

Shawn Spangler is a Studio Potter and Visiting Assistant Professor of Art at Western Illinois University. He graduated with a BFA from Pennsylvania State University and a MFA from NYSCC at Alfred University. His collaborative installation projects have integrated technology in the context of traditional vessel production, in an effort to create a dialog regarding handcrafted and digital processes. Shawn will present topics on collaboration, community and the Internet.

Analog and Digital Life

by Jen Woodin

Throughout many aspects of our lives, recent technologies have altered the way we engage in our world. Whether considering simple day-to-day tasks or complex relationships with others, the presence of ever evolving digital technologies has, by now, woven into the collective fabric. The same is true for creativity and art making.

My early education and first career started in the field of engineering and engrained in me a practice of both using and designing with emergent technologies. As my interests transitioned into art making, the use of technology, even in the ceramics studio seemed natural and relevant. At the time, I found learning to fire a wood kiln far more complicated than drawing one in a CAD program. As young artists arrive on the scene with a total integration of digital skills in their make-up, the inclination to turn towards those tools is inevitable. At times, their enthusiasm in this regard is totally contagious and at others it can feel daunting to bridge that gap.

Emergent digital technologies in the arts have guided my research for several years now. What stands out to me, at this point, is how changing technologies have had an impact on art in general and within the field of ceramics more specifically. One aspect at the center of these new tools is how artists are using them in their studio practice. For some the focus is on application of digital imaging and fabrication equipment, for others it might include marketing strategies such as interactive websites, social networking or videos. As more artists have engaged in these technologies, opportunities have materialized in the form of virtual collaboration.

In the summer of 2010, I collaborated with an artist from Denmark on a project exploring urban landscapes and digital fabrication. While I was in Montana at the Archie Bray, she was in Copenhagen at a different residency; individually we collected and exchanged images of inspiration, from which we created renderings using a 3D imaging software called Rhinoceros 3D. The files went back and forth on email until we both were excited to have a model fabricated. Later that month when I arrived in Denmark we had models in hand and immediately began working in clay together. This led me to further investigate how other artists are drawn into working with technology and clay.

My interest in studying these new tools lies in the way artist experience dreaming, creativity, and crafting through the filter of virtual space. All of this requires a willingness to explore, sometimes leading to disappointment, but usually it simply

leads us to the next step.

It seems to me that artists often approach a new tool when their ideas evolve and they have a need or longing to see what will happen next. While digital technologies are quite a leap in terms of how they fit in our hands, the decision to interact with them is not so different. Much of what we do as artists is to lead as well as respond to shifts in culture. Repurposing these tools from industry is a natural arena for the artist. An endearing quality of all artists is our genuine curiosity, one that guides our thoughts and our hands to the next expression, and then the next; at times speeding up our creative process and at times slowing us down.

Exploring new tools and processes has its benefits and draw backs, while at the same time keeping our practice fresh and uncontrived. My own studio practice has enjoyed an increase in precision and flexibility, while suffering from a slower and smaller production. What has occurred to me is that slowing down my process has opened up my perception of simplicity and basic appreciation of exploration. Much of our fast paced world has undervalued the benefits of taking it slow. I find it inscrutable that the complications of new technologies have helped to slow down my ceramic process enough to allow for those subtle shifts in culture to filter through to the art. By learning from this research on crafting in virtual space, I hope to demystify my confusion on creativity and its evolving environments.

Much of what we do as artists is to lead as well as respond to shifts in culture. Repurposing these tools from industry is a natural arena for the artist.

Jennifer Woodin is an Artist, Designer and Educator working in the field of ceramics. She is currently an Assistant Professor of Art at State University New York, New Paltz,

teaching in the areas of digital arts and ceramics. She received a Bachelors degree in Mechanical Engineering from California State University, Chico and her MFA from the University of Oregon. Her research and practice combine aspects of both fields forming a unique line of inquiry between art and industry. Jennifer will present on the lines of Educational Crossroads and digital fabrication methods within ceramic media.

Semantics of Corporeality and Technology

by Brian Czibesz

When approaching questions about the digital and analog tools currently employed in ceramic material practice, I can't get much farther than the Oxford English Dictionary before taking pause. An examination of the semantics of the terms digital and analog navigates a territory parallel to the dialogue in our field about their use and validity, and it poses greater questions about the general relationship between the body and technology. These terms point to corporeality and technology, not just semantically but practically. In such a high touch medium as ceramics, it is often seen as irreverent to use tools that come between our fingers and clay. While technological curiosity is embedded in our physiological and cultural DNA, applying this to ceramic material practice poses a number of theoretical and pedagogical challenges and opportunities. By identifying both the limitations and benefits of certain digital and analog modes, this 25,000 year tradition can be fostered in a contemporary con-

text and reflect the issues of authenticity and community that keeps ceramics compelling and relevant.

The word analogue comes etymologically from the Greek root words meaning “according to due ratio, proportionate,”³ but the first application of the word in relation to technology—as in a device “that operates by the manipulation of continuously variable physical quantities (as voltage, spatial position, or time) which are analogues of the quantities being computed”⁴—was actually as a means of differentiating analogue technologies as non-digital. Ironically, what distinguishes digital from many other terms associated with high technology is that it’s not a new word at all. It was, in fact, in the 15th Century that it was used in the sense that we mean it today: “designating a whole number less than ten.”⁵ This is because the pre-computer sense of the word relates directly to the human hands. Simply put, digits are fingers, and one of their uses is for counting.

Of course, our fingers present a certain physiological limitation in counting past ten. The various ways throughout history of gathering small objects and making marks to facilitate this counting are our means of overcoming this limitation. Such tools, systems, and the bodies of knowledge that define their implementation are technology in its fundamental sense, which can be defined as “the branch of knowledge dealing with the mechanical arts and applied sciences, the application of such knowledge for practical purposes, or the product of such application”⁶ While we generally use the term technology when invoking ideas of new tools and gadgets, it should be noted that any material process, product, or body of knowledge—and in ceramics this means anything from coil construction to ram-pressing to 3D printing—is technology in the strictest sense of the term. So why do we draw lines in the sand? Why do we highlight certain modes of working for criticism and not others? And why do we engage in the exploration of new technological means to replace existent ones in the first place?

Another meaning of the word analogue provides a further step toward elucidation. Analogue is “agreement or similarity, esp. in a certain limited number of features or details.”⁷ Something is, therefore, analogous when we can understand it as a simulacrum of something we already know. A cup is a prosthesis for our hands; it simulates what our hands can do (in many ways better) and frees our hands for other things. It is a technological analogue. This notion of simulacrum extends to other specific areas of ceramic material practice. While a barrel extruder simulates the compression of hand coiling, so do extrusion-based 3D printers, in which the technological analogue is multivalent, extending even to the source of the instructions; what informs the mechanism that formalizes the idea is a digital code of counting instructions. Both semantically and practically, digital technologies are often best and most easily understood when they proffer tools that are analogous to ones that are non-digital.

But because the use of clay to generate form is a somewhat timeless endeavor, and because ceramic material practice is so directly related to the body, ceramic artists often position themselves as luddites, especially in the face of the precision, refinement, and control associated with digital tools. In discussing the role of technology in his book *Ceramics*, Philip Rawson champions manual techniques and “natural” materials, eulogizing that “in the past, the potter’s materials have most often been the com-

pounds and mixtures of many chemical substances given to him personally by nature.”⁸ While I lament his teleological implications, I subscribe somewhat to his position that ceramic practice is best when grounded in the “dirty realities of clay.” But regarding the implied end goal of material technology, he states:

Near the limit of technical proficiency ceramics runs into a double danger. It may pursue luxury of materials beyond the point where this becomes morally offensive [...] the technology may become so efficient [...] its output so uniform, that the material is lost [sic] sight of *qua* material and becomes a glossy refinement of *chic*. It can no longer serve as a proper symbol for the world of the environment which is transformed.⁹

To Rawson, the degree to which change occurs through technological processes is related to a greater or lesser loss of legitimacy.

It seems appropriate here to invoke a discussion of the Amish, because their code of principles dictates that they adopt modern technologies selectively in order to preserve family and community structure. They seek to prevent vanity, signs of status, and sloth while at the same time insulate themselves from the outside world, where values are often radically different from theirs. There are interesting parallels between these sets of rules and the way we perceive some technology, particularly applied to ceramic material practice. One of the reasons the Amish eschew telephones is because their use interferes with direct personal interaction, which

...because the use of clay to generate form is a somewhat timeless endeavor, and because ceramic material practice is so directly related to the body, ceramic artists often position themselves as luddites...

is an important sociological agent of community. Telecommunication is a form of media, which can be contrasted with the absence of mediation, or the immediate. Media involves action through an intervening agency, while immediate means occurring without delay and without an intervening agent. With certain intermediaries, there is a concern of something being lost in translation, but this is not a new perspective. The fear of media technology dates back at least as far as Plato and the Myth of Theuth, in which the authority of ideas and pedagogy was thought to be undermined by the invention of writing, which changed the way ideas were disseminated. The change in technological or media form suggests a further change in authenticity and power. For the Amish, certain technologies result in a loss of power in their social communities.

But there is potential there, and the fact is that the ceramics field has broadened to be inclusive of all modes of both digital and analog production. I view this as an opportunity for inclusion rather than shifts in power. The theoretical and pedagogical challenge comes in the link between virtual, mediated forms and the more immediate. I am interested in the semantics of these terms because I work with my hands as well as enjoy the challenge of envisioning, creating, and using new tools. In my practice, I look for ways to harness new technological analogues as well as ways to be more immediate, getting back to working directly with materials. Rawson states that people understand the behavior of their materials through practice, and the existential-aesthetic consequences are what matters, not the advancement of a theory to which practice is subservient. We accept that this is true in working in clay, but I believe that this logic can be applied to any part of the practice, even with digital tools and virtual material.

But perhaps the most interesting potential for digital technologies is in the way that they build certain types of communities and

provide access to information. Artists share technical information, images, ideas, and criticism easily and readily through the use of online digital tools. While this changes our notions of time and space across distance, it serves as a necessary prosthesis for presence and interaction. These virtual tools (software) provide digital analogues to other ways of organization of social and professional information. And as is evidenced in the vibrancy of digital social networks and the DIY fabrication community, the exploration of these new technologies probably builds community rather than the moral offensiveness and alienation that Rawson describes. This is because the curiosity of working with a new technology can be the same whether this means fussing with generative modeling in the digital environment (one type of new technology) or developing a new throwing body from a local clay deposit (also a new technology). And there is room in both pedagogy and in the community as a whole for everything across this continuum.

Charting the arc of a 25,000 year tradition—up to and including our current technological moment—is admittedly difficult within one's own practice, let alone in education. So how do we mentor students who represent this broad baseline of interest, skill sets, and backgrounds? What knowledges can be assumed in the student population, and what kinds of outcomes should be expected? Which should be the focus of pedagogy? Handbuilding methods that speak to direct corporeality? Collaborative practice using digital networks that collapse space, presence, and time? Small, serial slipcast production that reinvents the scale of manufacturing? Algorithmic modeling that generates inventive new forms from data sets? Encouraging the use of a digital fabrication tool that may be a technological false start? Fostering expressive, fluid movement at the potter's wheel? In the end, it is the task of the greater community to determine the usefulness, and timelessness, of each mode of material practice. Regardless, their viability will be a technological determination, an evaluation of their relationship to physical, cognitive, and emotional corporeality.

There can be alienation when technological analogues are misunderstood or misapplied, but I believe there is not much to worry about in that regard, because ceramic material practice remains semantically and practically grounded in the human body. Technology is prosthesis for visualization, memory, cognition, strength, endurance, precision, and production—all limitations that we seek to reconcile in ourselves. We are technological beasts because we are not satisfied with the extant solutions to such problems. The field is broad, and the range of tools at our disposal suggests a compelling, inclusive future seeking new ways of addressing the problems at hand.

3 "analogue, n. and adj." OED Online. December 2012. Oxford University Press. 17 December 2012 <<http://www.oed.com/view/Entry/7029>>.

4 "analogue, n. and adj." OED Online. December 2012. Oxford University Press. 17 December 2012 <<http://www.oed.com/view/Entry/7029>>.

5 "digital, n. and adj." OED Online. December 2012. Oxford University Press. 17 December 2012 <<http://www.oed.com/view/Entry/52611?redirectedFrom=digital>>.

6 "technology, n." OED Online. December 2012. Oxford University Press. 17 December 2012 <<http://www.oed.com/view/Entry/198469?redirectedFrom=technology>>.

7 "analogue, n. and adj." OED Online. December 2012. Oxford University Press. 17 December 2012 <<http://www.oed.com/view/Entry/7029>>.

8 Philip Rawson, *Ceramics* (London: Oxford University Press, 1971) p 10.

9 Rawson, *Ceramics*, pp 13-14.

Bryan Czibesz is currently an Assistant Professor of Art of Art in Ceramics at State University New York, New Paltz. He received his BA from Humboldt State University and an MFA from San Diego State University. His practice explores a range of materials and fabrication technologies including hand building with clay, printing 3D digital prototypes, tinkering with micro controllers. His work invokes the notion of the prosthesis and examines the curious intersection between technology and human physicality. Brian will present on the topic of Semantics of Corporeality and Technology.

Conclusion

by Paul Donnelly

Ceramics is unique as it is one of the few mediums that can be used as a form of expression utilizing the most basic, fundamental tools available; our hands. Conversely, it can be informed and produced by employing advanced technologies like 3D printing and CNC milling. With either approach, there is always room for invention and discovery. In so many ways, ceramics is one of the most diverse materials available while having major limitations mainly due to its lengthy process. This does provide multiple stages in which makers can interject their creativity. As we expand our horizons with digital technologies, the medium can advance in ways that are unimaginable. All art evolves gradually through movements informed by theory, history, aesthetics, process, technology and material. If we work to find room to include digital practices within curriculums geared specifically to our interests then we will advance a whole generation of makers to think in new ways. Consequently, this will advance the field itself. Additionally, this is of great importance because we are at a crossroads in how these practices are being experimented with and being implemented within the field. It will be exciting to see how we move forward with these practices and watch which ones become mainstream and which ones fade away.

Paul Donnelly, The moderator of the Panel, is a studio potter residing in Kansas City, MO. He received his BFA from Edinboro University and his MFA from the NYSCC at Alfred University. He is currently an Assistant Professor at the Kansas City Art Institute where he teaches the vessel curriculum and a computer automated design and Ceramic media class. Paul creates functional pottery that stems from his interest in architecture, landscape and modernism. He constructs work through a combination of wheel thrown elements, slip casting, and digitally fabricated components.

