Mediatized Skill: How Capabilities With Application Software Are Collectively Performed, Perceived, and Organized as Part of Contemporary Media Practices

FRÉDÉRIK LESAGE[1]
Simon Fraser University, Canada

By combining elements from theories of media practice, genre, and mediatization, I argue that perceiving, performing, and organizing skills are interwoven with media, and such interweaving has important implications for the practical politics of contemporary media practices. In the first section, I outline a conceptual framework for investigating mediatized skills by focusing on three interrelated factors: mediation, genrefication, and mediatization. In the second section, I apply this framework to a case study of YouTubing Photoshop. Through an analysis of the findings, I show how photoshopping can be understood as a *mediatized skill* in which various capabilities are performed with tools, technologies, and symbolic content that typify a certain kind of skill and skillful actor. In the concluding discussion, I argue that paying attention to mediatized skills can not only help to better understand what capabilities are valued in media practices that involve application software but also identify alternative genres that expand and diversify *who and what digital media are for*.

Keywords: skill, media practice, genre, digital media, software, YouTube, Photoshop

To claim that someone is "skilled" at a particular practice suggests that this person demonstrates certain know-how, competence, or even virtuosity in how they perform this practice. Any understanding of skill, therefore, rests on how we perceive, and interact with, "the capabilities of particular human subjects" (Ingold, 2000, p. 315). While such a phenomenologically inflected definition of skill may seem relatively simple, it presents a complicated challenge when applied to contemporary media practices because digital media are not only used as tools for performing skills, but they also play an increasingly important role in mediating our perceptions of, and interactions with, others. As I intend to demonstrate in this article, skill in contemporary media practices is mediatized; its performance and organization are fundamentally

Frédérik Lesage: flesage@sfu.ca
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interwoven with media institutions, technologies, and symbolic content with important implications for what capabilities are recognized as part of the skill. This article is structured in two sections. In the first section, I draw from elements of practice theory, genre theory, and mediatization theory to devise a framework to conceptualize and investigate mediatized skill. In the second section, I relate a case study of YouTubing Photoshop to show how the stakes of mediatized skill are no less than the practical politics of defining *who and what digital media are for*.

Media Practices, Genres, and the Practical Politics of Mediatized Skill

All media practices constitute an "open set of practices relating to, or oriented toward, media" (Couldry, 2016, p. 34) that are embedded in social life. Skill can be defined as any type of embodied knowledge that comes from repeated patterns of action enacted through practice (Ingold, 2000), including media practices. This performative definition of skill means that it is always enacted within a specific situation through habitual performance as part of a habitus (Bourdieu, 1977; Mauss, 1935). Skill is not intrinsic to any single human being. Instead, it is collectively performed and organized as part of a cultural practice (Bourdieu, 1977; Camic, Gross, & Lamont, 2011; Knorr-Cetina, Schatzki, & Savigny, 2001; Reckwitz, 2002; Sennett, 2008, 2012) or what is sometimes referred to as communities of practice (Lave & Wenger, 1991). Skill is one of the constitutive elements of a practice (Shove, Pantzar, & Watson, 2012, pp. 44–45) and is shared among people through "the practice of learning" (Lave, 1993, p. 3). Fundamentally, a skill's existence and persistence are therefore contingent on its collective, embodied performance through practice. For example: Skillful typing as initially developed in the 19th century would not have persisted until today were it not for people collectively performing typing tasks as part of a range of media practices over the course of more than a century.

Beyond my characterization of skill as the performance of human capabilities as part of collective practices, there are at least three complicating, interrelated factors that need to be considered if we are to understand the particularities of mediatized skill in relation to media practices: mediation, genrefication, and mediatization. The first factor refers to how objects and materials mediate—how they enable and constrain—and are mediated by the performance of the skill. For example, the extent to which typing can be skillfully performed depends in no small part on the availability of standardized keyboards (Becker, 1982, p. 37; Bowker & Star, 2000, p. 35). For the purposes of this article, I define three key concepts for analyzing mediation in relation to skill: tools, technologies, and symbolic content.

Although they are not essential to the performance of all skills, tools are central to mediating skills. Tim Ingold (2000) defines a "tool" as any "thing that is contingent on how agents meaningfully convey how it extends certain capacities" (p. 321). This *processual* (Ingold, 2006) definition of tool cements human performativity as the foundation of any skill. Skill and its purposefulness are coproduced through their enactment as part of practice (Flichy & Libbrecht, 1995). Returning to the typing example, a keyboard is only a tool to the extent that it is used by someone performing a typing task. In other words: *Skilled performances generate tools*, not the other way around. Tools mediate skill only to the extent that they enable and constrain capabilities performed by an agent engaging in practice.

While technology and tools can easily be conflated, I draw from Ingold's (2000) framework to define technologies as the automation of human skill into objectified and externalized processes that push human skill to the periphery of practice, becoming "progressively disembedded from social relations" (p. 321). Defined in such a way, technologies would seem to be almost anathema to skilled performance. Some technologies, however, can serve as tools as long as the way in which they are employed through performative acts remains contingent on the agent's engagement with the technology. For example, Ingold briefly discusses the electric drill as something that both automates human skill—the repeated action of drilling—while also leaving other actions—such as the direction or speed of the drill—up to its human operator. This relational definition between technology and tool can be usefully applied to understanding how digital media enable and constrain media practices through mediation. Typing on a keyboard that is connected to a desktop computer entails working with technology in that the computer quite literally objectifies and externalizes the productive skills of highly trained human computers (Chun, 2011). From the typist's perspective, however, using a keyboard, word processing software, and a desktop computer to write an e-mail memo is also skillfully using them as tools. As this example suggests, technologies used in media practices are rarely (if ever) discrete objects. Instead, they are embedded within interdependent ensembles or infrastructures (Bowker & Star, 2000). Technology defined in such a way can extend across more than one practice, yet such circulation arguably remains subject to a "law of the irreducibility of skills" (Sigaut, 1993, p. 446), which posits that as technologies are used to automate human skill, humans develop new skills to cope with technology.

The last of the three concepts for understanding the mediation of skill is symbolic content. The most obvious type of symbolic content pertaining to a skill would be those that are *about how to* purposefully execute a particular practice like instruction manuals or tutorials. The cognitivist view—that content can serve as the basis for mediating practices as "information" or "plans"—has been the subject of considerable critique (Garfinkel, 2002; Suchman, 2007). From this critical perspective, such texts should instead be understood as post hoc rationalizations of an agent's intended purpose (Camic et al., 2011, p. 7; Flichy & Libbrecht, 1995). Skilled practice is not contained in the mind, nor within explicit instruction, but is embodied through situated performances. In this sense, texts like instruction manuals mediate practice by serving as tools for skilled performers, but only after having been intentionally grounded (Suchman, 2007; Swarts, 2004) within the localized practice. What remains missing from either the cognitivist perspective or its critique, however, is a way to understand how symbolic content can also mediate collective understandings of purpose *without* being about how to execute a particular practice.

To begin to address this last point, we turn to our second complicating factor for mediatized skill, *genrefication*, which refers to how skill is collectively performed and organized as *genres* of media practice (Knoblauch, 2012; Lievrouw, 2011; Yates & Orlikowski, 1992). Beyond their application for the study of how symbolic content is organized, genres refer to how social action is organized into "shared expectations among some group(s) of people. Genres are ways of recognizing and predicting how certain tools . . ., in certain typified—typically recurring—conditions, may be used to help participants act together purposefully" (Russell, 1997, p. 513).

This use of genre highlights the intersubjective nature of collective practice. Genres serve as institutionalized templates for practices in that they are "patterns of action that are typically expected and

performed in certain situations" (Knoblauch, 2012, p. 57) that can persist despite social and technological change. For example, the memo as a genre of organizational communication developed in the late 19th and early 20th centuries and was later adapted to include the medium of e-mail in the 1980s and 1990s (Yates & Orlikowski, 1992). Genres exist in relation to other genres rather than as distinct entities. These genre systems (Bazerman, 1994; Russell, 1997) are embedded within institutional contexts that "structure expectations about the purpose, content, participants, form, time, and location of communicative interaction among members of a community" (Yates & Orlikowski, 2002, p. 31). This relational dimension means performing and sustaining genres of practice are deeply embedded in questions of power and control (Yates, 1989). Genres not only serve as shared reference points for a community of practice but they can also be used to create and police social boundaries (Lievrouw, 2011, p. 21). Drawing on work in science and technology studies, David Beer (2013a) describes these questions of power and control as the "'practical politics' of defining genres and how their boundaries are formed through 'negotiations in action'" (p. 152). When conceptualized as part of genres of media practice, skill becomes intimately tied to such practical politics because performing skill establishes what capabilities and tools are pertinent (or not) for acting together purposefully. Skill does not determine the collective purpose, but *what counts* as skill matters as intersubjective points of reference for how a genre can be collectively performed.

Before introducing the third complicating factor, I need to further consider the spatiotemporal dimensions in which skillful practice, as conceived above, takes place. Performing skill seems to take place in a phenomenological here-and-now and face-to-face that can best be described as a condition of *simultaneity* (Couldry & Hepp, 2016, p. 161). In the case of mediation, simultaneity encompasses the spatiotemporal dimensions in which an agent performs skill with the help of tools and technologies: "The typewriter becomes tool when I type with it."

In the case of genrefication, simultaneity describes the spatiotemporal dimensions in which people encounter and perceive typically recurring capabilities that shape collective expectations for skill in relation to practice: "I see that Gillian is skilled at quickly typing memos." In this situation, I perceive the skilled agent (Gillian) performing the typing task in the here-and-now and face-to-face in a way that displays a certain capability (typing quickly) and any of the tools (for example, the keyboard and word processing software) that mediate the performance. Such skill would be imperceptible without conditions of simultaneity because "the hands of the skilled typists dance on the space of the keyboard, not on that of the page, and on the hard keys their soft fingers leave no trace at all" (Ingold, 2007, p. 148).

Turning to a different example, in the case of "I see that Gillian has written a *well-worded e-mail memo*," my perception of capability (choosing what I perceive to be effective or appropriate words for an e-mail memo) is achieved by reading the memo, my familiarity with the conventions of the genre, and attributing to its author a skilled application of these conventions, but I was not in Gillian's presence during the performance nor did I perceive the practice of typing or any of the tools that mediated the performance. This second example is important for understanding skill in relation to media practices because it demonstrates how (1) our perception of skill can be mediated by content *without being in conditions of simultaneity*, but this perception is only possible for certain capabilities (the capability to type quickly is not perceptible in this example), and (2) we can perceive skill mediated by content that isn't *about how to achieve a purposeful action* (i.e., the memo is not about how to write a well-worded e-mail memo).

Having raised the spatiotemporal question for skillfully performing media practices, I now turn to *mediatization* as the third and final factor for my framework. Mediatization describes a set of historical transformations that have led to media—their institutions, technologies, and symbolic content—playing an increasingly important role in many domains of contemporary social life because of the way they generate interconnections and interdependencies between these domains (Hepp & Krotz, 2014; Hjarvard, 2008). Couldry and Hepp (2016) have argued that this deep mediatization has had important implications for social order and specifically how we experience conditions of simultaneity with others because of the way the social world is *fundamentally interwoven with media*: "We cannot analyze the social world via a simple division between 'pure' face-to-face communication and a separate presentation of the world to us 'through' media" (Couldry & Hepp, 2016, p. 34). In light of the mediatization of contemporary practices (Couldry, 2016; Hepp, 2020; Lievrouw, 2011, pp. 8–16) however, it would seem to follow that (1) it becomes harder and rarer to perceive certain capabilities because of the shift in conditions of simultaneity, and (2) media are interwoven in the social processes for developing shared expectations and for acting together purposefully. By implication, various genres of media practice and genres of symbolic content are interwoven in ways that organize skill. *Mediatized skill*, therefore, describes how some capabilities for skillful media practice are interwoven with other media practices through collective, intersubjective exchanges that shape what constitutes collective, purposeful action.

Application Software and Mediatized Skill: A Case Study of YouTubing Photoshop

To illustrate the importance and deeper implications of mediatized skill, I now turn to a case study of Photoshop as application software and photoshopping as mediatized skill. Application software is "computing software designed to carry out a specific task other than one relating to the operation of the computer itself" (Application, n.d.). This definition covers much of the software people use in everyday life, and yet application software is rarely examined as digital media. This rarity, I would argue, is due in part to how many of the most visible and familiar subcategories of application software are reified as tools for specific genres of practice without tending to the capabilities and skills involved in using them. These subcategories include *word processing software* like Microsoft Word as tools for genres of writing or *spreadsheet software* like Microsoft Excel as a tool for genres of accounting and data management. In some cases, these brands of application software are so closely associated with their genre of practice that the former is used generically to refer to the latter: *to google* for online search or *the powerpoint presentation* for public speaking (Knoblauch, 2012). Another example of the latter is *to photoshop* for editing digital images (Photoshop, n.d.).

Similar to other application software (Fuller, 2003), Adobe Photoshop constitutes a vast collection of nested features and functions each designed to be fit-for-purpose in that each of them "has its job to do" (Sennett, 2008, p. 194) for digital imaging. Photoshop should therefore be understood as more of a *branded toolbox* than a tool: Like other brands (Lury, 2004), it establishes a set of relations between goods and services in time that includes more than the sum of its continuously growing glut of features and functions (Lesage, 2016). What I intend to show in the following case study is that understanding photoshopping as a mediatized skill allows us to move past a reified understanding of application software that is fit-for-purpose for a genre of practice (i.e., Photoshop equates to digital imaging) while taking into account how

capabilities associated with other media practices are interwoven with the performance of a skill. To achieve this, I turn to an examination of *YouTubing Photoshop*.

Participants in earlier fieldwork (Lesage & Smirnova, 2015, p. 233) on Photoshop reported frequently turning to platforms like YouTube for help to use certain functions to produce desired effects. YouTube is a commercial media platform, which I will conceptualize as both a tool and a technology. Treating YouTube as a tool and technology differs from treating it as a kind of space or "art world" (Becker, 1982) in which members of communities engage in intersubjective exchanges. While YouTube is certainly involved in the processes of mediation for "co-evolving aesthetic values, cultural forms, and creative techniques [that] are normalized via the collective activities and judgments of the creator community" (Burgess & Greene, 2018, p. 61), in this case study such processes are understood as being interwoven with other aspects of media practices rather than contained within the platform.

YouTube serves as a tool for a range of media practices in that professional and amateur creators use it to disseminate various content types to various audiences (Van Dijck, 2013, pp. 110–131), from the slickly corporate, to the homespun vernacular, and everything in between (Müller, 2009). YouTube creators and audiences include a range of communities of practice that support learning together by sharing content (Quennerstedt, 2013). One well-researched example includes the many communities of musicians who use YouTube to create and share performances as well as tips on technique (Beer, 2013b; Miller, 2011; Waldron, 2013).

YouTube is a technology in that it objectifies and externalizes processes for archiving, classifying, and tracking symbolic content produced by content creators as data (Andersen, 2018; Gehl, 2009). YouTube creators are afforded the possibility to tag their videos with metadata to make them more easily discoverable (Beer, 2013b, p. 54; Wolf, 2016), but once these data are uploaded on the platform, the way in which videos are stored, interpreted, and circulated remain relatively inaccessible to the creator. Tagging various YouTube videos with the keyword "Photoshop," for example, can not only mean different things to each video's creator, it can also be interpreted and sorted in different ways by a range of other social actors and technologies that engage with the video. Searching for a video using the keyword "Photoshop" produces millions of search results which can be further sorted according to view count, relevance, rating, and upload date using the platform's search features as part of the complex classificatory imagination (Beer, 2013a, 2013b) embedded into YouTube's design.

This last example illustrates how Photoshop can be used as a tool and technology that serves to establish and maintain a set of relations between objects in time on platforms like YouTube that has little to do with its features and functions. The question then becomes if and how these relations on YouTube can be developed into genres of media practice; that is, as a basis for engaging in intersubjective negotiations to determine what constitutes purposeful action.

To answer this question, a team of researchers[2] created a Web-based platform for aggregating metadata and analytical information for a test set of YouTube videos tagged with the keyword "Photoshop." The research team, including myself, members of Simon Fraser University's Digital Humanities Innovation Lab (DHIL), and research students trained in how to conduct qualitative coding, compiled a set of videos on April 4, 2017, based on conducting multiple searches on YouTube using the keyword "Photoshop." The searches were conducted according to four sorting criteria based on some of the main search categories afforded by YouTube's search engine feature: view count, relevance, rating, and date (supplemented by a second round of the same search with the subtitles feature included). The first 125 English-language videos that appeared in each search result were collected and any duplicates were eliminated. This produced a total of 687 videos. Using a platform designed by the DHIL, each individual video was then analyzed to create an individual profile based on its captions, keywords, and the video itself over an 18-month period by drawing from the genre typology originally developed by Yates and Orlikowski (1992, 2007): identifying each video's purpose (why), content (what), form (how), figures (who), time (when), and place (where). The project involved three coding phases, each with a different approach to the video, with the aim of getting the fullest sense of its genre elements. Over the course of this period, an additional 9% of the videos collected were excluded due to sampling criteria which resulted in a total sample of 628 videos. Profiles were then compared and thematically sorted to identify typically recurring patterns that could be associated with a particular genre.

While this research design enabled a certain degree of quantitative description and analysis (particularly with respect to proportional comparisons within and across genres, see below), my main focus in the following analysis is to describe the genres identified with a particular focus on the intended purpose typified in each genre, the typically recurring, perceptible capabilities associated with each genre, as well as any typified representations of the skilled performer.

The Tutorial

The most common genre encountered during the research was the *tutorial*. Of the 628 videos collected and analyzed for the research, the vast majority—523—were coded as "tutorials." These videos all involve someone performing a digital imaging task with Photoshop. To some extent, the formal conventions of the genre entail creating the impression of simultaneity for photoshopping. In other words, the videos in this genre are created to play *as though one is following along with a performance, watching someone photoshopping in the here-and-now*. This sense of simultaneity, however, is supplanted with a number of technical and rhetorical effects that are consistent with the successful conventional forms of YouTube instructional discourse that include zooming, panning, and scripted voiceovers (Morain & Swarts, 2012) with a steady, dispassionate narration.

Similar to other genres of technical communication (Luzon, 2005), the tutorial genre is *about how to photoshop*—its intended purpose is that the viewer uses the step-by-step instructions as a tool for

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[2] Part of a larger research project titled *Photoshop Inscriptions.* For more details, please consult the following project website: https://dhil.lib.sfu.ca/pi/. In cases where I refer to individual videos, I will use its unique research number identifier which can be used to find the video on the research platform.

achieving a certain effect or for producing a certain result using Photoshop. Below, I discuss two typically recurring elements of this genre: proceduralizing and gendering the skillful performer.
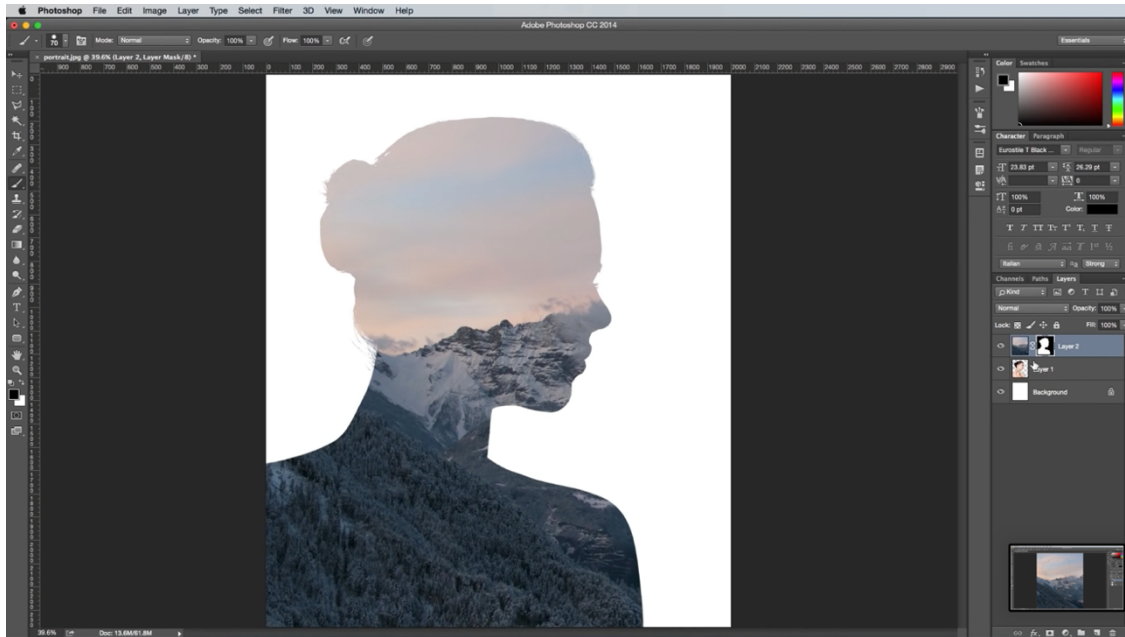

Figure 1. Screen capture from video 12 (Spoon Graphics, 2015, 2:32).

Figure 2. Screen capture from video 301 (Photoshop Tutorials, 2016, 0:10).

Photoshopping in tutorials is inscribed in step-by-step sequences that involve activating the right order of actions and technological features. Videos in this genre each focus on a specific feature (e.g., the "double-exposure effect" [Figure 1, video 12; Spoon Graphics, 2015]; the "exploding text effect" [Figure 2, video 301; Photoshop Tutorials, 2016]) or on achieving a particular effect (how to create a "frozen ice planet" [Figure 3, video 296, Blue Lightning TV Photoshop, 2013]; how to create a "flaming skull" [Figure 4, video 287; Blue Lightning TV Photoshop, 2016]). This focus privileges a procedural (Van Ittersum, 2014) approach to photoshopping. Similar to Knoblauch's (2012) analysis of how-to literature for PowerPoint presentations, the tutorial genre constitutes a *praxeology* of photoshopping, prescribing an instrumental approach to digital imaging (p. 69). However, unlike Knoblauch's (2012) analysis, the genre does not prescribe the specific situation in which this approach could or should be performed beyond sitting at a desktop or laptop computer. The tutorial genre is not exclusively dedicated to a particular profession or domain nor is it contextualized within a broader pedagogical framework. Unlike written manuals or instructional platforms like LinkedIn Learning, where collections of tutorials are thematically and sequentially ordered, audience access to tutorial genre videos is mediated and mediatized through YouTube's platform and depends on factors such as what search term(s) is used to find the video, the metadata attached to the video by its creator, and the various algorithmic priorities set by the platform itself. The closest to an attempt to connect tutorials to one another are cases when the creator's YouTube channel is advertised at the beginning or end of the video. This model is built on generating more engagement with the creator's work than a cohesive body of information or instructions. Videos found in channels such as "Phlearn," "Photoshop Training Channel," and "Blue Lightning TV" are created as a stand-alone (or occasionally two-part) tutorial. The decontextualized quality of each tutorial video makes strategic sense to facilitate using the videos as tools in a broad range of domains. Each proceduralized video can serve as a kind of "notation" (Ingold, 2007, pp. 6–39) or "plan" (Suchman, 2007) in that it affords individual viewers with a certain level of interpretive flexibility to decide *how* they wish to embed, "heal," or "repair" (Knoblauch, 2012, p. 204) the step-by-step procedure described in each video within a heterogeneous range of digital imaging practices (Lesage & Smirnova, 2015).
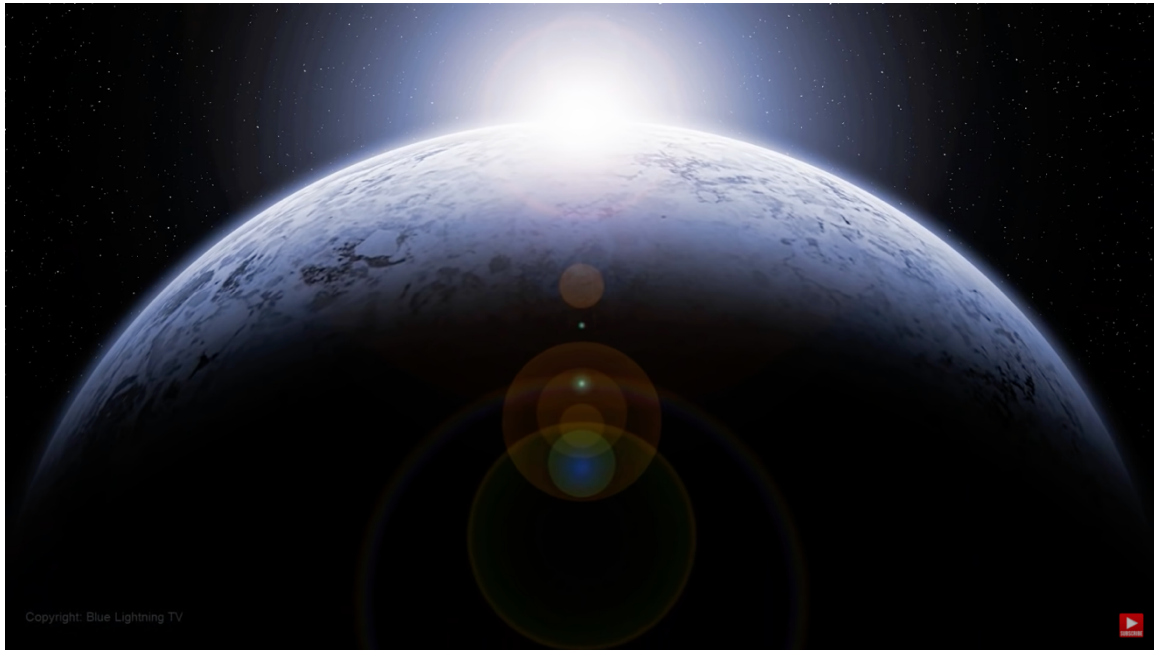
Figure 3. Screen capture from video 296 (Blue Lightning TV Photoshop, 2013, 0:14).

Figure 4. Screen capture from video 287 (Blue Lightning TV Photoshop, 2016, 0:13).

The capabilities to proceduralize and to work procedurally with the help of these videos can therefore be understood as skillful photoshopping. Although tutorials are recorded in a way that feigns some aspects of conditions of simultaneity, the viewer is able—even expected—to rewind and skip ahead as they follow-along at their own pace, using it as a tool to work through a digital imaging task.

Another significant aspect of the tutorial genre is that the skilled performer is strikingly gendered. Although it is difficult to reliably study how the photoshopper is represented in the videos, let alone their gender, it was possible to discern certain typifications. For example, much like the typist example above we rarely perceive the hands of the skilled photoshopper "dance on the space of the keyboard" (Ingold, 2007, p. 148) or see traces of their gestures in the edited images, but the photoshopper's cursor is consistently visible in the videos as it flits across the screen and shifts to various tools. The figures performing in the tutorial genre skew considerably to presenting (visually and through voice) as male (376 videos) compared with those presenting as female (24 videos) or those where gender could not be identified (123 videos). Gendering is also present to a lesser degree through the human figures used as models for the tutorials: Female figures (281 videos) are nearly a third more likely to be used than male figures (206 videos). Considering the prevalence of the tutorial genre, this gendering weaves together a certain kind of male figure with the capability to proceduralize, projecting a technicity (Dovey & Kennedy, 2007) for photoshopping that pushes other gender identities to the periphery.

Geeking Out

As I will now show, the remaining genres identified in the research are qualitatively different from the tutorial genre because the purposes of the videos are not to serve as tools for photoshopping but more straightforwardly as symbolic content. Because there are considerably fewer videos for each of these genres in comparison to tutorials, I refer to them as *alternative genres*. While the purpose of each alternative genre may be different, they each introduce other capabilities and broaden what constitutes skill and the skillful performer in their own way. "Geeking out" is the most popular of these alternative genres with 34 videos. Its name is inspired by Ito et al.'s (2010) investigation into online geek cultures where the term refers to groups of people who share videos for the purposes of entertaining or distracting each other: "Geek cred involves learning to navigate esoteric domains of knowledge and practice and being able to participate in communities that traffic in these forms of expertise" (Horst, Herr-Stephenson, & Robinson, 2010, p. 67).

This genre privileges the aesthetic and affective dimensions of performance over informational and procedural dimensions. Geeking out can involve incorporating some of the familiar conventions of the tutorial genre, but with slight alterations. For example, videos depicting the step-by-step processes for editing an image are creatively edited, either by cutting out or speeding up sections of the process, for the benefit of comedic timing, or to highlight the performer's virtuosity. Through these modifications, the capability to proceduralize in relation to skillful photoshopping remains, but its performance serves an aesthetic rather than a functional purpose. In other cases, geeking out merely involves reactions to the skill with which an image is digitally edited, implying the performer's familiarity with the conventions of digital imaging. In either case, geeking out demonstrates capabilities that are performed outside conditions of simultaneity.

There is a long history of not only meaningfully acknowledging Photoshop craftsmanship but even celebrating it. "Layer tennis" (a kind of exquisite corpse game in which a Photoshop image is sent from one player to the next to modify) and other online Photoshop-based games all involve mediatizing the creative process. Images, or successive versions of the same image, are so obviously altered as to be comical, satirical, or just impressive. Similarly, *Photoshops* are humorous or ironic images created as part of a "vernacular practice of sharing digitally altered images . . . across networks" (Peck, 2014, p. 1640).

Figure 5. Screen capture from video 426 (PewDiePie, 2015, 1:11).

Just as it emphasizes an appreciative judgement of technique over its instrumental functionality, geeking out also conveys a different identity for its performers. In cases where it is possible to see and/or hear more of the geeking-out performers than merely the trace of their cursors, their presence takes on various affective inflections that include intimacy, swagger, earnestness, ironic insouciance, or excitement. Gender, specifically male gender, becomes a less typically expected trait for those performing photoshopping. How personality is articulated through the genre is more akin to conventions used by entrepreneurial vloggers (Burgess & Greene, 2018, p. 32). In many ways, geeking out blends photoshopping with the theatricality afforded by capabilities associated with vlogging. For example, one of videos collected from PewDiePie's (2015) fabulizing series (Figure 5, video 426) involves PewDiePie, a YouTuber originally made famous for making a video of himself playing videogames, scrolling through Facebook posts, reacting and commenting on humorous or insulting photoshopped images of himself created and submitted by his fans as part of a "Photoshop competition."

Critiquing

Another alternative genre involves critiquing digital imaging by submitting digitally altered images or digital imaging practices to what, drawing from the pragmatic sociology of critique (Boltanski, 2011), I refer to as critical tests. The 22 videos associated with this genre collected during the research can be subdivided into two main types of these tests: the *Photoshop effect* and the *Photoshop fail*. The term "Photoshop effect" is taken from *Keywords in Journalism Studies* where it is defined as "the adjustment, correction or outright manipulation of digital photographic images in photojournalism, using Photoshop or related software packages" (Zelizer & Alan, 2010, p. 113).

Rather than limiting the meaning of the term to a journalistic definition that questions the reliability of an image's facticity of digital manipulation, I use the Photoshop effect to refer to any ethical or moral test concerning image manipulation. An example of such tests (Figure 6, video 555; DietHealth, 2008) includes a woman unfamiliar with digital imaging techniques having her portrait digitally edited in front of her. As the experienced photoshopper performs the work, he narrates the editing choices for her while she reacts to the alterations on camera. Similar to some examples of the geeking out genre, the capabilities of reacting and commenting are foregrounded in these performances. The second type of critical test—Photoshop fail—refers to identifying obvious, poor, or absurd traces of digital imaging work in an image. An example of this type of test (Figure 7, video 32; DOPE or NOPE, 2016) involves a vlogger-critic discussing and dissecting a series of images of celebrities or models found in magazines and advertisements.

Figure 6. Screen capture of video 555 (DietHealth, 2008, 0:49).

Figure 7. Screen capture of video 32 (DOPE or NOPE, 2016, 1:25).

While these two types of critiques were originally treated as two distinct genres in the preliminary analysis, it soon became clear that both entail critiquing digital images by drawing attention to the image's digital fabrication. As a single genre, critiquing entails revealing how photoshopping digital images constructs and reinforces certain perceptions of reality.

Suspicions of digital images and of visual culture more broadly certainly predate YouTubing Photoshop. Professionals and gatekeepers from disciplines ranging from journalism to the natural sciences to politics have warned of the dangers that digital imaging technologies pose for the veracity of photographic images since their advent (Mitchell, 1992). The purpose of the critical genre is to consider the image and its fabrication on ethical and moral grounds. It deals with phronesis; providing the viewer with a moral education (Chouliaraki, 2008, p. 837) relating to the digital image. Critiquing involves the capability to demonstrate how digital images can and should be used as "tools for identity formation" (Van Dijck, 2008).

Just as with the tutorial genre, gendering appears to play a significant, yet different, role in the critiquing genre. The gender of the typically recurring figure that performs critical tests is just as (if not more) likely to present as female (11) than as male (10). Yet the human figures portrayed in the images are four times more likely to be those of female celebrities (16) than their male counterparts (4) and more than twice as likely in the case of noncelebrity females (7) compared with noncelebrity males (3). Much of the genre focuses on how digital images create and sustain unhealthy and unrealistic images of bodies, especially those of women. In some cases, however, the outrage and indignation over these images seem to be for their exploitative (i.e., attracting more viewers) rather than edifying purposes.

Some critics seem to take pleasure in performing the tests, inviting the viewer to partake in a kind of schadenfreude, arousing indignation.

Although the capability to critique entails making judgments about digital image manipulation, the genre's purpose is not necessarily to suppress digital images or photoshopping so much as to produce statements about the digital fabrication of reality with a considerable focus on representations of the human body. It draws attention to the choices that go into creating digital images and frames these choices as questions of proper moral order and shared tastes while reinforcing its role within society.

Reviewing

Reviewing is a more difficult genre to distinguish from those described above because the videos collected (20 videos coded as reviewing) share many formal conventions found in the tutorial and critiquing genres. What emerged through the research, however, is a genre in which YouTubing Photoshop involves assessing, reviewing, and critiquing a product or service. Instead of performing critical tests like those of the critiquing genre, reviewing performs consumer tests. In some cases, the product reviewed is a version of Adobe Photoshop (Figure 8, video 363; Adobe Photoshop, 2016) or some other digital imaging application software or feature. In other cases, Photoshop is used as a point of reference to review other technologies or features. For example, running Photoshop to assess the processing power of a desktop computer (Figure 9, video 122; iPhonedo, 2016) or the performance of a desktop mouse and keyboard (Figure 10, video 200; Denny's Tips, 2017).

Figure 8. Screen capture of video 363 (Adobe Photoshop, 2016, 2:39).

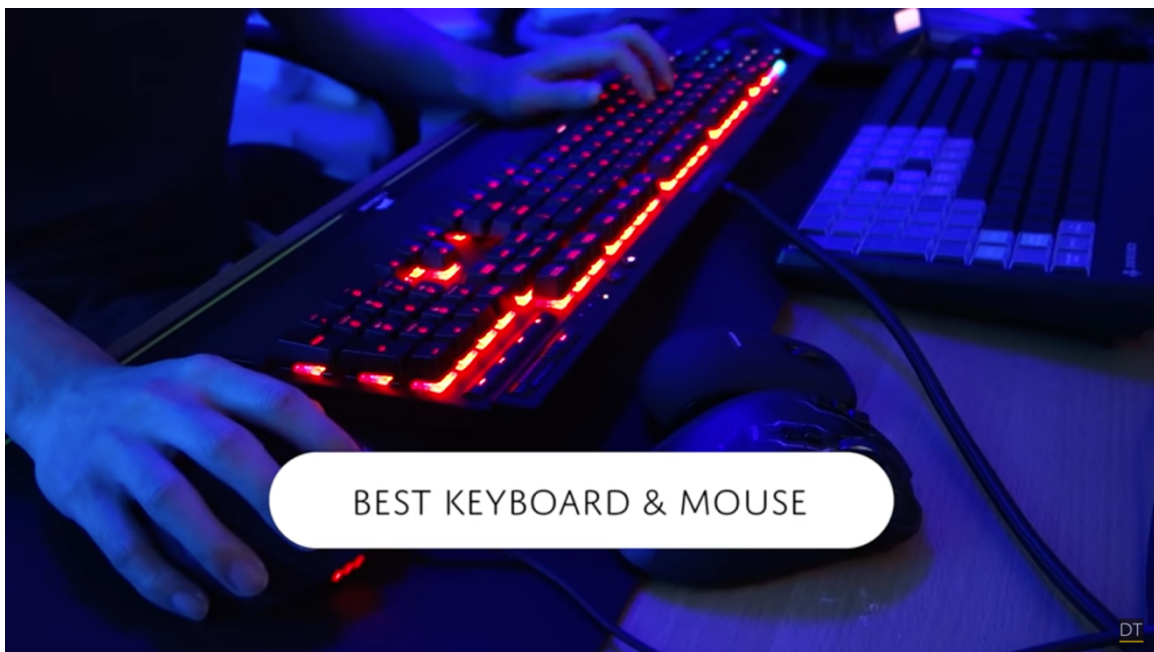*Figure 9. Screen capture of video 122 (iPhonedo, 2016, 0:06).*

Figure 10. Screen capture of video 200 (Denny's Tips, 2017, 0:05).

Part of the difficulties of disentangling reviewing from other genres stems from the way in which Photoshop constitutes both an application software and a recognized brand. Reviewing can be understood as a genre of vlogging produced by and for brand communities as "specialized, non-geographically bound communit[ies], based on a structured set of social relationships among admirers of a brand" (Muniz & O'Guinn, 2001, p. 412). These brand communities are involved in (mostly) consumer-to-consumer processes of actively interpreting and negotiating Photoshop in relation to various contexts of use. The research did not identify a typified figure for this genre nor did research design afford a chance to determine to what extent this particular brand community could achieve meaningful communitization (Couldry & Hepp, 2016, pp. 183–186). However, the reviewing genre is another example of how Photoshop can be used as a tool for purposes other than those pertaining to digital imaging and how this branded toolbox intertwines with other, broader cultural, technological and economic transformations. Reviewing demonstrates how its skilled performers navigate such transformations and meaningfully integrate them into a sense of identity as practitioners (Lesage, 2016, p. 227).

Hybrid Genres and Other Genres

Of the remaining videos collected during the research, one was a documentary produced by Adobe about the history of Photoshop titled *Startup Memories* (Adobe Photoshop, 2011). The other 22 were identified as hybrid genres that combined elements of either the tutorial and geeking out genres (10 videos), the geeking out and critiquing genres (7 videos), the tutorial and reviewing genres (4 videos), and the tutorial and critique genres (1 video). Taken together these combinations speak to how, despite the clear dominance of the tutorial genre, the boundaries of these various genres remain relatively permeable. It is entirely possible that other genres of YouTubing Photoshop are currently in circulation or will emerge over time.

Discussion and Conclusion

Throughout this article, I have argued for an expanded conceptualization of how people collectively perform, perceive, and organize skills as part of media practices by acknowledging its mediatization. The above case study of YouTubing Photoshop illustrates how photoshopping can be understood as a mediatized skill by moving beyond a focus on how people use a single piece of application software to an understanding of how they perform capabilities that are interwoven with media including their related institutions, technologies, and symbolic content. As a system of genres, YouTubing Photoshop does not determine what images people create as part of digital imaging practices, but it typifies and legitimizes certain capabilities, and a certain kind of performer, over others. Broadly, the genres identified above fall into one of two major categories: the dominant tutorial genre and alternative genres. Both categories foreground certain capabilities: what I refer to as proceduralizing and working with proceduralized content in the case of the tutorial genre, and a diverse range of different capabilities, like reacting and commenting, testing, judging, and demonstrating, in the case of the alternative genres. In the concluding discussion below, I consider important questions raised by these two categories for an understanding of mediatized skills.

Research in rhetoric and technical communication characterizes *procedure* as a narrative discourse—giving an account of how one achieves a particular task (Van Ittersum, 2014, p. 236). Although

procedure has been used in contrast to practice (Duguid & Brown, 2002), "proceduralizing" as defined in the above analysis is the capability to make a certain kind of plan (Suchman, 2007)—to string together sequences of actions, including choosing and activating features and functions, to achieve a desired effect. Videos in the tutorial genre weave together both of these definitions into a kind of "doubly articulated" (Couldry & Hepp, 2016, p. 33) skill; they convey proceduralizing as photoshopping skill and, as symbolic content, they afford their use as tools for digital imaging. The main question raised by these observations is whether proceduralizing and working with proceduralized content are such dominant capabilities in the above case study because they are particularly suited to conditions of deep mediatization. A preliminary answer would seem to be in the affirmative, given that they are capabilities that can be collectively shared with others across domains without requiring conditions of simultaneity. But our current understanding of these capabilities cannot be disentangled from their mediation with Photoshop or YouTube and how they enable and constrain collective, intersubjective exchanges. Would other versions of proceduralization performed as part of other skilled practices enjoy the same advantages without these entanglements? Answering such a question requires further research.

While alternative genres remain relatively peripheral when compared with the tutorial genre, they may provide clues to how to open up possibilities for a more diverse and equitable social order; skill without falling into nostalgia for a return to its performance in the here-and-now and face-to-face. For example, the capabilities identified among alternative genres like reacting, commenting, and testing may at first seem more closely associated with media practices like vlogging than with digital imaging. However, if we consider such capabilities as part of performing rational, aesthetic, and moral judgments, they become just as relevant to the latter as the former. What I am suggesting is that these other genres afford opportunities to engage in the more imaginative and reflexive aspects of photoshopping skills that are not currently covered by the tutorial genre. Exploring how both categories can be woven together opens up possibilities for more expressive instructions (Sennett, 2008, pp. 179–193) in contemporary media practices that involve application software like Photoshop. It might also support a deeper conversation about the purpose of mediatized skills like photoshopping, including who is involved in performing it and its intended purpose. Such a conversation should include the concerning finding above that the tutorial genre predominantly typifies photoshopping as a skill performed by a male figure, thereby advancing a patriarchal discourse that technique is masculine. The space of possibility opened up by recognizing the diversity of genres in photoshopping as a mediatized skill is of vital importance for developing a more critical understanding of the role that digital media like Photoshop and YouTube play in shaping media practices.

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