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A Systems View of Creativity in a YouTube World

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I believe the next Oprah Winfrey or George Lucas will not come from a local news desk or college film program. He or she will come from the world of the web. Where the bar to entry is low, and where a group of kids can dream up a story and shoot it in their backyards. Regardless of whether someone gave them permission or not.
-Felicia Day
I think it's fair to say that personal computers have become the most empowering tool we've ever created. They're tools of communication, they're tools of creativity, and they can be shaped by their user.
-Bill Gates

Introduction

In 2005, Anthony Padilla and Ian Hecox uploaded multiple lip syncs of famous pop culture theme songs to YouTube under their new channel name, Smosh. Many of the videos, particularly the lip synch of the *Pokemon* theme song, became some

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of YouTube's earliest hits. Before being removed, the *Pokemon* theme was the most-viewed video on the site. Over the past 10 years, Padilla and Hecox have grown their brand internationally through self-directed videos. They have written and directed their own feature length film and become household names. The two young millionaires represent a new generation of creative producers who use social media to distribute their product. As we have discussed in previous articles in this series, the ability to create new ideas, knowledge, and expressions requires being adaptable to environment and flexible about tools and content (Mishra, Henriksen, & the Deep-Play Research Group, 2014).

There have been consistent developments in new technologies throughout human society ("technologies" in the broadest sense, as "tools to think with"). However, recent years have seen a comparative explosion of digital technologies. This rate of change and technological growth is quickly reshaping how we work, think, and act in the world (Cuban & Cuban 2009; Mishra, Koehler, & Henriksen, 2011; Zhao, 2012). Content or knowledge can be created, shared, and discovered much faster and more easily.

As 21st century technologies have contributed to globalization and diversification of knowledge, they have also begun to reshape the sharing of idea, art, culture, and other forms of content. Such technologies offer much to the landscape of creative sharing, as we have seen in approaches such as internet crowdsourcing of data or ideas, new applications for creating video/audio/images/text, and websites devoted to sharing content (e.g. YouTube, Sound Cloud, Vimeo, to name a few).

In many ways, this infusion of new technologies for developing and sharing content has transformed how culture, art, and knowledge emerge within fields of interest. Consider the example of the Smosh channel above, or many other content creators and curators in similar venues. Of course, there are still "experts" in traditional domains that may question the

validity of these new creative displays, and communities of practice still have "gatekeepers" – those who decide what is and is not worthy of inclusion in the field and diffusion more broadly. We argue that new technological platforms allow producers to bypass traditional gatekeeping processes, providing the opportunity to showcase creative skills and also to redefine a field's classification of what is high quality or creative work. We frame our discussion within Csikszentmihalyi's systems view of creativity, exploring how these new possibilities for creating and sharing may require us to rethink Csikszentmihalyi's model. We believe that such a rethinking of the systems view of creativity can have implications for the use of digital technologies in education.

Individual, Field, Domain: a Systems View of Creativity

To understand how new technologies are reshaping the creative landscape of the world, we must first consider a fundamental existing model for the ways in which creativity emerges and is situated within contexts, systems, and domains. Almost 20 years ago, researcher and psychologist Mihaly Csikszentmihalyi (1997) espoused his systems model of creativity to provide an understanding of how creativity operates at different levels in society.

In asserting his framework for creative production, Csikszentmihalyi noted that while much discussion on creativity has tried to understand *what* exactly creativity is, a more interesting and valuable question may involve asking, "*where* is creativity?"

Csikszentmihalyi suggested that to understand creativity in a larger context, "we need to abandon the Ptolemaic view of creativity, in which the person is at the centre of everything, for a more Copernican model in which the person is part of a system of mutual influences and information" (1988, p. 336). His model suggests that when an individual or team produces something, simply asking whether it is creative or not misses the larger point. We must consider how creativity emerges from a dynamic interaction of, "a system composed of three elements: a culture that contains symbolic rules, a person who brings novelty into the domain, and a field of experts who recognize and validate the innovation" (Csikszentmihalyi 1997, p. 6) – the field of experts act as gatekeepers who choose what is significant in impacting the discipline.

In essence, Csikszentmihalyi asserts that creativity lies in the interaction between the *individual*, the *domain*, and the *field*, in which the creative work is couched. Creative work functions between these three areas and is produced and diffused based on the judgments and interactions of members of those levels.

At the level of the individual, individual people (or groups/teams) produce creative work, ideas, art, or new discovery.

But to understand creativity at that level alone does not give us a full picture. Creativity also is affected at the level of the domain–areas of specialized knowledge (mathematics, biology, physics, art, law, and more). Here, the domain is the symbol system that an individual and others working in an area use and reference. It includes the tools, rules, conventions, knowledge, norms, and systems of techniques, codes, or symbols needed to create or discover in the domain. This also can include what Csikszentmihalyi refers to as having knowledge of "fields of works." This involves understanding the pre-existing body of work in a domain, to consider how it might be used, built-on, played with, or altered to create novel variations.

At the level of the field, creative work connects to a broader audience or is disseminated to make impact. The field can be seen as the collective organization of "experts," communities of practice, or the hierarchy of people and groups who have been afforded the knowledge capital and clout to influence the domain (at the cultural or social level). In essence, these are the gatekeepers (Csikszentmihalyi, 1997). As Sawyer (2006) notes, the field involves "a complex network of experts with varying expertise, status, and power" (p. 124). The experts in a field make judgments and select which creative ideas or products are diffused more broadly and thus are potentially impactful on the domain (or culture at large). What the field looks like varies by situation, context, and domain, but it might mean a Nobel Prize committee, journal editors or reviewers, music or movie industry executives, Olympic judges, and so on. These gatekeepers have traditionally determined what is judged worthy to make an impact on the broader area. Experts are identified not by how much knowledge they possess about a particular subject, but rather how they use that information and adapt to the problem at hand (Bereiter & Scardamalia, 1993).

Each of these three components – person, field and domain – influences and is influenced by the others (Csikszentmihalyi 1988). Each component is a necessary factor in creativity (and even expertise), but not sufficient in itself to produce impactful or valuable novelty.

A Rethink of the Model: Who are the Gatekeepers in a Changing Landscape?

Our description of gatekeepers fits a traditional paradigm (Sawyer, 2006). But how are we to consider the model when we look at examples such as Smosh, mentioned in the introduction, or other YouTube superstars such as Grace Helbig, Tyler Oakley, and Joey Graceffa? If these examples were anomalies, we might overlook or dismiss them as errant cases of new media being used to sidestep existing gatekeepers and catapult the individual(s) to success in the field. However, they are not

alone; there are numerous examples across genres and platforms in which individuals operate under the assumption that the old gatekeepers do not always determine what is deemed creative.

Let us also consider how new creative producers are transcending their platforms of origin. The three other YouTube stars mentioned—Helbig, Oakley, and Graceffa—have all published books with major distributors recently, transfiguring their loyal online fanbase into loyal offline consumers. Furthermore, YouTube has launched the careers of many popular musicians (Justin Bieber and Lindsey Stirling, for example), and people across creative industries. For example, makeup artists such as Michelle Phan, Jacklyn Hill, and the Chapman sisters (under the channel name, Pixiwoo) have built worldwide careers and received lucrative corporate contracts and international collaborations based on their success with multi-million subscriber channels.

YouTube is not the only place where creative producers can share their work and be recognized with or without the traditional gatekeepers of their fields. One interesting example is that of Yori Narpati, a fan artist who often creates her own interpretations of popular characters from young adult novels and other media. One of her well-received pieces depicted characters from Rick Riordan's *Blood of Olympus* series and eventually caught the publisher's attention. Disney Hyperion offered to buy the rights to the poster from Narpati and began selling the piece at major retailers (Narpati, 2014). This case is unique in that it not only highlights how major companies are recognizing the value of new media creations, but also shows the potential of remixing original material—a form of creativity sometimes looked down upon in traditional artistic paradigms. The popularity of *Fifty Shades of Grey*, essentially a *Twilight* remix, points to this shifting perspective, as well. (At this point, we feel compelled to note that the selection of examples in this article is not necessarily a personal endorsement of the work in question.)

Once these new creative producers find fame and acceptance of their work in more mainstream venues, they do not abandon the original platform, but continue to focus on their connection to their fan base. While Helbig and the Smosh duo have created feature-length films, they both still film and upload videos to YouTube on a weekly basis, just as Michelle Phan and other make-up artists continue to provide tutorials (though often now including their own products). Narapati still adds fan-art to her Tumblr site, where she continues to label herself as "aspiring to be a visual development artist or illustrator," even after a major deal with Disney. These artists understand their original sites of distribution as places where fans still flock to consume their creations. These sites also still benefit the producers; recently, Forbes listed Phan, Lindsey Stirling, and the Smosh duo as some of YouTube's top earners, all with profits in the millions (Berg, 2015). It might be argued that these producers have become a new type of expert.

Many people across industries who are considered "traditional" experts have taken notice of these new platforms, and this has been extending into educational territory with great success. One of the largest science education channels on YouTube, Veritasium, was created by Derek Muller, who received his PhD in physics education. To most, Muller would be considered an expert in both physics and education because his dissertation, a traditional showcase for expertise, was titled *Designing Effective Multimedia for Physics Education*. However, using Bereiter and Scardamalia's (1993) ideas, it is Muller's ability to anticipate future technologies, communicate and educate in compelling ways, adapt lessons for a new medium, and distribute them to a broader audience that truly defines his expertise. What all of these examples suggest is that systems of creative development and diffusion are evolving to fit the ways that technology opens up and expands society and culture (Bentley, 2009; Zhao, 2012).

Gatekeepers of the Past and Producers of the Future

Some may be critical of the idea that new media suggests a rethink of creative systems. They may note that while there is now vast potential for greater amounts of new content production, that does not necessarily mean that most of that work will be good, or creative, or that the majority will find great success or expertise. There are billions of videos on YouTube, with new ones being uploaded every second, (YouTube Press Statistics, n.d.), and new artwork, new eBooks, blogs, and other forms of self-publishing shared via the digital world are also expanding. The majority may never find a significant audience or put a dent in their genre or culture, but that does not change the fact that there has been a dramatic shift in the landscape or that the barriers to creative production and paths to an audience have been altered by digital tools.

It is true that much of the work produced on YouTube, Tumblr, or other media may not be considered high quality by the standards of the genre or may not find a big audience. But that is also a norm for almost any field of creative production. We might look to the concept of "Sturgeon's Law" set forth by Theordore Sturgeon, an American author of science fiction, who defended the sci-fi genre against critics who derided it as a low-quality medium. He noted that the overwhelming majority of work in almost any field could be viewed as low quality, and in this way science fiction was no different from other art forms. As Sturgeon put it, "Using the same standards that categorize 90 % of science fiction as trash, crud, or crap, it can be argued that 90 % of film, literature, consumer goods, etc.…is crap. In other words, the claim (or fact) that 90 % of science fiction is crap is ultimately uninformative, because science fiction conforms to the same trends of quality as all other art forms." (Sturgeon, 1957, p.78). This idea becomes prevalent in the arena of new media

where the pre-existing barriers (e.g. the whims of "experts" like publishers or movie/television executives and so on) disappear. The ability to explore, create, and share content simply makes the "lesser" 90 % more publicly visible, perhaps leading to the inaccurate idea that such media attracts worse content. In truth, there is simply more opportunity to create and more work out there to be shared.

While the systems model of creativity still has credence, it requires reconsideration to account for these new avenues of creative production and new means of interaction between the individual, the field, and the domain. New technology is a core reason for this. The ability to create has become easier, putting the tools for the creation of new things in more hands more readily (Mishra and Koehler, 2006). The resources it brings with it, including infrastructures for connecting around the world, have made the sharing much easier. For much of the history of human creativity, the work of creating and diffusing new innovations was done by the field (Csikszentmihalyi, 1988, 1997), and even in the recent past, the field was acting as the gatekeeper, deciding who was and was not an expert.

Digital technologies and connectivity, however, allow individuals to sidestep these traditional gatekeepers and communicate directly with a broader audience, creating a new nexus of expertise and consumption. In this sense, new media can often cut out the "middle-man" role, by connecting artists with an audience. This can remove traditional gatekeeper roles in some contexts or situations (for example, artists can display work online instead of going through a gallery-owner, where a natural restriction often happens). In those cases, it might even be argued that new media sharing can strengthen quality in a particular medium because the audience can discern quality or worth without having a moderator restrict the relationship with the creator or the diffusion of the work. The phenomenon of increased access to the field occurs not just in terms of creator to gatekeeper to the audience, but it also happens in how the audience can connect with the creator – sometimes in an immediate feedback loop. As such, the role of the creator and the consumer both garner more power or more say in the process.

Even once new experts are identified in new media, they rarely become gatekeepers in the traditional sense, simply because the affordances of the technologies do not necessarily assign them this role. They rarely have direct power to designate disciplines or power over distribution channels. While those who have been labeled as experts can certainly encourage and influence consumers to seek out particular individuals, they cannot stop any new producer from sharing content. In this sense, the field is actually very open, and such a role does not have the same veto or limiting controls as the traditional award committees or art judges might have. Perhaps this

requires a shift in terminology–away from *gatekeeper* and toward *influencer*. The term has already gained traction in the marketing industry (Wong, 2014), and we consider that it might fit well to depict the role that these new experts of new media assume.

Conclusion: Rethinking Creativity with New Media

We suggest a possible rethinking of aspects of Csikszentmihalyi's systems model – not to replace or overturn it, but to update it for new technology and shifts in certain contexts and genres. At the level of the individual, if we think of people as either consumers or producers of content, there are now more producers than ever. When YouTube first started, there were significantly more consumers than producers (YouTube Press Statistics, n.d.). While the balance still reflects that more people consume than produce, there has been a shift toward an ever-increasing number of producers. More importantly, the flood of new media has allowed for a different path of entry to finding an audience or achieving creative success. New tools make it much more feasible for anyone with access to create and share their work with the world. These tools and digital infrastructures have also allowed the work to be shared with worldwide audiences.

The examples that we have noted in this article showcase a few instances, representative of many others that exist across genres. Consider again Derek Muller's Veritasium channel. As a producer, he has taken knowledge of the content, with knowledge about how to educate for that content, and shared it in a new technology medium. At its heart, this expresses the idea of Technological Pedagogical Content Knowledge (TPACK), in which knowledge about how to teach content effectively through technology is put to work, using the ability to share it widely (Mishra and Koehler, 2006). More and more such educational channels are popping up, such as Minute Physics and ASAP Science (even established organizations like NASA have taken up the venue). The popularity, as evidenced by subscribers and video views, suggests that content creation can intersect in compelling ways with teaching and learning.

History reveals that technology usually increases exponentially, altering the ways we communicate, teach, and learn. Since we suggest it also revises aspects of the creative systems in which new work emerges and is diffused, there are possible implications and new questions for education. Those questions are not necessarily fully known yet, but we propose that this is a vital and open set of emergent issues for consideration and discourse. If we rethink or amend a systems perspective on creativity, then we must also consider how these ideas will affect the classroom. For example, how can the power of new tools for creation be harnessed to promote a creative and expansive mindset in students? What does the systems model of

creativity look like in the classroom, and does it affect the teacher's role as a gatekeeper of student work? Rethinking the systems perspective on creativity also requires us to consider aspects of our current models of education and how well these are suited to the ever-changing times we live in. For instance, are current standards-based education models preventing students from showcasing creative skills, turning these standards into amorphous gatekeepers that impede creative production and thought?

At a broader level, all of this may suggest that students and teachers alike can find ways to bypass the traditional "gates" and use technology in new and creative ways. So we end this piece with more questions than answers—as is appropriate in any new wave of thinking— especially in this emergent and vital area of creativity and education.

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