of skilled imaginers helps to show why this is mistaken.

IV. Imaginative Contortions

Having a child – gestating, producing, and becoming attached to the child – is an ongoing experience, one that has significant extension through time. In this respect it is unlike the experience of tasting a durian for the first time. So while we might think of the phenomenology of the durian experience in terms of some particular durian quale or qualia, it doesn't seem plausible to think of the phenomenology of the parenting experience in terms of some particular parent quale or qualia. Rather, the experience of having a child involves some complex and temporally extended phenomenology. When attempting to characterize the basis of this phenomenology, Paul notes that it could be the product of several different elements, either individually or in combination: the experience of producing a child, the experience of producing this particular child, your first experience of parental love, and so on. Because it is

such an important part of her case, it here seems worth focusing a bit on parental love. I hope what I say will apply to the other aspects of parental phenomenology as well.

Assuming with Paul that you cannot experience parental love before becoming a parent, it's nonetheless true that there are lots of other varieties of love that you can experience. You might feel filial love for your own parents, romantic love for a partner, or so-called "brotherly" love towards other family members and friends. Some people love their close animal companions. Some have a love for humanity in general. And some people feel love for the god or gods that they worship.

Each of these varieties of love is different in various ways from the others – the love that you feel for your mother is different from the love that you feel for your best friend, and yet again different from the love that you feel for a romantic partner. But of course, the fact that the experience of hiking the Lost Palms Oasis trail is different from the experience of hiking the Bright Angel trail at the Grand Canyon does not mean that they're experiences of fundamentally different kinds. Someone who has done lots of hiking but who hasn't hiked the Bright Angel trail might be able to use imaginative scaffolding to discover what hiking that trail is like. Can someone who has experienced different varieties of love – who has loved her parents and her siblings and her friends and her Labrador retriever – but who has never experienced romantic love before use imaginative scaffolding to discover what romantic love is like? Certainly little kids who watch princess movies and play dress-up and family take themselves to be imagining romantic love, as do hormonal teenagers who are yearning to find "the one." Or consider someone who has never shared her life with an animal before, and who is contemplating getting a canine companion. Is the experience of love that she'll feel for her dog completely closed off to her, or might she be able to get some kind of good sense in advance?⁵

⁵ Here there is a big question about what exactly happens when someone who has never experienced romantic love learns via imagination what it is like, or when someone who has never experienced love for a canine companion learns via imagination what that is like. Is that exact same phenomenal quality produced? Many find this suggestion implausible. But what might happen instead? I regret that I don't here have answers to these questions, but I hope to return to the matter in future work.

As different as these kinds of love are from one another, I'm disinclined to think that they are, in principle, imaginatively closed off from one another. Upon falling in (romantic) love for the first time, someone might plausibly say: "This is just what I've always been dreaming of." Granted, not everyone will say that. Some of the young children who imagine romantic love will not have gotten it right, and when they finally experience romantic love for the first time, they'll find that it's nothing at all like they'd imagined. Perhaps it's dramatically better, perhaps it's dramatically worse, perhaps it's more intense, or more all-consuming, or more selfless. But the fact that in some cases someone's experience of romantic love turns out to be different from how they'd imagined it to be does not show that the experience is imaginatively closed off, in principle, to anyone who hasn't experienced it. Rather, it might simply be that they're not very good imaginers.

Imagining is a skill. Like any skill, one can get better at it with practice, and some people are better at it than others. And also like any skill, it can seem unfathomable to someone who lacks the relevant skill what someone who has it can do. Think of a skilled chef chopping vegetables, or a skilled juggler manipulating bowling balls and flaming clubs, or a skilled acrobat at a *Cirque du Soleil* performance. Once when I was in London on a family vacation, I saw a street performance by a performer who calls himself Yogi Laser. Yogi Laser is an amazing contortionist, and in addition to doing all sorts of poses with his body that I could hardly describe, in the finale of his act he folds himself up in such a way that he completely fits inside a glass box that measures 17 x 20 x 20. This is a man who lists his height at 5'8 and his weight at 146 pounds. And apparently he holds the world record on this for speed – he's managed to get himself into the box in 5.35 seconds. (It took him a lot longer to do it in his street performance, but then again, he was also milking the crowd for donations the whole time.) Even *seeing* what he could do, I found it almost impossible to believe that someone could be so skilled.

Those of us who are not gifted contortionists might find it hard to fathom how a 5'8 person could fit himself into a 17 x 20 x 20 box. But the fact that we can't do it ourselves shouldn't lead us to conclude that it can't be done. Likewise, those of who are not gifted imaginers should be wary about drawing conclusions about what's imaginable from the fact

that we can't successfully engage in particular imagining ourselves. The fact that some of us can't imagine a variety of love they have never felt before doesn't mean that no one can imagine a variety of love they have never felt before. Just as when we talk about what contortion is or is not possible for the human body we should focus on skilled contortionists, when we talk about what imaginative exercise is or is not possible for a human experienter we should focus on skilled imaginers.

Here it's worth noting that there are two different ways of being a skilled imaginer.⁶ The first involves being skilled at fantastical imaginings. Someone with this skill, which relates to what I have elsewhere referred to as the *transcendent use* of imagination (Kind and Kung 2016), is very good at letting their imaginings run wild. The second involves being skilled at realistic imaginings. Someone with this skill, which relates to what I have elsewhere referred to as the *instructive use* of imagination, is very good at constraining their imaginings to fit the facts of the world. What's of interest to us here is this second type of imaginative skill.

Some imaginers who are particularly skilled in this second sense can do various design tasks in their imagination that others of us cannot do even equipped with computers, drawing tools, and physical models. Consider the inventor Nikola Tesla, who could design complex circuitry in his mind without ever putting pen to paper. As Tesla describes his design process:

Before I put a sketch on paper, the whole idea is worked out mentally. In my mind, I change the construction, make improvements, and even operate the device. Without ever having drawn a sketch, I can give the measurement of all parts to workmen, and when completed these parts will fit, just as certainly as though I had made accurate drawings. (Tesla 1921)

Or consider the animal scientist Temple Grandin, who developed more humane forms of animal handling equipment by taking what she called a "cow's eye view" of the situation and then running imaginative simulations in her mind. As she puts it:

⁶ Thanks to Lloyd Humberstone for encouraging me to draw this distinction.

Now, in my work, before I attempt any construction, I test-run the equipment in my imagination. I visualize my designs being used in every possible situation, with different sizes and breeds of cattle and in different weather conditions. Doing this enables me to correct mistakes prior to construction. (Grandin 1995, 20-21)

Grandin's designs were so innovatively different from the designs previously in use that animal handlers were deeply skeptical that they would work, even when they saw the detailed plans for the equipment all drawn out. But such designs, once properly built, worked exactly as Grandin had predicted.⁷

Or, for just one more example, consider the master origami folder Satoshi Kamiya. In 2006, Kamiya produced "what is considered the pinnacle of the field, an eight-inch tall Eastern dragon with eyes, teeth, a curly tongue, sinuous whiskers, a barbed tail, and a thousand overlapping scales." (Kahn 2006, 60) Just the folding process itself took over 40 hours. Unlike other origamists, however, Kamiya produces his creations without the help of any software or computer aid. When asked how he can achieve such elaborate design without digital assistance, a feat that seems almost incomprehensible to his competitors, Kamiya's answer indicates the importance of imagination: "I see it finished. And then... I unfold it. In my mind. One piece at a time." (Kahn 2006, 63)⁸

Above I was focusing on the possibility of knowing what romantic love is like even if one has never experienced it, and I think a plausible case can be made that someone can achieve such knowledge by way of imaginative scaffolding. The fact that not everyone can do it doesn't mean that no one can. In my view, we have no reason to think that things should be any different with respect to parental love.

Let's pause for a moment to consider how much people actually try to imagine parental love, prior to becoming parents themselves. How much do they work at it? In my own case, I have to confess, the answer was: not very much. Imagining parental love was not a project that

⁷ I discuss the examples of Grandin and Tesla more fully in Kind 2018.

⁸ I first learned of Kamiya from the discussion in Grandin and Panek 2014.

I had set myself. Presumably there are some folks who set themselves this task, but I suspect many others had similar experiences to mine.⁹ I suspect that what often happens to prospective parents is something like this: Perhaps when visiting friends who have recently become parents they see evidence of the bond those friends have with their newborn, and they spend a few moments marveling at the strength of it, wondering what it might be like to feel that way for someone else. And perhaps they even try to imagine it, only to conclude minutes (or perhaps only seconds) later that it's imaginatively out of reach.

But why should we think that a few minutes (let alone a few seconds) of effort are enough. Were we to draw this sort of conclusion with respect to other skills it would simply be laughable. And we do laugh, when, after just two or three tries at something a stubborn five-year-old stamps their foot and emphatically declares, "I can't do it." The amount of effort needed to acquire a new skill is often quite significant – and this can be so even when you have closely related skills. A few years ago, our family acquired a ping pong table, and my older son – who was already quite good at putting spin on his shots – decided he wanted to try to master a trick serve that he'd seen in a YouTube video. Eventually he just about got it – he can't do it correctly every single time, but he can usually make it work in about one of three tries. To get to this point, however, he tried out that serve hundreds and hundreds (maybe even thousands and thousands) of times. Whether it's learning to juggle a soccer ball, or to play an intricate piano piece, or to perform some sleight of hand, acquiring a skill takes practice. And this practice often takes many forms – not only engaging in multiple attempts, but also breaking the task down into smaller parts, trying slightly different related tasks, and so on.

As we noted above, being a parent is a complex experience. It's built of many parts and has a complex phenomenology. All together, these parts seem hard to reach. And even when we try to separate the parts, they still may seem hard to reach. But just as we acquire other skills by breaking them down into smaller parts, here we need to do the same thing, latching

⁹ When I've presented this paper to various audiences, there are occasionally members of the audience who claim that they did seriously set themselves this task. Interestingly, however, in each such case, however, the person claimed that their advance imaginings got things pretty much right – in other words, the experience of parental love turned out to be pretty much what they had imagined prior to becoming parents.

onto the little bits that we can, here and there, and then scaffolding our way onwards and upwards from there.

Indeed, this might make us rethink what we earlier said about tasting a durian. Above I said that it could plausibly be seen as a fundamentally new kind of experience. But even tasting a durian is a complex experience of sorts, and so perhaps it too can be broken down into smaller parts, each of which might be individually reachable by way of imagination, working – as Nagel said – to imaginatively add, subtract, and modify from experiences that we’ve already had. One of the things that makes skilled imaginers better than unskilled imaginers is their ability to make these imaginative additions, subtractions, and modifications. The discussion in the previous part of the paper suggested that it’s a lot harder than it might initially seem to cordon off a class of experiences that are fundamentally or radically new in the sense that Paul is interested in. I’ve now suggested that even experiences that seemed clearly to fall into such a class may indeed be imaginatively accessible, at least by skilled imaginers. Once we attend more carefully to what can and cannot be done with imagination, it turns out that considerably fewer experiences remain imaginatively out of reach than proponents of transformative experience would have us believe.

V. Back to Mary

But here we might think that one kind of example remains – and indeed, it’s the one with which we began, that of Ordinary Mary. Mary’s experience of seeing red for the first time seems unreachable in a certain way that these other kinds of experiences don’t. And perhaps something similar could be said for experiences in new sensory modalities – as when a deaf person hears for the first time by way of a cochlear implant, or when (in a near or distant future) new technologies enable us to acquire electric or magnetic senses. Even if we can imagine parental love, in other words, it seems unlikely that we can imagine having an electromagnetic sense. Though I feel the pull of this assessment, in this closing section, I want to briefly see whether we can put pressure on it, i.e., to explore whether even this conclusion might be unfair to imagination. I don’t have the space here to develop this argument at any

length (though see Kind forthcoming), but let me make at least a start on trying to see whether and to what extent we can erode the difference between the Mary case and the other kinds of cases that we've been considering.

Here it will be helpful to consider an example that Paul Churchland offers in his own discussion of the Mary case, namely that of sightreading music. Many skilled musicians can sightread scores they've never heard before, i.e., even without hearing such scores, these trained musicians know what they would sound like when played. Extending this kind of example, Churchland notes that musicians with sufficient training can identify the individual notes of a chord they're hearing for the first time, and conversely, can auditorily imagine an unfamiliar chord from the specification of the notes. Such imaginative feats are possible in virtue of the fact that chords are structured sets of elements, i.e., in virtue of the fact that even new and unfamiliar musical experiences of chords are not that distant.

So now why should we think that color experiences are any different? The reason seems to be that color experiences, unlike chord experiences, seem to us to be undifferentiated wholes. But, as Churchland notes, many untrained listeners typically experience chords as undifferentiated wholes on first hearing them. So, asks Churchland, "Why should it be unthinkable that sensations of color possess a comparable internal structure, unnoticed so far, but awaiting our determined and informed introspection?" (1985, 26-7) If color sensations are likewise structured, then new and unfamiliar color experiences would be considerably less inaccessible to us, i.e., they'd be much easier to reach by way of imaginative scaffolding. The reason that we take color experiences to be imaginatively inaccessible to Mary is that there seems to be no way to get to them from the kinds of experiences she has. If color experience is structured, however – and in particular, if it has some kind of phenomenal structure – then that structure could provide a way for Mary to scaffold out from the experiences she has to those that she hasn't. In doing so, this imaginative scaffolding could, in principle, help to teach her what seeing color is like.

There are a lot of 'ifs' here, and so I don't take this discussion to have shown that Mary can imagine these things. Maybe she can't, even in principle. But importantly, even if

knowledge of color experience is epistemically out of reach to her while she's in her black and white room, it will still be true that the Mary case remains an exception. More importantly, for the purposes of Paul's overarching project – one about the rationality of transformative choice – it's not a particularly interesting exception. What makes Paul's arguments in *Transformative Experience* so threatening is that they seem to show that we are unable to make rational choices in a vast array of the major decisions we face in everyday life. If, however, the problem is limited to cases that are analogous to the Mary case, much of the threat is dissipated. By focusing on the case of parental love, I have tried to show that many of the examples on which Paul relies are not analogous to the Mary case, i.e., they are not plausible cases of epistemically transformative experiences in the way that Paul thinks. Perhaps there are some epistemically transformative experiences – some experiences that are out of reach to us in advance, even imaginatively – but such experiences would seem to be considerably less common than we were led to believe, and they do not seem to be the kinds of experiences that matter for most of our everyday decision-making. Ultimately, then, though it may be right that experience is the best teacher, as Lewis said in the passage with which we began, I hope here to have shown how in a vast array of the cases that Paul considers imagination can come in a close second.¹⁰

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