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11. Child Pornography in the Digital Age

A Conceptual Muddle

Introduction

New technologies present numerous ethical issues: from their design to their adoption to the unpredictability of the effect they have on society.¹ Often previous laws and moral principles are completely adequate for dealing with these issues. For example, using a computer to steal money from someone else's bank account is a simple case of theft. The use of a computer might change the difficulty of catching perpetrators or the amount that can be stolen, but nothing of conceptual or normative significance is changed. However, computer technologies can afford us opportunities and abilities we did not previously possess.² Thus, as James Moor discusses, new technologies often give rise to "policy vacuums" because "either no policies for conduct in these situations exist or existing policies seem inadequate."³ A central task of computer ethics is therefore to help "formulate and justify new policies (laws, rules, and customs) for acting in these new kinds of situations."⁴

However, formulating new policies is not always a straightforward matter because along with a policy vacuum, there can also be "conceptual muddles." These conceptual muddles arise because "the concepts that we bring to a situation involving policy vacuums may not provide a unique understanding of the situa-

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- 1 See Philip Brey, "Method in Computer Ethics: Towards a Multi-Level Interdisciplinary Approach," *Ethics and Information Technology* 2 (2000): 125–29, <https://doi.org/10.1023/A:1010076000182>; James H. Moor, "Why We Need Better Ethics for Emerging Technologies," *Ethics and Information Technology* 7, no. 3 (2005): 111–119; Langdon Winner, "Do Artifacts Have Politics?," *Technology and the Future* 109, no. 1 (2003): 148–164.
 - 2 For more on the radical implications that technologies change to the "very nature of human action" has for our ethics, see Hans Jonas's seminal paper "Technology and Responsibility," in *Readings in the Philosophy of Technology* (Rowan & Littlefield Publishers, Inc., 2004), 231–243.
 - 3 James H. Moor, "What Is Computer Ethics?," *Metaphilosophy* 16, no. 4 (1985): 266.
 - 4 Moor, "Why We Need Better Ethics for Emerging Technologies," 115.

tion. The situation may have analogies with different and competing traditional situations.”⁵ Furthermore, these technological developments might change the very concepts themselves. It is therefore important to understand these conceptual muddles in order to give principled and comprehensive answers to policy questions.

For example, suppose we want to protect computer programs. First, we have to consider what a computer program is:

Is it really intellectual property which can be owned or is it more like an idea, an algorithm, which is not owned by anybody? If a computer program is intellectual property, is it an *expression* of an idea that is owned (traditionally protectable by copyright) or is it a *process* that is owned (traditionally protectable by patent)?⁶

Our answers to these kinds of questions will make a difference to the applicability of previous policies, whether we might need to construct entirely new policies and what those new policies will be.

One area where there might seem to be no difficult policy questions is child pornography. The moral and legal wrong of child pornography is often taken to be self-evident. This explains why it has received far less attention in academic discussions than adult pornography, the wrongs of which are taken to be much more controversial. However, technological developments in the digital age require us to reconsider the moral and legal status of child pornography.

The world of child pornography has undergone many changes since the advent of digital technologies. These include the possibility of producing better quality images; the ease with which these images can be exchanged, instantaneously, across the world; the expanded connectivity of people willing to exchange such images; the ease of replicating these images without a loss of resolution (a marked difference from the age of analogue photography and negatives); the anonymity that protects the consumer; the sophistication of software to cover one’s tracks; and new ways of copying and organizing material electronically and of destroying it, amongst others.⁷

Often all that is needed to address these changes is an extension of previous policies. For example, child pornography used to be sent from one person to another through the mail; now it can be sent via email. The reasons that we might

5 Moor, 115.

6 Moor, “What Is Computer Ethics?,” 267. Original emphasis.

7 For further discussion, see Max Taylor and Ethel Quayle, *Child Pornography: An Internet Crime* (Brunner-Routledge, 2003), 163–170.

object to physical mail communication services being used in this way will most likely apply to electronic mail communication services.⁸

Nevertheless, many technological changes present challenges to our previous conceptual framework. In this paper, I consider how digital technologies have changed the conceptual landscape by forcing us to reconsider three core concepts at the heart of the category of child pornography: (i) what it means to be an image; (ii) what it means to be an image of a child; and (iii) what it means to be a sexual image of a child. I demonstrate that we might need to radically reconceive these concepts and I point to some policy implications of doing so.

An Image

John Berger famously stated that “Seeing comes before words.”⁹ The primacy of the visual over the textual has never been truer than in our current screen-based culture. Our interaction with and exposure to images has been increasing exponentially. Pornography reflects the domination of the visual: most pornography is image-based (whether still or moving).¹⁰ The concept of an image is therefore central to understanding pornography; without it, any analysis will be anachronistic.

So: what is it to be an image? When we think of an image, it is easy to think of a photograph, physically printed out and in our hands. However, the era of negatives, analogue photography and prints is pretty much over. Almost everyone takes digital photographs and keeps them in digital form. As Oliver Grau states: “Never before has the world of images changed so fast; never before have we been exposed to so many different image forms; and never before has the way images are produced transformed so drastically.”¹¹ This transition to the digital production, storage and viewing of images has radically changed what it means for something to be an image.

8 This is in fact the basis for much of the Australian law concerning child pornography: in 2005 the Criminal Code Act 1995 was amended to include offences relating to using a *telecommunications “carriage service”* for child pornography (The original provisions, effective from 1 March 2005, were added to the Criminal Code Act 1995 by the Commonwealth Crimes Legislation Amendment (Telecommunications Offences and Other Measures) Act (No. 2) 2004).

9 John Berger, *Ways of Seeing* (Penguin Books, 1972), Front cover.

10 If you type “porn” into Google (as Gail Dines does to get a flavour of mainstream pornography), you will mainly be offered pornography in the form of digital images and movies, rather than text-based pornography (Gail Dines, *Pornland: How Porn Has Hijacked Our Sexuality* (Beacon Press, 2010), xviii.).

11 Oliver. Grau and Thomas. Veigl, *Imagery in the 21st Century* (MIT Press, 2011), 1.

Take a basic digital image: a “raster” image. This takes the form of a dot matrix that represents the smallest parts of the image as “picture elements,” i.e. “pixels.” These pixels are constituted purely by data, usually just five pieces of information. The first two pieces of information are an ordered pair of numbers (x, y) indicating the pixel’s co-ordinates on the x-axis and y-axis respectively. The next three pieces of information are an ordered triple (r, g, b) indicating the color of each pixel: a numerical representation—from 0 to 255—of the intensity of red, green and blue, respectively. Thus, each pixel could be represented as $\{(x, y), (r, g, b)\}$. A digital image is just a long list of sets of numbers of this form, which provides a “map” of how to display the pixels and where.

Imagine the following very boring image: four pixels arranged two-by-two where the bottom-right pixel and top-left pixel are white and the bottom-left and top-right are black. The image you have in mind does not exist anywhere on your computer. What is stored is the following data: $\{(0,0),(0,0,0)\}$, $\{(1,0),(255,255,255)\}$, $\{(0,1),(255,255,255)\}$, $\{(1,1),(0,0,0)\}$.¹² On demand, your computer can present you with a visual depiction of this data. This understanding of an image as purely data is clearly far removed from our original understanding of an image as a physical, visual object.

Understanding images as data has important policy implications. It might previously have been thought that there was a fundamental, *ontological* difference between photographs and other types of images. However, on the level of what is actually stored on your computer, all digital images are the same—data—whether they are photographs or another type of image altogether.

There have already been legislative responses concerning child pornography that have attempted to capture the fact that “images” are no longer something that are to be found in a box under a bed or in an album on our bookshelf, but on a computer. In Australia, for example, child pornography legislation talks of material that “depicts” certain prohibited content, where “depict” is defined as containing data from which a visual image (whether still or moving) can be generated.¹³ Similarly, UK legislation concerning child pornography has extended the term “image” to include any “data (stored by any means) which is capable of

12 More specifically, what is actually stored is in binary. This is why the intensity of red, green and blue are represented by numbers from 0 to 255: because 255 is the maximum number that can be represented by an eight-digit binary string (namely, 11111111).

13 The Criminal Code Act 1995, section 473, subsection 1. Accessed October 31, 2017. http://www.austlii.edu.au/au/legis/cth/consol_act/cca1995115/sch1.html#_Toc344981264.

conversion into an image.”¹⁴ The focus in both cases is on the *capability* of data to generate—or be converted into—a visual depiction.

Notice how broad this definition of an image is. *All* data is capable of conversion into an image. This is the principle behind data visualization methods.¹⁵ There is, of course, lots of data that we would not want to bother visualizing and often infographics is about using visualization to understand something better than we could without it. Nonetheless, all data is *capable* of being visualized. Thus, understanding an image as “data capable of being visualized” radically expands the notion of an image.

There is also a further policy implication brought about by the fact that, not only is all data capable of being visualized, the same data is capable of being visualized in radically different ways. For example, Nathan Yau, a statistician and blogger, took life expectancy data by country between 2000 and 2015 provided by the World Health Organization and used the same data to create 25 different visualizations.¹⁶ Which of Yau’s visualization is “the image” representing the underlying data? There is no answer to this question. This puts pressure on the idea that we can talk of *the* image that a data set is capable of being converted into.

Even the photograph you take on your digital camera can be rendered into different visual depictions. For example, when you view an image on your smartphone you probably view it at a lower resolution than you would on, say, your tablet. Which would be *the* image? The high resolution image or the low resolution you see on your phone? There is no clear answer to this question either.

Having an expansive notion of an image and of how data can be visualized can have advantages for law enforcement. For example, it is possible to hide an image by manipulating data. The color of each pixel is determined by the ratio between the red, green and blue values. The closer these values are to zero, the darker the image will appear. You can easily disguise an image by making it so

14 The Coroners and Justice Act 2009, section 65, subsection 2b. This governs the legislation concerning “prohibited images of children”. However a similar provision concerning data exists for the other piece of legislation on child pornography—“indecent photographs of children”—whereby the term “photograph” has been extended to include any “data stored on a computer disc or by other electronic means which is capable of conversion into a photograph” (The Criminal Justice and Public Order Act 1994, section 84 subsection 3b4b).

15 For some wonderful examples of this, see both XKCD’s “Money” (<https://xkcd.com/980/>) and also the work of David McCandless at his *Information is Beautiful* (<http://www.informationisbeautiful.net/>).

16 <http://flowingdata.com/2017/01/24/one-dataset-visualized-25-ways/>

dark as to obscure the images depicted. You simply divide the red, green and blue values of each pixel by, say, 20. This maintains the ratio between them but makes the numbers so small that the image will appear completely black. It is possible to reverse the process by multiplying the red, green and blue values for each pixel by (in this case) 20. Thus, while a file might at first appear to be completely dark and obscure (like a photograph taken with the lens cap still on), features can be *revealed*. This process is one of the simplest ways to hide an image by altering the underlying data.¹⁷

Note, however, how liberal we might then have to be in determining when two images are the same. Consider the example above. After the dividing and multiplying process you would only end up with red, green and blue values that are multiples of 20. Take a pixel in the original image. The blue value of this pixel was, say, 213: its value would be 11 in the dark image and 220 in the final image. Thus the data underlying the final visualization would therefore be radically different from the original image. So are they the same image? Do we decide on the level of data or on whether a difference can be detected by the naked human eye?

In summary, reflection on recent technological developments has revealed a conceptual muddle: the concept of “an image”—the foundation of child pornography in our hyper-visual culture—has to be revised in order to reflect the changes brought about by the digital age. While images are everywhere, all images are at base just data. There is no fundamental difference at this level between photographs and other types of images. Furthermore, since all data can be visualized, the notion of an image is now hugely expanded. Finally, we have to question whether it makes sense to talk of *the* image: when the same data is capable of conversion in to multiple visual depictions, which is *the* image? Similarly, when two images can look identical and yet represent two different data sets, are they the *same* image?

Given the expansive notion of an image in the digital age, we might hope that we can get a better grasp on the category of child pornography by understanding the two other important concepts at play: what it is for something to be an image of a child and what it is for something to be a sexual image of a child. I turn now to the former.

17 There are also much more complex forms of hiding image data in other data (a process called “steganography”).

An Image of a Child

What distinguishes child pornography from other types of pornography is that it depicts a child. However, new technologies of producing images force us to reconsider our traditional understanding of what it means to be an image of a child.

Defining a “Child”

In determining when an image is an image of a child, the first question that must be answered is when someone counts as a child; but the answer to this question is far from obvious. We might think that a child should be defined as a human being who is too young for some basic biological functions (for example, menstruation, facial hair, procreative ability, and so on). However, we might think that a child should be defined as a human being who is too young for certain social or legal functions (for example, legal responsibility, voting, marriage, entitlement to minimum wage and so on).

Part of the problem is that the notion of a child is ambiguous: it picks out a different class of people depending on the context. Legally, most countries recognize this fact. For example, the UN Convention on the Rights of the Child defines a child as “every human being below the age of eighteen years.”¹⁸ However, there is a caveat: “unless under the law applicable to the child, majority is attained earlier.”¹⁹ As this makes clear, there are often *law-specific* definitions of a child. For example, in the UK the age of criminal responsibility is as young as 10; while in many states in the U.S. the age at which you can legally drink is as old as 21.

The notion of a child is not only ambiguous, it is also vague: even with respect to a particular context, it is difficult to determine when it is appropriate to describe someone as a child. Nothing magical happens when someone turns 10 that means that they are suddenly responsible for criminal acts.

However, the difficulties or apparent arbitrariness in defining what it is to be a child should not be taken to be prohibitive. We cannot give the necessary and sufficient conditions of a car; nevertheless, we do not believe that we cannot talk about the moral and political issues surrounding the car insurance or drink-driving. Sometimes we simply need to make some stipulations. Thus, many countries

18 “The UN Convention of the Rights of the Child” (The Children’s Rights Alliance, 2010) Article 1.

19 “The UN Convention of the Rights of the Child” Article 1.

(such as Canada²⁰, Australia²¹, UK²² and US²³) follow the UN and define a child as someone under 18 years of age *for the purposes of creating child pornography*. Yet those same jurisdictions tend to have a lower age of consent to *sexual activity*: 16 years of age.²⁴ There is therefore a gap between where many Western countries draw the line for sexual activity and where they draw it for the making of sexual images. If you reject this gap, all that is at stake is whether 16 and 17 years olds can consent to pornographic images being made of them. Nevertheless, we do not have to wait for that matter to be settled to be sure that a pornographic image of a 7-year-old is an image of child pornography and that a pornographic image of a 30-year-old is not. The following discussion does not rest on drawing the line in any particular place.

Images of a Child

Once we have stipulated when someone is a child, it might seem an easy matter to determine when an image is an image of a child. It does indeed seem easy in the case of photorealistic images: if an image is photorealistic then it is a photograph and if it is a photograph, it is a photograph of a child if the person in the photograph was a child when it was taken.

However, new technologies for producing images have thrown this simple analysis into question. It is now no longer possible to tell from the photorealistic quality (or the lack thereof) of an image that appears to depict a child whether or not it is a *photograph* at all or whether it is a photograph *of an actual child*. I discuss two cases. Firstly, there are those cases where the image looks like it was hand-drawn and yet does have a relationship to actual children. Secondly, there are those cases where the image is photorealistic and yet has no relationship to actual children.

20 Penal Code Section 163, see Margaret A. (ECPAT) Healy, "Child Pornography: An International Perspective" (Sweeden, 1997), <http://www.crime-research.org/articles/536/>.

21 Criminal Code Act 1995, section 473, subsection 1, http://www.austlii.edu.au/au/legis/cth/consol_act/cca1995115/sch1.html#_Toc344981238

22 The Sexual Offences Act 2003, Chapter 42, Part 1, Subsection 42.2

23 Child Pornography Prevention Act 1996, section 2252 and 2256, see Healy. I take "minor" here to be an equivalent legal term to "child."

24 Canada: Tackling Violent Crime Act 2008; Australia: Criminal Code Act 1995, Section 272; UK: The Sexual Offences Act 2003, sections 9–13; US: the age of consent in the US varies by State but the most common is 16 years of age, <https://www.age-of-consent.info/>.

First, let us take the case of making photographs look unphotorealistic. It is now extremely easy to make photographs of children appear hand-drawn or cartoons. Most image apps or software can cartoonify an existing photograph²⁵ or even apply a filter as the image is being taken.²⁶ It is therefore possible to create an image that is unphotorealistic and yet has a relationship to an actual person in the way that a photograph does. Thus, it is not possible to tell by looking at an image that appears to be a cartoon or hand-drawn whether or not it has any relationship to existing people.

Not only is it not possible to say of a non-photorealistic image that it bears no relationship to real children, it is not possible to say of a photorealistic image of a child that it *does* bear a relationship to real children.

Take the popular category of “barely legal” pornography. The name itself declares that the actual individuals depicted are overage and yet at the same time emphasizes that they *look like they are underage*. It therefore plays on the difficulty of determining whether photorealistic images are of overage or underage individuals. Some images—even photographs—can therefore look like they are images of children and yet involve no children.

It is possible to create photorealistic images that look like they are of children despite not using any children without any technological intervention, by for example using the natural youthful physique of a technically overage person. Nevertheless, technological developments have provided new methods of increasing the number, type and extent of childlike properties represented. Previously it was possible to make an 18-year-old look like a 16- or even 15-year-old. However, it is now possible to make a post-pubescent 18-year-old look like a *pre*-pubescent 10-year-old: hips can be narrowed, breasts and pubic hair air-brushed out, and so on. Doctoring images of overage persons also allows the placement of cultural and contextual markers of childhood: adding clothing to suggest the person is still in school, bows in the hair to suggest prepubescence, or childhood objects such as toys. These techniques give the producers the ability to create images that give the impression of a child without any child being involved.

Furthermore, it is also possible to create images that have the same photorealistic quality as photographs and yet lack *any* relationship to real people, whether over- or underage. The easiest way to create photorealistic imaginary images is to

25 For example, *Camera Filters!*

26 For example, *MSQRD* has live face-tracking and pre-production filter applications.

use CGI (Computer Generated Imagery).²⁷ We are all familiar with the use of this technique in creating films, such as in *Lord of the Rings*. However, it can also be used to create stills. To do so, you take a three-dimensional model of an object or person, augment it to include color and texture, illuminate it with a virtual light source, and then render it through a virtual camera to end up with an image that can look like a photograph.

Software is widely available that allows people to create photorealistic computer generated images. For example, “Poser” is a CGI rendering software that allows users to use pre-constructed 3D human figures as well as “props, scenery, lighting and cameras” in order to create rendered images or animated videos.²⁸ Poser offers high customizability while being very user-friendly and can be used to create highly realistic images and videos.²⁹ In fact, there have already been some forays into the creation of what has become known as “Poser Porn.”³⁰

When it comes to creating photorealistic pornographic images of children that involve no children in production: we have the technology. We also have the technology to make photographs of real children look as if they were hand-drawn, imaginary images. Thus, it is now no longer possible to be sure of the genesis of an image—and thus the relationship to a real child—from the image itself.

Our inability to distinguish images in terms of their genesis from their appearance has policy implications in terms of the epistemological and legal burden on both consumers and on law enforcement. It is too easy for the consumer to be misled or simply wrong about whether or not the image they are viewing is documentation of child abuse or a fictional construction. Similarly, it will often be impossible for the police to tell the difference. This has become a concern in

27 It is also possible to create photorealistic images through digital painting, whereby the user builds up a digital image in the same way a traditional painter does on a canvas. This process is getting easier and some painted images are extraordinary in their level of detail and realism (see, for example, <http://design.tutsplus.com/tutorials/create-a-photo-realistic-digital-painting-in-photoshop--psd-18156>). However, even now, this process takes a lot of time and artistic and technical skill, especially in the creation of photorealistic images and is therefore much less common than CGI.

28 <http://my.smithmicro.com/poser-3d-animation-software.html>

29 For example, Poser has been used to create a (deceptively real) animation of someone belly-dancing (<https://www.youtube.com/watch?v=MmQIzNmX-0Q>).

30 The main difficulty in making photorealistic CGI imagery is the development of the underlying 3D models (especially animatable/moveable models). However, pornographic models are becoming increasingly available and customisable on sites such as *Renderotica* (NSFW). For some of the advantages and appeal of CGI pornography, see http://www.thefullwiki.org/Poser_porn

the US, given the current position according to which the burden is on the police to prove that the image has a connection to a real child.³¹

The law in the UK has responded to the issue of the indistinguishability of images by being highly inclusive. Legislation places “pseudo-photographs” and “tracings” in the same category as photographic child pornography.³² Pseudo-photographs are any photorealistic image whether or not it is completely computer generated and whether or not it has any relationship to any existing child. “Tracings” are defined as any derivative of a photograph including actual tracings of photographs and “other forms of data”, such as the application of graphic filters. Note how radical this proposal is. For example, tracings include *tracings of pseudo-photographs*. Thus, an image may look like a cartoon and have been derived from a completely CGI’d image and yet be treated the same as photographic child pornography. Therefore, because of the pressures arising from the obscurity of the genesis of an image from its quality, an extremely diverse group of images is gathered together under the notion of a “photograph” of a child.

There is a question as to the justification of placing photorealistic images in the same category as photographs. The answer will in part depend on why we think realism is important—something that is not apparent from the UK legislation. This might have something to do with the practicalities of law enforcement. Maybe it is simply too difficult to distinguish different types of images when they are all photorealistic. Or it might be that photorealistic images give rise to feelings of disgust and therefore tap into our moralistic attitude about sexual images of children and paedophiles,³³ rather than reflecting any distinction of genuine moral importance. Alternatively, it might be because there is an underlying premise that the more realistic the depiction, the more it might encourage offending against children. Which is the correct explanation will make a difference to what policies we think ought to apply.

31 Daniel S. Armagh, “Virtual Child Pornography: Criminal Conduct or Protected Speech?” *Cardozo Law Review* 23, no. 6 (2002): 1995.

32 For more, see “Indecent photographs of children” (The Protection of Children Act 1978, section 1 and The Criminal Justice Act 1988, section 160).

33 Note the important distinction between paedophiles and child molesters. The former are defined as those who have a sexual interest in children, whereas the latter are those who have committed offences with children. Thus, not all paedophiles are child molesters: someone could fantasise about having sex with children without committing any offence against them. Also not all child molesters are paedophiles: some commit sexual offences against children not because of a sexual interest but, for example, as part of a larger pattern of physical and emotional abuse.

Instead of focusing on photorealism and the genesis of an image, we could instead base our determination of when an image is an image of a child on the *reception* of the image: is it *taken to be* an image of a child?

Australian legislation governing child pornography has taken this approach: it prohibits the creation or possession any pornographic material that “depicts a person, or a representation of a person, who is, or appears to be, under 18 years of age.”³⁴ The Child Pornography Prevention Act (CPPA) 1996 in the US also tried to prohibit (amongst other things) pornographic material that is or *appears* to be of a minor engaging in sexually explicit conduct or is “advertised, promoted, presented, described, or distributed in such a manner that *conveys the impression* that the material is or contains a visual depiction of a minor engaging in sexually explicit conduct.”³⁵

But what does it mean for an image to *appear* to be of a child? Which properties must be represented (and which properties must not be) for an image to be an image of a child is difficult to specify. Take for example this piece of ASCII art³⁶:

(_/)

(=’=)

(“)^(“)

This is a representation of a rabbit. Notice however, the many ways in which it differs from a rabbit: it is not colored, it is not fluffy, and it is two-dimensional, and so on. It differs in many ways from a line-drawing of a rabbit as well as from a three-dimensional computer-generated image of a rabbit.³⁷

So what does it mean for an image to be an image of a child, once we untether this latter notion from any relation to any actually existing, particular child? Just as with the rabbit, it is hard to say what features must be included for an image to be a representation of a child. Possible candidates are: being small in height, have no mature phenotypical characteristics like breasts or pubic hair, soft or rounded features and so on. But none of these are necessary or even jointly sufficient.

34 The Criminal Code Act 1995, section 473, subsection 1 http://www.austlii.edu.au/au/legis/cth/consol_act/cca1995115/sch1.html#_Toc344981264

35 Child Pornography Prevention Act 1996, section 2252A. Emphasis added. Interestingly, these were exactly the parts that were later overturned.

36 This example comes from the Stanford article on digital art <https://plato.stanford.edu/entries/digital-art/>.

37 To see some of the variety of images that are representations of rabbits, do an image search for “abstract rabbit.” There is a surprising amount of cubist art depicting rabbits.

Furthermore, consider an image that has many of these childlike features but also has many *unchildlike* features. It is easy to create such an image using the technologies for doctoring and creating images discussed above. It is possible to add elements, like breasts, to make the person depicted appear more adult. It is also possible to add non-human elements, for example to make an image of a fairy, centaur or satyr.³⁸ These hybrids are not human: no human has wings or the legs of a goat or a horse. Thus, images of hybrids cannot be depictions of a human child. Nevertheless, these images also have some humanlike qualities and can be made to look relatively childlike. It is easy to see how this situation generates something akin to a sorites paradox: if we take an image of a child and add a tail it seems like we still have an image of a child; but if we take a wooden box and add to it childlike feet³⁹ that does not seem to be an image of a child. So is the upper body being humanoid more important than the torso or legs and feet? Does it matter what the other part of the hybrid is (animate/inanimate, biological/mechanical, earthly/alien)?

These are not easy questions to answer. UK law has tried to address some of these issues by stating that an image is (or should be treated as) an image of a child if the “predominant impression” conveyed is that the person shown is a child despite the fact that some of the physical characteristics shown are not those of a child.⁴⁰ This statement clearly allows some of the attributes to be adult, fictitious or fantastical. However, this pushes the issue back onto when the predominant impression conveyed by an image is that of a child and, importantly, *who* gets to decide. Again the UK tries to give guidance. Interestingly, in *R v LAND* (1997), the Court of Appeal of the UK held that a jury is as well placed as an expert (for example, a paediatrician) to assess whether the person depicted is a child.⁴¹ However, this means that whether an image is an image of a child is guided by something akin to the famous statement of a US judge about all pornography: “I know it when I see it.”⁴² If this was considered an unsatisfactory account of pornography, we must consider whether it is a good policy for assessing whether an image is an image of a child.

38 There are also hybrids—common in mythology from all over the world—that have humanlike faces, or humanlike torsos or legs. For a fascinating list, grouped morphologically, see https://en.wikipedia.org/wiki/List_of_hybrid_creatures_in_mythology.

39 Something like the Luggage who accompanies the wizard Rincewind in Terry Pratchett’s *Discworld* series, for example in *The Colour of Magic*.

40 The Coroners and Justice Act 2009, section 65a-b.

41 Paul Vella, “Understanding Computer Evidence” (Evidence Matters, n.d.), 15, <http://www.lgis.co.uk/img/evidence.pdf>. See *R v Land* (1998) 1 Cr. App. R. 301

42 Justice Stewart in *Jacobellis v. Ohio* 378 US 184 (1964).

New technologies for doctoring and creating images has left the notion of an image of a child a conceptual muddle. We can create photorealistic images of imaginary children and we can disguise photographs of actual children as cartoons. Given the divorce between the presentation of the image and its origins (its means of production and its relation to a real child), a conceptual shift has moved the focus of what it means for something to be an image of a child from the genesis of that image to viewer interpretation and judgement. However, this forces us to consider which properties an image must have (and which they must lack) in order to be a realistic representation of a child. The best that seems possible to say is that the viewer must decide. This move towards the reception of the image is important for another concept central to the notion of child pornography: what it is to be a sexual image of a child.

A Sexual Image of a Child

Content

Given that sexual imagery is clearly central to our understanding of the very notion of child pornography, the next core question that must be discussed is: what counts as a sexual image of a child?

One simple answer is that an image of a child is sexual if the *content* of it is sexual. When it comes to sexual content and children, there is a popular thought that any sexual activity involving children must constitute child sexual abuse. This is evidenced by the fact that there has been a move to call sexual images of children “child abuse images”⁴³ or “images of sexual abuse”⁴⁴ rather than child pornography. These terms, it is argued, highlight the real wrong of these images and thus express unambiguously “the nature of child pornography.”⁴⁵ This reflects an assumption that child pornography is photographic and these photographs are simply documentation of sexual abuse. The National Association for People Abused in Childhood (NAPAC), for example, recommends the media use the term “child abuse images”, stating that “all child abuse images are crime scenes.”⁴⁶

43 For example, INTERPOL (<http://www.interpol.int/News-and-media/News/2010/PR080>).

44 For example, Taylor and Quayle, *Child Pornography: An Internet Crime*, 7.

45 Taylor and Quayle, 7.

46 NAPAC, “Media Guidelines for Reporting Child Abuse,” 2016, 4.

However, defining sexual images of children as images of child sexual abuse assumes, mistakenly, that all photographs have documentary status⁴⁷ and also that all child pornography is photographic.⁴⁸ Moreover, it overlooks the fact that many photographic images of children can depict sexual elements or activity without depicting sexual abuse. This is reflected in scales that classify individual pictures and collections of child pornography: images of children can be classed as sexual when they depict nudity, explicit posing, explicit sexual activity of an individual child or explicit sexual activity between two children, none of which are depictions of child sexual abuse.⁴⁹

That sexual images of children do not necessarily depict child sexual abuse is further reflected in legal distinctions between indecency and obscenity.

Both the UK and the US prohibit obscene material.⁵⁰ Under both definitions, images of child sexual abuse would generally count as obscene. However, both jurisdictions also allow that an image can constitute child pornography even if it is not obscene. In the UK, for example, the 1978 Protection of Children Act stated that prohibited sexual photographs of children do not have to meet the criteria for obscenity but need only be indecent to be prohibited.⁵¹ Thus, photographs of

47 For further discussion of the crisis of the documentary status of photographs, see for example Erika Balsom and Hila Peleg, eds., *Documentary Across Disciplines* (MIT Press, 2016); Nea Ehrlich, "Animated Documentaries: Aesthetics, Politics and Viewer Engagement," in *Pervasive Animation*, ed. Suzanne Buchan (Routledge, 2013), 248–71; Nea Ehrlich, "Animated Documentaries as Masking," *Animation Studies Online Journal* 6 (2011), <https://journal.animationstudies.org/nea-ehrich-animated-documentaries-as-masking/>.

48 Which we have already seen need not be so.

49 See, for example, the COPINE scale, a comprehensive typology of child pornography for grading of both individual pictures and serial child pornography pictures developed by COPINE ("Combating Paedophile Information Networks in Europe") (Max Taylor, Gemma Holland, and Ethel Quayle, "Typology of Paedophile Picture Collections," *The Police Journal* 74 (2001): 101.) and also the UK's Sentencing Advisory Panel Scale (SAP scale) (R v. Oliver (2002) EWCA Crim 2766 in the UK. The case summary can be found at http://www.inquisition21.com/pca_1978/reference/oliver2002.html).

50 For the UK, see the Obscene Publications Act 1959, section 1, subsection 1 as well as the addition made in 1964. For the US, see *Miller v. California*, (1973) 413 U.S. 15, 26. See also Ronald W. Adelman, "The Constitutionality of Congressional Efforts to Ban Computer-Generated Child Pornography: A First Amendment Assessment of S. 1237, 14 J.," *The John Marshall Journal of Information Technology & Privacy Law* 14, no. 3 *Journal of Computer & Information Law* (1996): 483–492.

51 The Protection of Children Act, section 1.

young children's genitalia or of two 16-year-olds having sex, for example, would be prohibited, despite not constituting child sexual abuse.

Similarly, in the US, the ruling in *New York v. Ferber* upheld the New York statute that prohibited "persons from knowingly promoting sexual performances by minors by distributing materials that depict such performances, even if the materials were not legally obscene."⁵² The material that gave rise to this case were films of young boys masturbating. These images did not depict child sexual abuse and failed to meet the standard for obscenity. However, there was interest in prohibiting this material because it contained sexual images of children.

Thus, the notion of a sexual image of a child cannot be reduced to images depicting child sexual abuse. The question of whether it is morally acceptable to produce an image is not settled just because it was morally acceptable to perform the act depicted.

While there has been a move to consider all child pornography to images of child abuse, the opposite move has also been made in some Australian jurisdictions: to see all images of child abuse—whether sexual or not—as child pornography. For example, many states and territories in Australia include as child pornography any material that depicts, describes or represents a child being subjected to torture, cruelty or abuse *whether or not in a sexual context*.⁵³

Moreover, most Australian jurisdictions also have a child pornography offence of breaching someone's privacy *whether or not these breaches are explicitly sexual*. These "upskirting"⁵⁴ offences involve "the unlawful recording of another person's anal or genital region (whether covered with underwear or not) and offences in-

52 Debra D. Burke, "The Criminalization of Virtual Child Pornography: A Constitutional Question," *Harvard Journal on Legislation* 34 (1997): 439–473.

53 Namely, New South Wales (Crimes Act 1900), Northern Territory (Criminal Code Act 1983), Queensland (Criminal Code Act 1899), Tasmania (Criminal Code Act 1924), and Western Australia (The Criminal Code Act Compilation Act 1913) (from Hayley Boxall, "Brief Review of Contemporary Sexual Offence and Child Sexual Abuse Legislation in Australia" (Australia: Australian Institute of Criminology, 2014), 46–47.) In a similar spirit Southern Australia (Criminal Law Consolidation Act 1935) includes under its definition of child pornography images describe or depict a child and are (apparently) intended to excite or gratify a sadistic or other perverted interest in violence or cruelty (Boxall, 46.).

54 "Upskirting" involves taking a photograph (usually on a mobile device) of another person under their clothes of their pubic area and buttocks (though it may also include taking photographs of someone's breasts down their top). For more, see "Discussion Paper: Unauthorised Photographs on the Internet and Ancillary Privacy Issues" (Australia: Standing Committee of Attorneys-General, August 2005), <https://justice>.

volving the recording of persons without their consent in situations where they would expect to have privacy.”⁵⁵ It is thereby prohibited to produce images of “private acts” including of intimate bodily functions such as using a toilet, despite the fact that this is not, for most people, a sexual act.⁵⁶

The Australian approach—of including as pornography images whose content is not sexual by most people’s standards—demonstrates the important *subjective* element in determining when an image is a sexual image of a child. Appealing to what an “average person” would find sexually arousing cannot help us define what a sexual image of a child is because, presumably, the average person would *not* find a naked image of a child sexually arousing. Nevertheless, defining child pornography as that which paedophiles find arousing also has its problems: as famously noted, some paedophiles may be aroused by the Sears catalogue (the mail-order catalogue of a large American department store that has clothing for children) or “Leave it to Beaver” (a very wholesome family comedy) but we would not want to classify these as child pornography.⁵⁷

The problem of subjectivity besets any definition of pornography that caters to fetishes and paraphilias, which are by definition atypical. Take Nancy Bauer’s example of those who are “sexually excited by the sound of balloons popping (and those who find these people disgusting because they think that what’s sexy about balloons is blowing them up to just before the popping point).”⁵⁸ Are images of balloons being blown up pornography? They are not for those of us who do not have this particular fetish but they are for those who do.

What can help to bridge the gap between the subjective and objective elements of child pornography is the notion of context. I now show that technology has expanded the importance of—and what counts as—context.

nt.gov.au/attorney-general-and-justice/law/discussion-papers/discussion-paper-unauthorised-photographs-on-the-internet-and-ancillary-privacy-issues.

55 Boxall, “Brief Review of Contemporary Sexual Offence and Child Sexual Abuse Legislation in Australia,” 45.

56 “Discussion Paper: Unauthorised Photographs on the Internet and Ancillary Privacy Issues.”

57 “Effect of Pornography on Women and Children: Hearings Before the Subcommittee on Juvenile Justice of the Senate Committee on the Judiciary,” 1984, 36, <https://babel.hathitrust.org/cgi/pt?id=uiug.30112037877567>.

58 Nancy Bauer, *How to Do Things with Pornography* (Cambridge, Mass.: Harvard University Press, 2015), 8.

Context

A sexual image of a child need not depict child sexual abuse. Nevertheless, you might think that a sexual image of a child does need to depict a child in a sexualized way. However, this need not be the case.

In UK law, for example, the content of the rest of the photograph constitutes the context that determines whether an image is a sexual image of a child. An image can be prohibited if it is pornographic and depicts a child, whether or not the child itself is depicted in a pornographic manner.⁵⁹ Thus, an image is prohibited if it depicts sexual acts being carried out *in the presence of a child*.

An image of a child can therefore be sexualized by putting it in a sexual context: for example, by compositing—roughly, cutting and pasting—it with a second, pornographic, image. This method could be used to create a still image or to make a movie, such as the one found in the cell of Lenny Lawson (convicted rapist and murderer), which contained images from *Sesame Street* spliced together with pornography.⁶⁰ The images from *Sesame Street* did not, however, have any inherently sexual content. Rather, the film contained sexual images of children because of the *conjunction* of images of children and sexual images. Thus, the images of children were sexualized because of the context in which they were placed.

An image of a child can also be sexualized by putting it in a *collection* that contains pornographic images. It is important to understand collections in order to understand paedophilia and child molestation. As Taylor and Quayle argue in their sociological study on child pornography, “Collections of child pornography are not accidental: they result from deliberate choices by an individual to acquire sexual material.”⁶¹ There are many reasons to be concerned by collections of child pornography. What is of interest here is that these collections provide a context that can give a significance to individual images over and above their content.

Take a photograph of a naked child. In a family photograph album this image is not problematic; nor is it problematic in a *National Geographic* piece on a community that traditionally does not wear clothes. However, in a collection

59 This is true on both acts governing child pornography: “indecent photographs of children” (The Protection of Children Act, section 1 and 7.3. See also http://www.cps.gov.uk/legal/h_to_k/indecent_images_of_children/) as well as “prohibited images of children” (The Coroners and Justice Act, section 62. See also http://www.cps.gov.uk/legal/p_to_r/prohibited_images_of_children/).

60 Tony Krone, “A Typology of Online Child Pornography Offending,” July 2004, 2, <http://www.aic.gov.au>.

61 Taylor, Holland, and Quayle, “Typology of Paedophile Picture Collections,” 99.

of pornographic photographs of the same child,⁶² or in a collection of hard-core adult pornography, this image might constitute child pornography.

The digital storage of images and collections (on computers or online) allows for additional sources of contextual information to accompany an image. If an image of a child is on a website, one important piece of contextual information is whether the other images posted on the same website are pornographic. There is also all the other information that accompanies a website, such as the name of the website itself. If the image of a child is hosted on a website called hotyoung-kidsxxx.com, that provides part of the context of that image, just as the other images displayed do.

There is also a wealth of digital information that accompanies the image itself: metadata. This can include, for example, the title the image is given, the name of the creator of the image and, importantly, keywords, tags, captions and comments. There is also the other information associated with the image, such as the mouseover text: the graphical control element—often a text box—that activates when a viewer “hovers” their mouse over the image. Mouseover text can provide information about the nature or content of the image. Finally, the image might be accompanied by a hyperlink, i.e. a link to a website that a viewer is taken to if they click on the image. Hyperlinks provide two further pieces of relevant contextual information: (1) the name of the hyperlink and (2) the website it is linked to. Interestingly, in Australian legislation on prohibited content, the name the hyperlink has can be taken into consideration: if it says, for example, “sex with boys pics” then the Classification Board could mark it as prohibited content; however, if it just said “more pics” and linked to an offensive website, then it couldn’t be.⁶³ Thus, there are now sources of contextual information that were not available for a printed out, analogue photograph.

Context—in its many forms—can have an important influence on whether or not an image of a child is a sexualized image. So perhaps being sexual is not a property of an image but a process: an image of a child can be sexualized. I turn now to an account of pornography that provides a theoretical framework for this idea.

The idea that an image can be pornography in one context but not in another is central to Michael Rea’s definition of pornography. Rea notes that *Life* magazine

62 For an example describing non-pornographic images taken of a child of whom many pornographic photographs were also taken, see Taylor and Quayle, *Child Pornography: An Internet Crime*, 6.

63 “Discussion Paper: Unauthorised Photographs on the Internet and Ancillary Privacy Issues.”

included a photograph of Marilyn Monroe naked.⁶⁴ He states that while this image was not pornographic when published in *Life* it would have been had it been published in *Hustler*. He constructs his account of pornography to deal with this very phenomenon, which I will call “pornographication.” His definition of pornography contains two parts. First, he defines what it is for some material to be treated as pornography by an individual. The details of this part of the proposal are not important for our purposes; a commonsensical understanding of “treating as pornography” will do. What is important is the second part, which defines some material, *x*, as pornography when “it is reasonable to believe that *x* will be used (or treated) as pornography by most of the audience for which it was produced.”⁶⁵

Rea’s definition of pornography was intended to apply to adult pornography. Nevertheless, it can illuminate our understanding of what it means to be a sexual image of a child. The context an image is placed in can change whether it is pornography because the context can change whether most of the audience can be expected to *treat it as pornography*. If an image of a child is in a paedophile’s collection of child pornography, or spliced in a video with pornographic images, or on a website that links to pornographic websites, it is reasonable to assume that viewers will be *treating that image as pornography*, no matter then content of the image itself.

The role of context also has many implications for policy. Firstly, there is the worry that allowing context to play such a vital role in defining pornography will make our definition too subjective. It allows that any image could be “pornographed.” This concern explains some of the moral panic concerning naked images of children. The photographs of professional photographic artists such as David Hamilton,⁶⁶ Jock Sturges⁶⁷ and Sally Mann⁶⁸ have all been the source of great controversy precisely because it is easy to see how their images could be sexualized in different contexts. Put Sally Mann’s photograph of her naked four-year-old daughter⁶⁹ on a website containing explicitly pornographic images, or on a website

64 Michael C. Rea, “What Is Pornography?” *Noûs* 35, no. 1 (2001): 118.

65 *Ibid.*, 120.

66 His *A Summer in St Tropez* and *The Age of Innocence* both attracted controversy and attempts to class them as child pornography.

67 His *The Last Days of Summer* and *Radiant Identities* were both the subject of unsuccessful attempts to be classed as child pornography in the US states of Alabama and Tennessee.

68 Her *Immediate Family* was highly controversial, containing photographs of her own three children all under the age of 10.

69 “Virginia at Four” by Mann.

known to cater to paedophiles, and it would be pornography. But then again so would any naked photograph from a family photograph album.

Secondly, we must confront the fact that the internet and digital technologies have changed not only the production of images, but also the *reproduction* of images. The same image can now be *reproduced* in the sense that it is situated in a new context. The (for want of a better word) “curators” of these images play a vital role in recontextualizing them. They can therefore be just as important as the original creator of the image might be, because it is the process of recontextualizing that can make a difference as to whether the image is treated as pornography and therefore to whether it *is* pornography in that context. While some attempts have been made to expand the notion of what it means to make an image,⁷⁰ current policies do not have a place for the role of curator or reproducer of images, who lie between the creator and the consumer.⁷¹

Conclusion

To sum up, new technologies for the production, storage and access of digital images challenge the concepts at the very heart of child pornography. Almost all images are digital and all digital images are just data. Thus, we are left with a concept of an image according to which almost anything could be an image. Furthermore, all data is capable of being visualized, in a multitude of ways, making the notion of “the image” increasingly murky.

A second core concept at the heart of child pornography—an image of a child—has also given rise to a conceptual muddle. We have the ability to make photographs of actual children look like hand-drawn images of imaginary children and to make images of imaginary children look like photographs of actual children. This means that the genesis of an image can no longer be read off from its photo-realistic appearance (or lack thereof). We must therefore look to the reception of the image to determine if it is an image of a child. However, this gives rise to the difficulty of specifying what properties an image must have (or must lack) to be a representation of a child and who gets to make that determination.

70 For example, in the UK, see The Criminal Justice and Public Order Act 1994, Section 84 subsection 2ai. It includes: downloading, printing, opening an attachment, saving an image, amongst others.

71 One way of grounding what might be wrong with the recontextualizing of images is to expand our controls over the use of our images to make pornography, *whether photographic, doctored or where we are identifiable*. I argue for this claim in my Claire Benn, “What Is Wrong with Doctored Child Pornography,” *Forthcoming*, n.d.

Finally, we have seen that we have to expand the definition of what constitutes a sexual image of a child beyond images depicting child sexual abuse. A sexual image of a child could have non-abusive content, such as nudity or masturbation. It might simply have sexual content and also depict a child. Alternatively, it might be an image of a child in a sexual context. This context could be provided by other images it is combined with in a collection or the contextual information available through the metadata of the image itself or the website on which it is hosted. Thus, the non-sexual content of the image is not enough to determine that it is not a sexual image of a child. We therefore need to examine the context in which the image occurs and the process of sexualization and pornographication that images of children can undergo.

Child pornography is a subject on which there is wide-ranging agreement between philosophers, legal scholars, sociologists and the general public. However, the advent of the digital age requires us to reconsider the concepts at the heart of the category of child pornography. What is wrong with virtual child pornography is a question not easily answered, given that the wrong of much traditional, photographic child pornography—that children had to be sexually abused to produce it—simply does not apply to many sexual images of children.⁷² In order to give a principled, comprehensive answer to the policy challenge this raises, we must consider what we mean by an image, an image of a child and a sexual image of a child. This is an area where an interdisciplinary approach is not just appropriate but essential. We need to bring together considerations from legal studies, law enforcement, sociology, aesthetics, semiology and ethics amongst others, because, as Moor so eloquently says, “Applied ethics is not simply ethics applied.”⁷³

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73 Moor, “What Is Computer Ethics?,” 267.

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