

The Journal of the Inter- national Digital Media and Arts As- sociation

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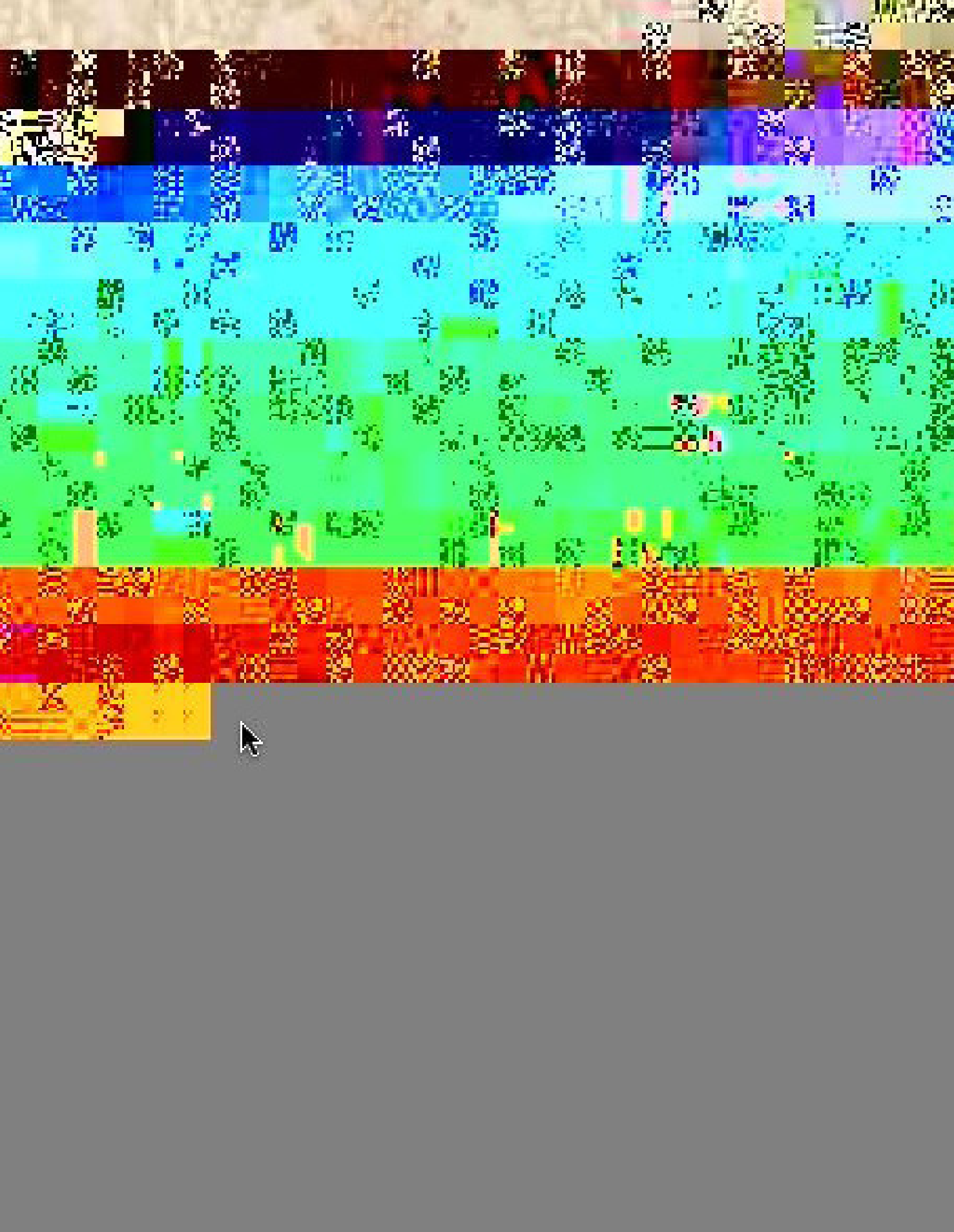
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introduction

For this issue of IDMAA's journal, members of the editorial team worked together to select past articles that we found representative of the compelling issues that face the various researchers and practitioners of our organization. The motivation for this is the impending new direction of our journal: We are working to move online with an interactive journal that will promote networking and productive discussions among our readers, and we are aiming to have more regular contributions coming in to the online journal centered on a series of themes across the year (see below for the first round of themes and dates for submission).

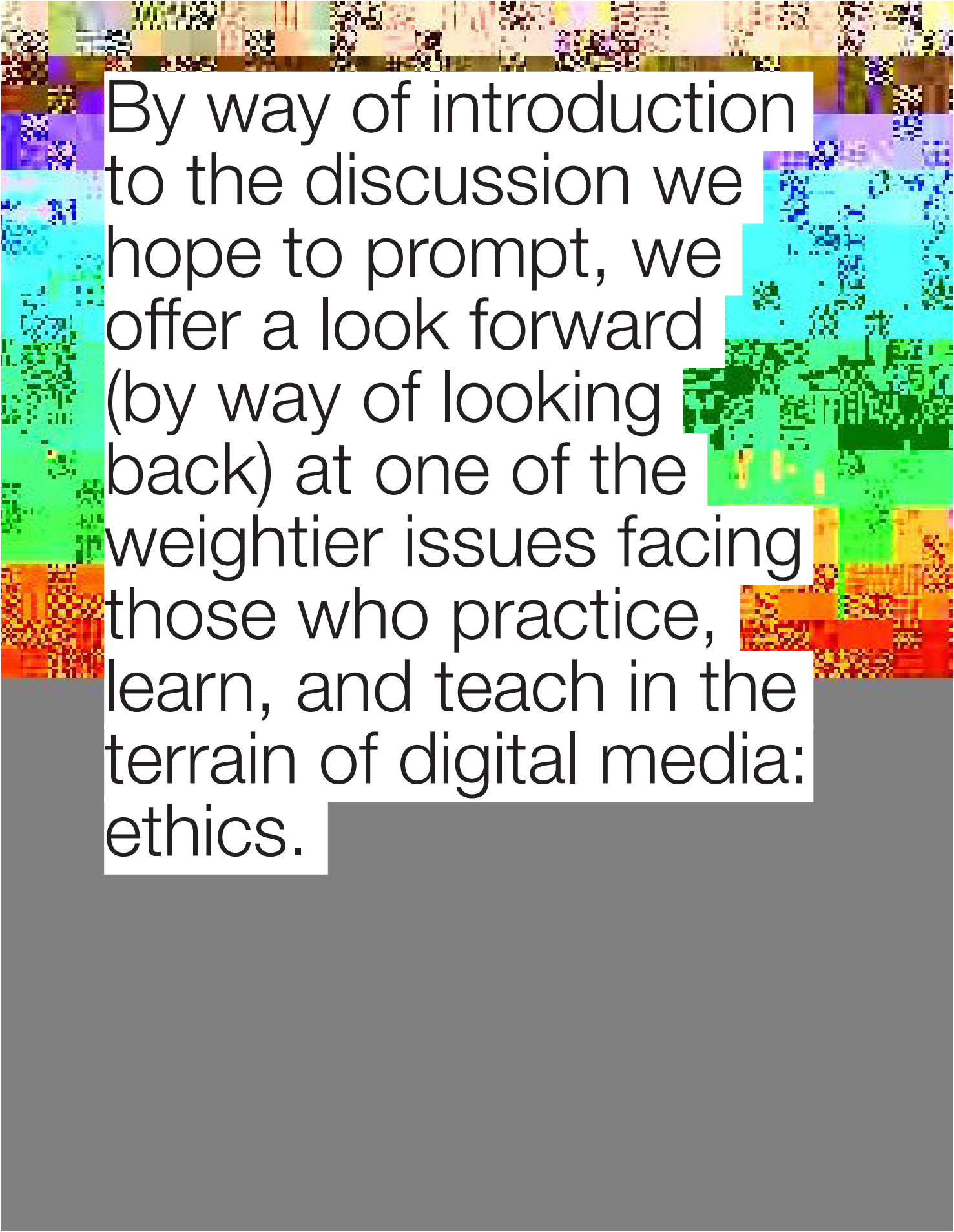
We felt a best way to begin moving forward would be to take a step back and revisit our past. To that end, Michael Niederman, Jeff Ritchie, Sharon Ross, and Mirella Shannon chose essays from previously published issues that spoke to them in some way and asked the original authors to revisit their pieces and update us on their work and thoughts. We also have included an original piece on the timely issue of social networking among politically oriented college students from Dr. Brandon C. Waite as we find this topic indicative of the converged worlds of our readership.

We hope readers enjoy looking from past to present to future with us and with our contributors.

Artists have always exploited advances in technology to explore, communicate and document their world-views. Advances in digital media technology in the early 2000s enabled integration of text, images, video and audio using a common binary representation, making possible the combination of disparate media into new art forms. Mirella Shannon chose a piece from 2004: "Thoughts On The Launch Of A Digital Media BFA Program" detailed the thought processes behind the development of an innovative interdisciplinary program that addressed changes in the worlds of art and digital technology. The University of Wisconsin-Milwaukee's Peck School of the Arts, realizing that the emerging technologies of the time would impact how future

artists represented their culture, created DIVAS—Digital Interactivity, Visualization, Animation and Sound. Mat Rapaport (former DIVAS Program Coordinator) and Christopher Burns (current Interdisciplinary Arts and Technology Program Coordinator) revisit this program in its current state for our readers. They focus on how a general accessibility of digital media technology, coupled with the growth of social media networks, has impacted the original BFA program, allowing for improvements in curriculum—particularly in regards to scope and creative approaches. We invite the reader to examine the original article, with this update as an addendum.

Jeff Ritchie is similarly interested in the ways in which academia has risen to the challenges of changing realities in the digital arena in relation to the arts; he chose a 2005 article written by faculty from the Georgia Institute of Technology: "Asking What Is Possible: The Georgia Tech Approach." We revisited this piece with great interest given the many contributions of the authors to those fields described by the combined terms "digital media" and "arts." *Hamlet on the Holodeck* (Janet Murray, 1997) is a staple, and others, such as *Video Game Spaces* (Michael Nitsche, 2009) and *Persuasive Games* (Ian Bogost, 2010) seem destined to become key texts. The chief theme these authors address involves attempting to unravel what constitutes the core areas of this field. In the five years between



By way of introduction to the discussion we hope to prompt, we offer a look forward (by way of looking back) at one of the weightier issues facing those who practice, learn, and teach in the terrain of digital media: ethics.

the original article and its follow-up, we can observe the trajectory of the many different areas of study and practice that comprise digital media and arts; we can see as well in the evolution of the Georgia Tech program—and the resources being devoted to them—an indication of the growing prominence of and interest in all things digital. We invite the reader to examine and discuss these changes, particularly in relation to the update from Rappaport and Burns on DIVAS. Many questions face this field as universities continue to grapple with how best to understand and teach about such a varied and constantly changing landscape; we find it imperative for our readership in particular to examine and ponder how higher education is working through the current environment.

By way of introduction to the discussion we hope to prompt, we offer a look forward (by way of looking back) at one of the weightier issues facing those who practice, learn, and teach in the terrain of digital media: ethics. For any college educator, incorporating an examination of ethics into the classroom is tricky stuff, fraught with personal biases. Scott Olson's original article, "Digital Deontology" (2005), was an astonishingly prescient look into what laid ahead in modern culture's relationship with the digital world in regards to ethics. Michael Niederman chose this piece and tells us that he has always desired Scott Olson's brain—not in a "I'm gonna suck your brain dry" *Scanners* sort of way, but for the profound clarity that his grey matter offers when it comes to such concepts. Olson mapped clearly a radical change in the core ethical assumptions of our world that could be linked to emerging technologies of the time. In the "redux" here, he sharpens his original insights by examining the digital cultural chaos of last six years. His examinations help to pin down a moving target and to thoughtfully deal with the truths of an era where the ethical scales related to the digital world are far from finding equilibrium.

Artists, of course, grapple with such philosophical issues on a daily basis; Sharon Ross chose our last piece, Ellen Jantzen's 2007 article "Space/Time/History as Subject for Artists," because of the author/artist's profound ability to deconstruct her own artistic processes in the face of cultural norms that challenge most modern Western mindsets. Ellen Jantzen revisits concepts of space, time, and memory in her updated piece in a manner that reflects back on her earlier work; her own creative memories have informed her current artistic process and she shares with us some of this work. Ellen's photographs, both past and present, demonstrate the fragility of the digital image and how digital photography's very mutability can create paradoxically a stable

sense of how space and time operate to ground our understanding of the world around us. Ellen's ability to reflect on her artistic process is a prime example of IDMAA's goals to expand its own sense of what is meant by "art" and what we expect from "the image" and we are pleased to bring you more from this provocative artist.

(Editors' Note: The original essays are printed here in their entirety, edited only in appearance, and appear in tandem with the new.)

THE INTERNATIONAL
DIGITAL MEDIA & ARTS ASSOCIATION

JOURNAL



Christopher Burns

Christopher Burns is a laptop improviser and a composer of instrumental chamber music. His works explore simultaneity and multiplicity: textures and materials are layered one on top of another, creating a dense and energetic polyphony. A committed educator, Christopher teaches music composition and technology at the University of Wisconsin-Milwaukee. For more information, visit sfsound.org/~cburns.

Mat Rappaport

Mat Rappaport's art has been exhibited in the United States and internationally in galleries, film festivals and public spaces. His current work utilizes mobile video, performance and photography to explore habitation, perception and power as related to built environments. Rappaport is a co-initiator of V1B3 [www.v1b3.com], which seeks to shape the experience of urban environments through media-based interventions. He has received fellowships from the Howard Foundation, the Mary L. Nohl Fund, the Montgomery County Ohio Cultural District, and University of Wisconsin Milwaukee's Center for 21st Century Studies. Rappaport received his MFA from the University of Notre Dame. Rappaport is an Associate Professor at Columbia College in Chicago where he coordinates the Motion Graphics curriculum shared by the Television Department and the Department of Film and Video.

Thoughts on the Launch of a Digital Media BFA Program

Mat Rappaport

University of Wisconsin, Milwaukee

The development of new technologies have continually changed and challenged our perceptions of cultural contexts and their resulting representation. From Leonardo da Vinci to EAT [Experiments in Art and Technology], artists have utilized the technology and media of the day to explore, process and express their world view.

Within the development of a digital media and technology program two key issues serve to define our curricular focus. The first issue is an analysis of the function of media within culture and the second is a definition of digital media. In Marshall McLuhan's 1964 essay, "The Medium is the Message," he posed a significant paradigmatic shift from a focus on the content that media disseminate to a focus on media and new technologies as shapers of social organization and interaction within the culture. This new social interaction was the 'message' of the medium. While McLuhan was mostly referring to television, his emphasis on social structures can be applied to new technologies and specifically digital media.

Defining digital media is crucial for understanding how and why digital media's structure shifts its direct application and its resulting metaphors. In particular it is important to parse the unique aspects of a medium that so often appears in the form of traditional analog media. Lev Manovich has been instrumental in defining principles of digital media. Manovich underscores how digital information, while representing text, image, video, audio and code is all constructed from the same binary language. Because these elements use the same language one can sample, combine and process the elements into new forms. The structure of digital information allows for the easy development of multiple variations, nonlinear access, and the use of databases to access the same media elements in a variety of contexts.

With so much new media and new technology being processed and produced digitally, once disparate fields and their resulting data/information have become easily exchangeable. For artists this has resulted in a range of new metaphors, strategies and structures from which to develop new works. These strategies include the sample, the remix, the mash-up, distributed networked projects and mediated interactive environments, just to name a few. In addition, digital media have enabled distribution that allow for both localized and global audiences, participation and dialogue.

It was with a focus on the unique opportunities afforded by the study and application of new/digital media that in the spring semester of 2004, the University of Wisconsin-Milwaukee's Peck School of the Arts launched an interdisciplinary Digital Media BFA program called Digital Interactivity, Visualization, Animation and Sound [DIVAS]. The program is a partnership between the Departments of Film, Music, and Visual Arts. The inspiration for the program emerged out of the recognition that digital tools have facilitated a convergence in production, distribution and discourse for what had once been largely separate disciplines. Through the sharing of expertise and facilities we have created a pro-

gram that offers students a structure in which to produce digitally mediated creative works. Now in our first year, we have twenty-two enrolled students.

Program Goals:

In developing the new curriculum we had five core concerns:

- 01:** The program should emphasize an open and expansive interpretation of digital media, to include screen-based work, interactive environments, sound, robotics and other emerging technologies.
- 02:** We wanted the program to have a research focus to center projects in content, the solving of problems and an awareness of cultural contexts. Students are constantly required to cultivate topics in other academic fields through the development of research bibliographies, writing assignments and reading groups.
- 03:** We wanted students to engage with both programming and commercial software. We believe that students should have experience manipulating code directly because programming teaches students about the underlying structure of data and its metaphors. Later, this knowledge can be used to extend the capabilities of commercial software by developing unique scripts and programs for a variety of contexts including web, interactive environments and stand-alone applications.
- 04:** We wanted students to have an awareness of media and critical theories. Students should be aware of their cultural context and engage in the dialogues of response and responsibility when making works for public consumption.
- 05:** We wanted to encourage teamwork, collaboration and social networking so that students could develop and extend their own community of makers to serve as a source of information, inspiration and support.

The resulting DIVAS curriculum is a self-directed, research-oriented BFA in which students select studio and academic courses based on their areas of interest. Students use these courses to develop conceptual and technical skills to complete a sequence of independent capstone projects. During the second through final year of the program students participate in the DIVAS Forum class in which collaborative learning, projects and research are encouraged.

Defining digital media is crucial for understanding how and why digital media's structure shifts its direct application and its resulting metaphors.

Program Description:

The curriculum has been divided into four levels:

LEVEL ONE

The first level gives students an introduction to the practices and histories from each of the core disciplines. The courses are Introduction to Experimental Film and Video, Digital Arts: Culture, Theory and Practice, Fundamentals of Music and one course from either Dance or Music. Students must obtain a B- average or better to be considered for level two.

LEVEL TWO

Level two is a sequence of courses in which students develop skills and projects to be used for the entrance portfolio review. The courses include, Typography, Web Design, Intro to Computers and Music, Basic Elements of Video.

(PORTFOLIO)

Students submit a portfolio which includes a web based project, a video, an audio composition, a work of their own choosing in any media, and a statement of intent. Portfolios are evaluated equally on the quality of the work as well as the statement in which students are asked to discuss their interest in the program as well as their anticipated trajectory.

LEVEL THREE

Also called the DIVAS core, level three is comprised of an array of classes that get organized by loose categories of Two Dimensional, Three Dimensional, Four Dimensional, and Programming. Students are required to take a minimum of one class in each of the categories as well as an additional 4 courses. The intent is for students to develop self directed competencies to be used for their Junior and Senior Independent Projects. In addition students are required to take a minimum of 6 credits in Theory and Context.

LEVEL FOUR

Junior and Senior Projects are student directed independent creative projects. The Junior Project is evaluated at three credit hours and the Senior Project is evaluated at six credit hours.

DIVAS Forum

The DIVAS program was started with a single new hire. As such, most of the courses that students in the program take are preexisting advanced courses within the host

departments. The DIVAS Forum was designed to foster a sense of community, to collect common resources, and to facilitate student exchange and collaboration within the program. Forum is a one credit hour course that students take each semester from their second year through graduation. Additionally, students are encouraged to find internship opportunities both in industry and/or within the arts.

Conclusion

In describing the DIVAS program it is my desire to engage in the larger dialogue of how new media, digital media and art and technology programs are being structured. The DIVAS model is like a hypothesis that is just beginning to be tested through having our first group of students move into the program. It is my desire to report about student response to the program as they move through it and complete the curriculum.

Any curriculum and program development is a group process. The DIVAS program was inspired by faculty from the Departments of Film, Music and Visual Art and the Peck School of the Arts Administration. Through a shared enthusiasm for digitally mediated art and technology and the need to integrate theory and practice the faculty and administration came together to shape and implement this curriculum. The following people were integral to this effort. Leslie Bellavance, W. Robert Bucker, Rob Danielson, LeeAnn Garrison, Lane Hall, Steve Pevnick, Jon Welstead, Rob Yeo and Richard Zauft.

More information about the Digital Interactivity, Visualization, Animation and Sound program can be found by selecting the Interarts link at <http://www.uwm.edu/PSOA/>

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"The Medium is the Message," by Marshall McLuhan, 1964

Revisiting “Thoughts of the Launch of a Digital Media BFA Program”

Mat Rappaport
Christopher Burns

Since the writing of this article, the DIVAS program has evolved to reflect developments in the field, practical experience with the initial curriculum, and a changing group of faculty and students. The program has been renamed Interdisciplinary Arts and Technology (or ArtsTech for short), which reinforces the interdisciplinary character of the program and includes a wider variety of artistic practices.

The curriculum as originally designed manifested the then emerging digital media art practices with an emphasis on undergraduate creative research. At the time, new resources committed to the formation of the program included one faculty line and funding for the establishment of a new lab. For the program to function with these constraints, it was imperative that the majority of the courses be pulled from the existing curricula in the partner departments. This provided the needed flexibility to offer the curriculum with the limited new resources while positioning for future expansion.

In the present, an influx of new faculty, better student access to technology, and more maturity in the field of teaching digital media within arts departments have enabled significant changes to the curriculum. The program has benefited from a focused effort to recruit faculty with new artistic approaches and skills in interactivity and physical computing. Facilities have been augmented to include a greater emphasis on programming, physical computing and interactive environments.

Within the curriculum, the pre-portfolio courses have been focused and strengthened, while interdisciplinarity is reinforced by the presence of Art and Design, Dance, Film, and Music courses within the initial Inter-Arts Core sequence of four courses. Later in the curriculum, there is now a series of required Post-Portfolio Core courses (which help to create a common base of conceptual and technological skills for students, and ensure that every student has classroom experiences with the key ArtsTech faculty). Post-Portfolio Elective courses provide personalization and breadth, and the Junior and Senior Project courses provide capstone experiences that help students to graduate from the program with a substantial portfolio. Curriculum revision continues; there is a consensus that the pre-portfolio structure is functioning well and upper-level electives will be the next focus of attention.

Currently there are about one hundred enrollees in Arts Tech, and we anticipate that fifteen to twenty students will graduate in the Spring of 2011. Post graduation, students have matriculated into MFA programs, as well as entering into careers as diverse as video production, web design and fashion design.

THE INTERNATIONAL DIGITAL MEDIA & ARTS ASSOCIATION

Journal

Michael Nitsche

Michael Nitsche works as Associate Professor in Digital Media at the School of Literature, Communication & Culture at the Georgia Institute of Technology where he heads the Digital World & Image Group. He teaches mainly on issues of spatiality and performance in digital media and is fascinated by the intersection of the digital with the physical domain. The goal is to explore these borderline areas in video games, mobile technology, and digital performances. Michael holds a Ph.D. from the University of Cambridge and a MA from the Freie University Berlin.

Janet H. Murray

Janet H. Murray is a practitioner and theorist of digital media design. In the 1980s and 1990s she led award-winning humanities computing projects at MIT, publishing *Hamlet on the Holodeck: The Future of Narrative in Cyberspace* in 1997. In 1999 she joined the faculty of Georgia Tech, where she directed the Graduate Program in Digital Media from 2000-2010, creating one of the world's first PhD's in Digital Media. She currently directs Georgia Tech's Experimental Television Laboratory (etv.gatech.edu). Her textbook: *Inventing the Medium: Principles of Interaction Design as a Cultural Practice* will be published by MIT Press in 2011.

Dr. Ian Bogost

Dr. Ian Bogost is an award-winning videogame designer and media philosopher. He is Associate Professor at the Georgia Institute of Technology (where he is also Director of the Graduate Program in Digital Media) and Founding Partner at Persuasive Games LLC. His research and writing considers videogames as an expressive medium, and his creative practice focuses on political games and artgames. Bogost is author or co-author of seven books, including *Unit Operations*, *Persuasive Games*, *Racing the Beam*, *Newsgames*, and the forthcoming *How To Do Things with Videogames* and *Alien Phenomenology*. Bogost's videogames cover topics as varied as airport security, disaffected workers, the petroleum industry, suburban errands, and tort reform. His games have been played by millions of people and exhibited internationally. His most recent game, *A Slow Year*, a collection of game poems for Atari, won the Vanguard and Virtuoso awards at the 2010 Indiecade Festival.



Asking What Is Possible: The Georgia Tech Approach to Game Research and Education

Ian Bogost, Michael Mateas, Janet Murray, and Michael Nitsche
Georgia Institute of Technology

Game Studies is a new field of education and research, and occupies many disciplinary territories within the academy. At Georgia Tech, as at other institutions, games are a subject of serious investigation in multiple academic units. Unlike many other places, however, Georgia Tech has a group of practitioner/theorists of digital media all in a single academic unit: the School of Literature, Communication, and Culture (LCC), which offers one of the first Ph.D. s in Digital Media, as well as one of the oldest related academic MS degrees, in Information Design and Technology. In addition, LCC faculty participate in the interdisciplinary GVU Center with digital media faculty in Computer Science, Architecture, Psychology, and Systems Engineering, and offer a new joint bachelor s degree in Computational Media with Computer Science, and a joint MS degree in Human Computer Interaction with Computer Science and Psychology. Game Design is a field of concentration within all of these degrees from B.S. to M.S. to Ph.D.

The approach to Game Design within the Georgia Tech Digital Media programs emphasizes the expressive potential of games as a new genre for art, entertainment, and information design. Will Wright, the developer of *Sim City 2000* (1993) and *The Sims* (2000), calls games “a prosthesis for the imagination,” similar to eyeglasses or a hearing aid. The practitioner/theorists in our program feel similarly that games can shape experience and represent the world in ways that go beyond our current capacities. Our approach is historical in that we link videogames with older traditions of gaming and cultural expression. It is also practically and critically engaged with the current gaming environment; we provide students with the skills to work in the games industry and help them to find internships and full-time jobs with game companies. We study games as media texts and critique them from multiple perspectives. Most importantly, however, we are engaged in exploring new forms of gameplay, in bringing greater computational power and greater expressive breadth to the practice of game design.

The Academic Landscape

Emerging academic games programs fall into two main categories: Game Production and Game Studies. The first is oriented toward feeding the industry; it values an understanding of the skills and processes that game developers and publishers rely on to bring games to market. This is not an insignificant enterprise; bringing commercial, AAA title games from concept to retail is a daunting task. The largest games demand teams of over 200 professionals working sometimes unreasonable hours to complete a project on deadline. Game Production programs are typically very conscientious in building their ties with industry, seeking detailed and up-to-date information about current practices and relying on industry executives to inform their curricula—or in some cases even to teach their students.

While Game Production programs provide the worthwhile and important service of training skilled workers, they necessarily must reinforce the current practices of the industry. Indeed, the success of a Game Production program lies in how well it understands and responds to the industry's needs. The best programs insert themselves into one or more major studios' practices in order to get first-hand knowledge of their particular processes. Such attention to detail creates valuable opportunities for post-graduation employment, but risks turning an institution of higher learning into little more than a head shop for a fast-growing, rapidly changing industry. If the fit is too narrow and the

program too short-sighted in serving the immediate hiring needs, its graduates may find their skills losing value when the needs of the industry shift in response to new technologies.

Game Studies programs, on the other hand, are oriented toward analyzing the current game landscape in a variety of traditional disciplinary contexts. They are often interdisciplinary associations of scholars from multiple parts of the university, such as English, Design, Film, Communications, Industrial Design, and Art History. Such programs are usually research oriented and theoretical. This is the domain of the humanities and social sciences, which strive to engender fundamental approaches to questions of human experience that transcend peculiar fads. The name “Game Studies” provides legitimacy (we're not playing games or making anything commercial: we're studying here), an interdisciplinary umbrella (not a single mode of study but several) and aligns the enterprise with earlier critical fields such as American Studies, Film Studies, Women's Studies, and Afro-American Studies.

We at Georgia Tech want to challenge both of these categories. If the Game Production programs rally around the cry “You play games, now learn to make them”; and if the Game Studies programs declare, “You play games, now learn to study them,” then we might respond, “You must make games to study them, and you must study games to make them.”

Unlike trade schools, whose job it is to train for immediately marketable skills, it has long been recognized that the role of the modern university is to provide a place for what Immanuel Kant identified in *Conflict of the Faculties* (which served as the blueprint for the University of Berlin) as both the “high” and “low” faculties. The high faculties such as medicine, law, and theology serve external ends. The low faculties such as philosophy and literature include “historical” and “pure rational knowledge.” Contemporary philosopher Mark C. Taylor marks this distinction as the basis for the contemporary division between professional schools and schools of the “arts and sciences.” The two fundamental assumptions of the modern university's low faculties are those adopted by Wilhelm von Humboldt, the founder of the University of Berlin: *Wissenschaft* (the pursuit of knowledge) and *Bildung* (educational development), which together refer to the disinterested pursuit of broadening knowledge, of knowledge for its own sake. Taylor argues that this assumption is the foundation of contemporary satisfaction with a concept of the university that is over two centuries old. As Bill Readings puts it in his influential

work, *The University in Ruins*: "Thought is non-productive labor, and hence does not show up as such on balance sheets except as waste." The pursuit of learning for its own sake, which as Readings notes, also served the nationalist political and ideological agendas of the nineteenth and twentieth century, is increasingly challenged by the political and ideological agendas of twenty-first century globalization. In a landscape of competing cultural values, academics are hard-pressed to identify which bodies of knowledge are intrinsically worthy of study, and which methodologies represent disinterested pursuit.

The split in the landscape of game education between Production and Study reflects this philosophical split in the modern university, inscribed at the birth of modern curricula at the end of the 18th century. For those who want to defend the values of the liberal university, engagement with industry is a form of corruption. For those who are identified with the traditions of professional education, the discourse of the liberal arts can seem like a quagmire of useless bickering. The commercial success of digital games, the violence and sexism of much of the content, and, of course, the essential frivolity of games intensify the anxiety surrounding the emergence of games as part of academic curricula, making it more likely that the split between studying games and producing games will widen.

Engineering schools, such as MIT and Georgia Tech, founded in the mid-nineteenth century, inherit the traditions of the modern university, but offer a third approach: the prioritizing of invention. The practice of engineering, as Henry Petroski has most eloquently pointed out, is not the mere application of an existing body of knowledge to a practical purpose. Engineering is invention, the bringing into the world of something that was not there before; the creation of new knowledge through the discipline of making things.

As practitioner/theorists of Game Design at an Institute of Technology, we recognize all three traditional functions of the university: the service to the needs of the outside world through the articulation of clear professional practices, the protection of the search for knowledge from the pursuit of the immediately useful, and the experimental, iterative, disciplined exploration of possibilities through making things. We also recognize a fourth avenue of exploration, which is the artistic exploration of materials for their own sake and for the sake of their pure expressive power. We think of computation itself as an expressive material, and digital media research as an aesthetic as well as technical practice.

The Georgia Tech approach to Games, like our approach to Digital Media, combines practice and theory. By practice we do not mean just production skills but a craft practice anchored in long-term principles of design, and aimed at exploring the expressive boundaries of digital games.

The Georgia Tech Approach

The Georgia Tech approach to Games, like our approach to Digital Media, combines practice and theory. By practice we do not mean just production skills but a craft practice anchored in long-term principles of design, and aimed at exploring the expressive boundaries of digital games.

Like programs focused on Game Studies, we are research-oriented. In our case, however, we see research questions arising from the intersection of theory and practice. In our work, critical practice is a form of investigation that generates theory, and theoretical investigation is often focused through practical implementation. Like Game Production programs, and unlike most Game Studies programs, we actively foster relationships with major game studios and publishers. However, we do so not to reinforce their current needs and current practices. Instead, we foster a forward-looking conversation to build a critical, sustained investigation into the question: what do games do, and what can they become?

In setting ourselves this question we are asserting that we do not believe that the answer will come from the evolving practices of the game industry itself, or even from the game design practices of the most forward-thinking, artistically experimental independent game designers, though we are intensely interested and often admiring of these product-oriented practices. Research is its own practice, with its own disinterested goals. It focuses on long-term knowledge, not short-term products. Research is based on a time span beyond what is needed to develop a single game, and on shared, collaborative resources beyond any single individual's practice. It rests upon the collective definition and clarification of the terms of investigation.

The game industry currently does not believe in “game research.” You’re either working on a shippable product, or you’re doing nothing. Shipability implies minimizing risk; minimizing risk implies minimizing innovation. However, there are regions of design space that cannot be reached incrementally. That is, there exist new game genres, like interactive drama, that cannot be invented through a sequence of incremental, shippable products. Trying to reach one of these distant regions of design space through an incremental series of shippable products is like trying to get to the moon by climbing trees. When you climb a tree it does get you closer to the moon. As your tree-climbing skills improve you can climb even taller trees. No matter how good your tree climbing skills are, however, only a radically different approach, like building a rocket, will get you to the moon. Of course, the first few times you build

a rocket, it will explode on the launch pad, or dive into the ocean, but if no one builds rockets, then nobody gets to go to the moon.

Academic programs such as Georgia Tech’s are an ideal home for long term game research that invents game genres, and often, along the way, solves hard, first-class technical problems. In this style of research there is by necessity a feedback loop between design and technology; design suggests new directions for technical research, while new engines and infrastructures suggest new directions for design.

Here are some examples of the research questions of faculty in our program, illustrating the focus on long-term questions and on creating knowledge by making things.

Ian Bogost: Procedural Rhetoric

For the most part, videogames have been confined to the realm of entertainment. Industry products and revenues are often compared to the Hollywood film industry. The industry’s organizing body, the Entertainment Software Association (ESA), even brands itself as a lobbying group for entertainment.

Such an attitude toward videogames makes a fundamental assumption: that the purpose of games is for leisure, with fun as a first principle. As an expressive medium in their own right, there is no reason videogames need to elicit one and only one response. Emerging fields of games strive to do more than simply be fun: they want to make a point, share knowledge, and change opinions. Including genres such as advergames, newsgaming, political games, and educational games, I collectively call these “videogames with an agenda.” To create such games, we must ask some fundamental questions about the medium in general.

Videogames play an increasingly major role in our social experience. Even though the commercial game industry has sometimes fought to segregate games from any role of social responsibility, as human artifacts they are unavoidably bound up in ideology. We need to investigate the ways in which games affect and alter people’s perceptions about the world. Central to this process is an understanding of *procedural rhetoric*—the way that a videogame embodies ideology in its computational structure. By understanding how games embody rhetoric in their rules, we not only gain a critical vantage point on videogame artifacts, but also we can begin to consider how to design games whose primary purpose is to editorialize, teach, and make political state-

Artificial Intelligence (AI) is commonly understood as the quest to endow machines with human-level intelligence, and to understand human intelligence through the construction of computational models. Such work often focuses on rational problem-solving and efficient task accomplishment as the essence of intelligence, as if this is all there is to being human. AI can be recast, however, as a *representational practice*, one that takes AI as a procedurally intensive medium for the creation of interactive art and entertainment. When recast in this way, the fundamental technical research goals of AI change. The research focus shifts to the creation of systems and architectures that combine authorial control with the generative capability to respond autonomously to player interaction. Additionally, new interactive art and entertainment experiences are enabled that would be impossible to conceive of or build unless making art in the context of an AI research practice. I call this simultaneous engagement in AI research and art making *expressive AI*.

In the context of videogames, my expressive AI work focuses on believable agents and interactive drama. Believable agents are autonomous characters with rich personalities, emotions and social interactions. Unlike characters in contemporary games, which typically exhibit only a small range of canned, repetitive responses to player interaction, believable agents have their own goals and desires, change and grow in response to the entire history of interaction with a player, and express their personalities through all of their actions. In an interactive drama, the player enters a story world in which the evolving storyline is deeply influenced by her interaction—not through sparse (and typically fairly obvious) branch points, but rather through the entire detailed history of her interaction. Narratives in contemporary games are typically either tightly structured, cohesive, but non-interactive stories communicated as a linear sequence of cut-scenes “unlocked” through gameplay, or loosely structured, episodic micro-stories that emerge out of the details of gameplay. Work in interactive drama seeks to create deeply interactive, tightly structured, globally cohesive stories. Believable agents and interactive drama illustrate the feedback loop between AI research and design practice; procedurally intensive AI techniques open up experiences that are impossible to create otherwise (i.e. manual authoring approaches suffer from exponential blowup), while novel and deep AI research questions arise that wouldn't be posed otherwise.

One of the most compelling qualities of digital games is replay. In computer games, we can walk through the same situation over and over again making different choices. We can go on the same quest as different characters with different strengths and weaknesses. We can save the game, try something that gets us killed, resurrect ourselves by returning to the saved state, and try again. This affordance is pleasurable. It lets us see things with enhanced cognitive power. We can see a complex situation in multiple instantiations, run through all the possible outcomes, and juxtapose them in our mind. The structure of games—which limits our moves (e.g., limiting the set of tokens and establishing rules for what they can do), focuses us on a limited set of parameters (e.g., our state relative to that of our opponent), and provides some way of calibrating one outcome against another (e.g., a score, a winning condition) that helps us to keep multiple possibilities in our mind.

Games, like stories, are ancient forms of human communication, connected to the earliest human experiences of culture-making and part of our basic cognitive apparatus for making sense of the world. The advent of digital technology is driving a fusion of story and game, from both sides. From *Grand Theft Auto* (1997) and *The Sims* in the game world, to gamelike and interactive television experiences such as *Survivor* and *American Idol*, popular entertainment is exploring the merger of game structures with story structures. The promise of this fusion lies in the added ability it gives us to imagine the world as a set of alternate choices, alternate perspectives, alternate destinies.

A university-based research program on story-games can identify the strategies of gaming and storytelling that link digital games to the larger traditions of human culture. It explore the unique affordances of the digital medium for expanding the repertoire of game and story patterns, and for maximizing the intersection of stories and games. These are the premises of my research, which is focused on the power of replay, a game-like quality that is now available for storytelling, and on the interfaces, interaction patterns, data structures, procedural strategies, and narrative strategies that support and enhance replay. By studying replay in existing games and creating story and game worlds that invite and reward replay, we expand the representational power of the digital medium, and expand our cognitive and imaginative reach, our sense of the depth of human experience and the possibilities of human relatedness.

The curriculum of the Georgia Tech Digital Media programs reflects our commitment to the integration of media traditions with digital technology, theory with practice, and the pursuit of knowledge through the discipline of making things.

Michael Nitsche: Experimental Game Spaces

Videogames let us participate in predominantly audio-visual spectacles. Sound and moving images generate specific game spaces—these game spaces are the core of my interest in games research. They present us with fascinating challenges that continue from the earliest prophecies of Cyberspace such as our “reading” of these spaces, the notion of “place-ness” in virtual worlds, and the principles of effective design of game worlds.

I believe that these questions are closely interconnected with two fundamental issues of videogames: one being the presentation of virtual space as always mediated through the computer; the second includes the notion of structured interactive access to these environments. Consequently, I am interested in effective moving image work and sound design for game spaces, as well as in the ways we interact with these environments when playing games and their responsiveness to our actions. From this perspective, my work tackles the wider questions that include “place-ness,” understanding, and design. In order to develop the potential of videogames, any work in this area needs an experimental part that sidesteps the limitations of commercial game development. We cannot limit ourselves to the analysis of existing game spaces, but instead have to encourage the creation of new possibilities in this area. That is why my courses, as well as my own research, always include practical experiments.

Curriculum and Student Work

The curriculum of the Georgia Tech Digital Media programs reflects our commitment to the integration of media traditions with digital technology, theory with practice, and the pursuit of knowledge through the discipline of making things. The core courses of the undergraduate and graduate programs integrate critical reading and writing with the creation and critique of digital artifacts. A key text across

the curriculum is the *New Media Reader*, edited by Noah Wardrip-Fruin and Nick Montfort, which includes computational pioneers with innovators in the interactive arts.

The introductory course in Computational Media, for example, surveys the achievements of pioneers such as Vannevar Bush and Joseph Weizenbaum, and engages students in making interactive spaces and Eliza-like characters. Michael Mateas defines the core computational course at the graduate level, *Computing as an Expressive Medium*, such that it includes expressive projects like these two:

- Display the progress of time in a non-traditional way. The goal of this project is to start students thinking about the procedural generation of imagery as well as responsiveness to input, in this case both the system clock, and potentially, mouse input.
- Create your own drawing tool, emphasizing algorithmic generation/modification/ manipulation. The students in this course have all had experience with tools such as Photoshop, Premier or Director. The goal of this project is to explore the notion of a tool. Tools are not neutral, but rather bear the marks of the historical process of their creation, literally encoding the biases, dreams, and political realities of its creators, offering affordances for some interactions while making other interactions difficult or impossible to perform or even conceive. While the ability to program does not bring absolute freedom (you can never step outside of culture, and of course programming languages are themselves tools embedded in culture), it does open up a region of free play, allowing the artist to climb up and down the dizzying tower of abstraction and encode her own biases, dreams and political realities.

These courses are part of a larger commitment to finding ways to teach what Mateas has identified as procedural literacy, which is essential to everyone engaged in digital media, and especially in game design. Just as literary scholars would not dream of reading translated glosses of a work instead of reading the full work in its original language, so game scholars and game designers must read

code, not just at the simple level of primitive operations and control flow, but at the level of the procedural rhetoric, aesthetics, and poetics encoded in a work. We do not believe in teaching a narrow facility with particular tools, although our students also learn all of the usual applications for 2D, 3D, web design, database, and video work. Instead, we emphasize computational structures and the computational methodology of abstraction so that students learn to think in the language of the medium.

We also require that students study visual culture, graphic design, moving images, information design, and interaction design. We offer electives in legacy media and in multiple genres of digital media including Experimental Media, Expressive Virtual Spaces, Interactive Narrative, and Mixed Reality Environments. We have multiple game-specific courses at the undergraduate and graduate level, including Game Design as a Cultural Practice, Game AI, and Game Programming. We continue to refine and expand these offerings. Although our graduate students serve a required internship and our undergraduates are in demand as well, we do not believe in sending students to game companies as a substitute for a curriculum. We are focused on giving them a breadth and depth of learning that will equip them for a career that will see many changes in technologies and techniques, but a continued need for an understanding of the underlying principles of digital design.

Student work within the program is both directed and autonomous. At the graduate level, the Project Studio course, required of all students, involves them in faculty-directed research projects that have a past and a future, ensuring that even those students who are only in the program for the two years of Masters Study get experience in well-formed research questions and sophisticated practices of investigation. Project Studios involve a wide range of technologies, from interactive television to augmented or virtual reality. Several of them focus on game design, game spaces, and interactive storytelling. Some project studio groups include undergraduate researchers, a practice we expect to expand as our Computational Media B.S. degree, inaugurated in Fall 2004, grows.

In addition, graduate students are required to conceive and execute an original project or to write a single-authored masters thesis. This gives them the opportunity to explore design questions in depth. Among the notable recent masters theses were Gonzalo Frasca's on "Videogames of the Oppressed,"³ and Chaim Gingold's "Miniature Gardens and Magic Crayons: Games, Spaces, World."⁴ Both of these theses link the creation of actual games and authoring environments with a theoretical perspective on what

games are and could be. Gingold's thesis is a significant model of the productive relationship between the games industry and a university. Gingold worked as an intern for Will Wright at Maxis, between his first and second year of graduate school, and Wright, the designer of *Sim City* and *The Sims*, served as one of the readers on his thesis. Although the issues Gingold was grappling with echoed some of Wright's concerns, the thesis had no commercial value to Maxis. It was part of a common effort to think through questions of game structure and procedural authorship.

The Experimental Game Lab

Because the study of games involves multiple faculty members and students at the undergraduate, masters, and Ph.D. level, and because one must play and make games in an atmosphere that supports serious investigation, Georgia Tech established the Experimental Game Lab, founded and currently directed by Michael Mateas.⁵ Here is its mission statement: The Experimental Game Lab explores the frontiers of gaming. In this interdisciplinary lab, computer scientists, designers and artists work together to push the boundaries of existing genres and create new genres of electronic games. To accomplish this mission, the EGL pursues three interwoven strands: • novel game designs that create new player experiences; • new technologies, particularly AI technologies, that enable previously impossible designs; • investigations of how games function as a medium, including social, cultural and representational aspects of games. While we're excited by all the activity and energy in the game scene, we're impatient with the current state-of-the-art and eager to see the future of gaming. At the EGL we're helping to create that future. The EGL is a home for many game-related activities in the department, including the weekly EGL Seminar. Each week a student presents a different game, and leads a group discussion on the analysis and design questions related to the game. It is also home to the Game Ontology Project, which is aimed at describing the design space of games by identifying the abstract commonalities and differences in design elements across a wide range of concrete examples, clarifying what is meant by the common language used to describe games, terms such as "level," "shooting," "game world," etc. The Game Ontology Project is part of the larger enterprise of articulating a common language for critical discourse about games. The need for a more precise and expressive design language is a recognized need of the professional game design community, and one of the most important ways in which academia and industry can learn from one another (cf. Murray's "The More We Talk").

As we write this, we are in the spring semester of 2005, about two-thirds of the way through a year that has brought the inauguration of a new undergraduate program in Computational Media and a new Ph.D. program in Digital Media. Several members of the faculty are writing text books as they teach, and teaching courses that have never been offered before at Georgia Tech or anywhere else. As we grow and seek to hire new faculty members, we face the problem that there are no other programs producing Ph.D.s in this field, and we cannot train our own students fast enough to hire them. We feel a bit alone at the edge of a frontier, a heady feeling coupled with exhaustion and disorientation. We expect this situation to change drastically over the next five years, and to discover more and more neighbors. As programs in digital media and games proliferate, we hope that the Georgia Tech program can serve as a useful model, and we look forward to learning from the experiences of others.

In other parts of the academy, study and practice are sadly closed off from one another. Film Production is often divorced from Film Study, Art Studio from Art History, Writing from Literature. Such divisions weaken both sides. Because of the power of digital media itself, which lets us organize and present information with more flexibility and power, we have an opportunity to avoid these divisions in Digital Media programs. We can aim at producing students who are procedurally literate, visually literate, and literate in print culture. Since we, who are teaching in the field, were all trained in narrower traditional disciplines, perhaps the first step in doing so is to turn to our colleagues not merely to form interdisciplinary teams, but to explore more deeply what we can learn from one another.

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Endnotes

1 See, for example, Mateas and Sengers; Mateas; and Mateas and Stern.

2 To read more about the relationship between play and narrative, see Murray (1997) and Murray (2003).

3 Available at <http://www.ludology.org/articles/thesis>.

4 Available at <http://www.slackworks.com/~cog/writing/thesis>.

5 For more on the EGL, please visit <http://egl.gatech.edu>.

Revisiting Georgia Tech and Digital Media

In spring 2005 we were at a significant milestone in the development of our program, having just established our Ph.D. in Digital Media and our joint B.S. in Computational Media, and about to rechristen our twelve year-old MS from Information Design and Technology to Digital Media. These degrees have grown quickly: the B.S. in Computational Media is approaching 300 students, and the Digital Media graduate program enrolls over two dozen doctoral students and manages over \$1.3 million in sponsored research funding annually.

The addition of an undergraduate program has both challenged and improved our focus in digital media generally and game studies in particular. The opportunity to train students in computational media beginning in their freshman year has created a large new crop of students whose critical and computational faculties are well-honed by the time they graduate.

Now, in fall 2010 we are again at a significant milestone, having just moved into our 8000 square foot laboratory and office space in Georgia Tech's Technology Square Research Building, an event which marks the end of Janet Murray's 10 years as Director of Graduate Studies and the beginning of Ian Bogost's leadership in that role. We are aware of the need to continuously revise what we are doing and adjust not only research but also teaching to an evolving field.

As in 2005, we are a strong, humanities-based group distinguished by our commitment to uniting theory and practice. As we predicted in 2005, we now have more company in the field, including the program that our former colleague, Michael Mateas is now a part of UCSC. The scope of game design studies has broadened in the past five years, and we have also broadened our research scope to a wider range of platforms and practices. Our program is not limited to game design and game studies, but covers a broad spectrum of digital media forms. That said, games continue to be a crucial part of our research.

We have added new colleagues since 2005. Celia Pearce, author of *Communities of Play* (2009), studies and creates multiplayer game environments; Brian Magerko explores artificial intelligence approaches to story-games and educational games. They have joined Bogost and Nitsche in teaching courses in game design at the undergraduate and graduate level, and Pearce has been directing the Experimental Game Lab as a resource for research and teaching. Two other new colleagues are not centrally concerned with game design, but they are also including game

Ian Bogost, Janet H. Murray,
Michael Nitsche
Georgia Institute of Technology

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Scott Olson

Dr. Scott Robert Olson is a former Chairperson and CEO of the International Digital Media and Arts Association and currently serves as Interim Vice Chancellor of Academic and Student Affairs for the Minnesota State Colleges and Universities system. He has published two scholarly books, 29 book chapters, and 21 journal articles in publications in the United States, Canada, China, Korea, Poland, Russia, and India. He has delivered over 100 papers at conferences in Brazil, Canada, China, Denmark, Germany, Ireland, Korea, Poland, Taiwan, and throughout the United States. He won an Emmy Award and a Cine Golden Eagle award in 2004 as Executive Producer of a documentary film about learning in the digital age. His Ph.D. is from Northwestern University in Evanston, Illinois.

Digital Deontology

Scott R. Olson

Interim Vice Chancellor of Academic and Student Affairs,
Minnesota State Colleges and Universities system

What do a bootleg download from Morpheus, the appearance of Hayden Christenson as Anakin Skywalker at the end of the 2004 remastered version of the film Return of the Jedi, and a strangely familiar undergraduate paper all have in common? This sounds like the start of a bad joke, and maybe in a way it is. All three are the products of digital technology and all three raise ethical issues that put strains on our conventional approaches to ethics. In their ethereal, protean, and mimetic way, these examples challenge traditional Western ideas of ownership, because property evolves over time as a concept emergent from particular economic, cultural, and social forces. Contemporary ideas of ethics are, well, contemporary, and have not always been this way. This ought to lead the cautious among us to conclude that they will not be this way forever after, either.

Understanding how digital environments challenge accepted practices of ethics requires an understanding of those practices. There are several commonly accepted ways of organizing the thinking about ethics, or Deontology. The two generally used in the professions, and in professional education at colleges and universities, are variants of deontology called Rule Deontology and Act Deontology. Rule Deontology is the area of ethics in which a set of guiding principles or maxims guide decision-making and behavior, such as the Ten Commandments or the Statement of Values and Code of Ethics for Nonprofit and Philanthropic Organizations. One such rule might be “never deceive.” Ideally, these rules transcend situations and may be applied consistently over time in any manner of circumstance.

Act Deontology, by contrast, is rooted in and arises from particular situations. The idea behind Act Deontology is that events may present circumstances in which prescribed rules do not adequately address or in which rules are not appropriate. This is sometimes called “situational ethics,” and derided as such by those who hold to a rules-based approach. On the one hand, Act Deontology can give the appearance of no guiding principles at all. On the other hand, one can certainly imagine situations in which following a seemingly appealing rule such as “never deceive” may lead to a poor ethical decision, for example a scenario in which a Nazi SS Officer asks a Belgian man if he is hiding a Jewish family in his home. Assuming that there is such a family concealed there, is it wrong in this situation for the man to deceive the Nazi? The situation seems to warrant suspension of an otherwise ethical rule.

Another approach to ethics that has especially strong traction in the digital age is Teleology. A teleological approach to ethics would think not so much about the rules or the act itself, but about the ends or results of that act, its consequences. To apply teleology to the same example, the question is not whether the “never deceive” rule is moral, or whether the act of deceiving is moral, but whether the consequences of deception are good or bad. To the teleological mode of approaching ethics, it matters more whether the concealed family is arrested than what the particular actions of the Belgian man might be. All three of these approaches, act deontology, rule deontology, and teleology, are helpful in understanding ethics in a digital age, but all three are challenged in new ways.

This challenge occurs because the digital media create a different set of ethical problems than analog media. The elements of the challenge seem to be tangibility (the extent to which content is tied to a particular physical manifesta-

tion), fungibility (the extent to which content is obligated to permanence), and verisimilitude (the extent to which content resembles nature). The tangibility problem arises from the fact that digital media and art lack the tactility and physicality associated with the forms that have preceded them throughout human history. Binary data, the stuff of digital media and art, cannot be seen or felt in the way that the stuff of their analog ancestors can be, the paint and paper and pen and ink and canvas and bow and string and video tape and so on that characterize how content producers did their work until recently. The fungibility problem arises from an essence of digital media and art that allows content to be endlessly manipulated without corruption of the original source material. Analog media are always in a sense permanent in that a particular iteration exists, some physical manifestation of the content that cannot be undone, whereas with digital media, nothing need ever be permanent, but is eternally adjustable in various iterations without affecting the original. So, fungibility is the property of being easily mutable. The verisimilitude problem arises from the ability of the digital media to mimic life, to appear “real” through the use of light and movement. Synthetic digital content is easily mistaken for nature itself, and the tools for the creation of an appearance of reality are only getting more powerful. These three aspects of digital media and art, their tangibility and fungibility and verisimilitude, in essence their ethereal and protean and mimetic natures, are the source of many ethical conundrums.

An example of the tangibility problem is seen when music lovers who would otherwise never think of shoplifting a CDs from a record store think nothing of downloading bootlegged MP3s from Morpheus. The consequences to the artist and manufacturer are essentially the same, yet peer-to-peer file-sharers can articulate any number of reasons why downloading is moral but shoplifting is not: my own students have argued that it isn’t really shoplifting if no “thing” is lifted (because, supposedly, digital data is not “real”); or that one little download is so insignificant as to be harmless; or that artists and record companies are too rich anyway and downloading their work without paying for it is a kind of noble theft a la Robin Hood. These eRobins seldom seem to share their downloads with the truly needy in their ‘Hood, however. An example of the fungibility problem is the way that digital content lends itself to the insertion of things that were not there in the original content and to the removal of things that were there. The ability to place products and logos into images using digital technology raises significant ethical questions, especially in situations where the product placement was not originally there, such as the insertion of a logo into the backboard of a live base-

ball game that is not actually there to be seen by the fans in the stands, or the insertion of a contemporary consumer good into a classic film for the purposes of product placement advertising. The opposite is also possible: the digital elimination of something that was really there, such as when news companies blur logos of competitors that might coincidentally appear in a live shot, or in a more banal fashion, clean-up telephone wires in journalistic photos using Photoshop. The fungible quality of digital media also leads to the ability to tweak existing works of art or entertainment endlessly, such as the way George Lucas has refined and restructured the original Star Wars movies. Digital art does not need to quicken like the Mona Lisa into a particular manifestation, but can morph into endless permutations and iterations.

Examples of the verisimilitude problem are somewhat less plentiful because, unlike the essential qualities of tangibility and fungibility, which simply are inherent in the digital medium, the mimetic qualities of digital art exist on a continuum on which they continue to advance. In other words, the ability of digital technology to render nature accurately continues to get better and better. This raises interesting questions about what is real and what is not, about the whole notion of “real,” and about our obligations to the real. The use of digital sets in cinema production is now commonplace, as actors play out their roles in front of blue screens, or increasingly where the actors are supplanted by photorealistic versions of themselves for the more harrowing segments, or simply supplanted in their entirety. When children play a game of makebelieve, especially when parents play it with them, there is generally a duty to indicate that it is all pretend, that no one will really get hurt, that we can’t really fly, and so on: an obligation to say to the others playing the game, in a sense, that “this is not real.” The verisimilitude capabilities of digital media not only make the play seem real, but relax the duty to reveal that it actually is play. The fourth wall is rebuilt of pixels.

So, three different modes of doing ethics – rule deontology, act deontology, and teleology – confront three new and synthetic content epistemologies – intangibility, mutability, and falsification. From this confrontation emerges interesting new ethical problems unique to the digital world: the ethics of plagiarism in an era of sampling, teleological thinking that breaks down when applied to digital pornography, the ethics of forwarding and blind copying email, the ethics of convergent journalism, the ethics of open source code, and other deontological frontiers.

Ownership is one of the main concepts that tangibility, fungibility, and verisimilitude call into question, which makes sense, because ownership rights and responsibilities are a foundational aspect of many ethical systems. To whom do ideas belong? Who owns content? Do innovations in technology enable new ways of thinking about ownership, and therefore lead to inevitable conflicts between competing interests? Or is it the pressure to appropriate, to possess, driving the technological innovations?

The answers to these questions are deeply rooted in culture, as indeed are the systems of ethics and law we use to determine right and wrong. Skirting the arguments about transcendent ideas for a moment, certainly the codifications of ethics exist within and emerge from social, economic, cultural, and Digital Deontology even technological forces. There is a lively debate on which way the causality flows, but the consolidation of technologies that resulted in Gutenberg’s printing press and the subsequent rise of mass produced book certainly correlates with dramatic changes in Western culture, including the rise of literacy, Protestantism, the middle class, individualism, the nation-state and so on. Whether the book caused these changes, or was caused by them, or (more likely) coevolved in a set of particular responsive exigencies, is a debate best reserved for the next IDMAA national conference.

It is reasonable to conclude, however, that with the changes surrounding book culture came a new set of ethical considerations with regard to communication. Prior to the mass-produced book, the ownership of intellectual property was conceived of differently. As the culture transitions from mass analog communication to point-to-point digital communication, maxims derived through deontology or teleology will likewise undergo transformation. If the printed book coincides with a dramatic rethinking of communication ethics, then we might conclude that other innovations in technology likewise coincide with changes in normative ethics. The growth of television correlates with dramatic changes in Western culture, and as that culture changed, it is reasonable to suppose that ethical frameworks did, too. And if television correlates like the book does, then what of the symbiosis between ethics and digital technology: the deontology of the Internet, of video games, of digital animation? To put it simply, if there were ideas and actions that were unethical before the development of the printed book that became perfectly ethical after its dissemination, or to fast forward in time, were “wrong” before the invention of television but are “right” now, or vice versa, migrating from moral to immoral as the culture

changed, then what sort of similar changes in our ethical foundations are we undergoing at this digital moment? Digital technology certainly has different elements from other communication technologies that make it ripe for challenging our deontological preconceptions. For example, the digital world is characterized by content available on demand, the subsequent notion of entitlement to content, and the modeling of nature as discreet and not continuous. Do these cultural characteristics of digital media nudge us toward different ethical assumptions?

That bootleg from Morpheus, that jarring appearance of a new and improved Anakin, and that cut-and-paste undergraduate paper all compel us to consider whether our notions of theft, of permanence, and of authenticity can hold up in a media environment characterized by intangibility, fungibility, and verisimilitude. It's no joke. The conversations about digital deontology had best begin.

Digital Deontology Redux: Recalibrating the Moral Compass

Scott R. Olson

Interim Vice Chancellor of Academic and Student Affairs, Minnesota State Colleges and Universities system

Ineluctable modality of the visible and audible.

27

Frankenstein, an analog creature in an analog world, was the modern Prometheus, but the digital media are the modern Proteus. The digital media shift time and form. They are recombinant.

In the article “Digital Deontology” some years ago, I posed this question:

If there were ideas and actions that were unethical before the development of the printed book that became perfectly ethical after its dissemination, or to fast forward in time, were “wrong” before the invention of television but are “right” now, or vice versa, migrating from moral to immoral as the culture changed, then what sort of similar changes in our ethical foundations are we undergoing at this digital moment?

The answer now seems clear: our moral compass needs recalibration.

I am not a defender of plagiarism or other forms of dishonesty. But intention has always been at the heart of morality. If the intention of “sampling” is not malevolent or deceptive, then it may not be immoral.

Contemporary ideas of ethics are contemporary, and have not always been this way. This ought to lead the cautious among us to conclude that they will not be this way forever after, either. Gutenberg ushered in analog technology, which in turn engendered an ethical frame suited to those technologies that did not apply in the medieval world or antiquity. Now as digital technology replaces analog technology, the rules are changing again, reflective of what the new technology allows. A 12th century monk could make a copy of a text by hand without raising any ethical issues, but a 20th century monk could not do the same.

All three of these approaches, act deontology, rule deontology, and teleology, are helpful in understanding ethics in a digital age, but all three are challenged in new ways.

The elements of the challenge are:

Tangibility, defined as the extent to which content is tied to a particular physical manifestation. The tangibility problem arises from the fact that digital media and art lack the tactility and physicality associated with the forms that have preceded them throughout human history. An example of the

tangibility problem is seen when music lovers who would otherwise never think of shoplifting a CDs from a record store think nothing of downloading bootlegged MP3s from Morpheus.

Fungibility, defined as the extent to which content is obligated to permanence. The fungibility problem arises from an essence of digital media and art that allows content to be endlessly manipulated without corruption of the original source material. An example of the fungibility problem is the way that digital content lends itself to the insertion of things that were not there in the original content and to the removal of things that were there.

Verisimilitude, defined as the extent to which content resembles nature. The verisimilitude problem arises from the ability of the digital media to mimic life, to appear “real” through the use of light and movement. This raises interesting questions about what is real and what is not, about the whole notion of “real,” and about our obligations to the real.

So, three different modes of doing ethics—rule deontology, act deontology, and teleology--confront three new and synthetic content epistemologies—intangibility, mutability, and falsification.

From this confrontation emerge interesting new ethical problems unique to the digital world:

- > *The ethics of plagiarism in an era of sampling*
- > *The ethics of forwarding and blind copying email*
- > *The ethics of convergent journalism*
- > *The ethics of open source code*
- > *The ethics of “ownership”*

- > *Apple's control of iPhone and iPad apps vs. Google open-web*
- > *Super Mash Bros*
- > *Recombinant artifacts*
- > *Convergent smart phones ... Avatar ... ownership issues*
- > *iTunes ... no albums .. no long-form*
- > *Netflix on demand ... streaming*
- > *3D TV sets*
- > *Wii*
- > *Skype ... death of the local ... Jetsons*
- > *Twitter/Facebook*
- > *Texting/Sexting*
- > *Kindle ... eBooks*
- > *Turn It In is a plagiarism tracker that many university*

professors use to track digital culprits. Students submit papers to the Turn It In website, which then analyzes the paper for the extent to which it is original work by checking it against a massive database of existing writing. A paradox emerges with Turn It In, however, that exposes the challenges of analog ethics in a digital world. Using analog ethics, students have a right of ownership to their paper. Screening papers for plagiarism through Turn It In means that the website retains a digital copy of the paper to use in its database for future originality testing. Students object that in checking their work for originality, they cede rights to its ownership. So the digital world has pitted two analog world values in direct competition, originality vs. ownership, in an irreconcilable way. In a digital deontology, these values may not be in conflict, or may not even be values.

Full disclosure: earlier in this essay I sampled—appropri-

The codifications of ethics exist within and emerge from social, economic, cultural, and even technological forces. The consolidation of technologies that resulted in Gutenberg's printing press and the subsequent rise of mass produced book correlates with the rise of literacy, Protestantism, the middle class, individualism, the nation-state and so on.

ated—a famous line from a great novel, and purposefully did not attribute it. Being unable to escape my own analog roots, I will attribute it now: it is from the third chapter of *Ulysses* by James Joyce, the chapter nicknamed “Proteus.” Furthermore, I have sampled whole pieces of the prior publication of “Digital Deontology” and dropped them in this new essay. Protean recombination.

Digital Pornography—Media Ethics Class

The codifications of ethics exist within and emerge from social, economic, cultural, and even technological forces. The consolidation of technologies that resulted in Gutenberg’s printing press and the subsequent rise of mass produced book correlates with the rise of literacy, Protestantism, the middle class, individualism, the nation-state and so on.

With the changes surrounding book culture came a new set of ethical considerations with regard to communication.

So, there is a new deontology, a digital deontology. There will be rules, because there are always rules, but these new rules are still emerging. These seem to be deontologies of the new digital ethics:

- > *Sampling is ethical, but appropriation of something in its entirety is not.*
- > *Attribution is up to the reader or listener, not the author.*
- > *Appropriation of self and of others is the same thing.*
- > *It’s all fair use.*

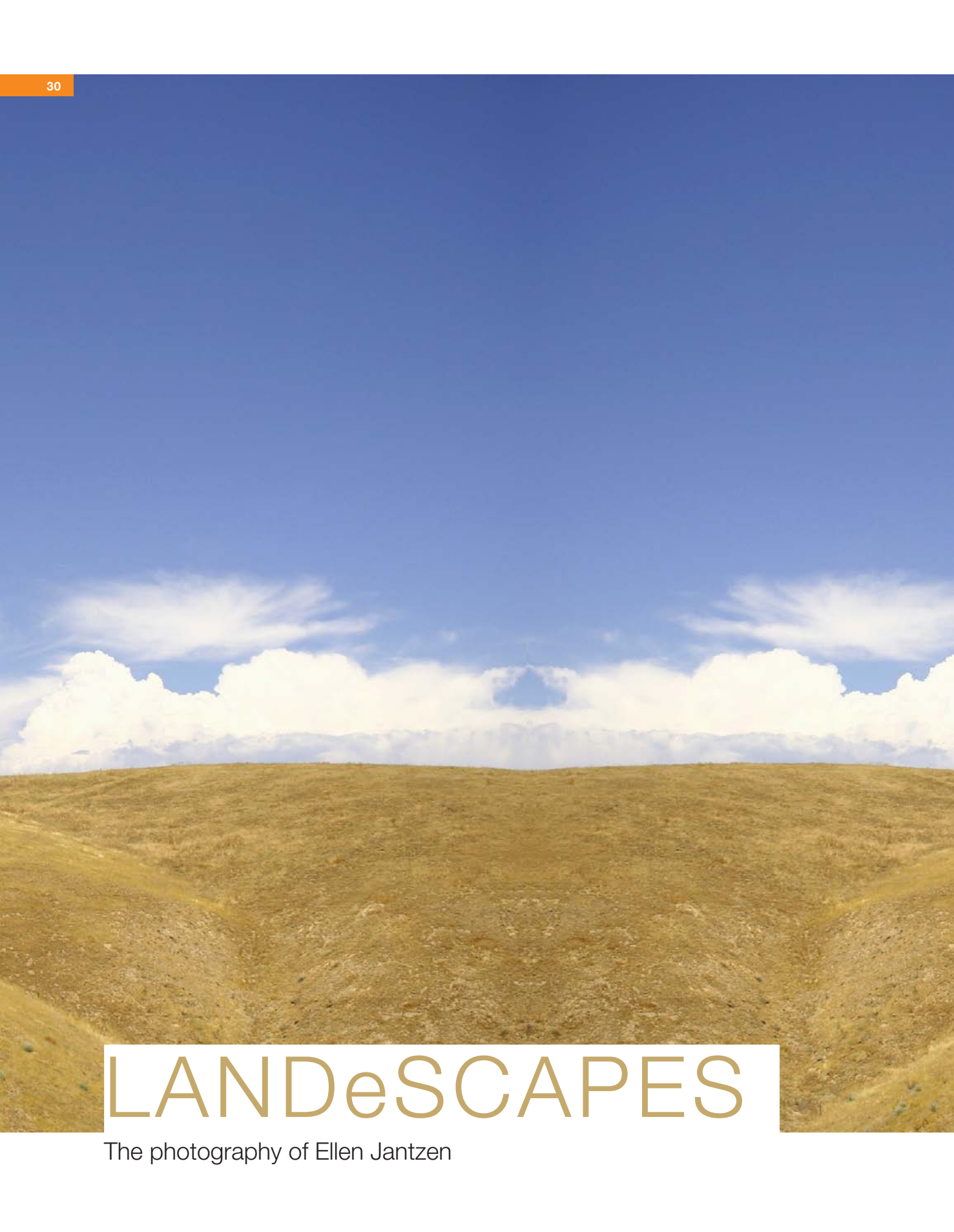
What is emerging here is a medieval notion, a pre-analog notion, of right and wrong. Imagine.

I don’t necessarily endorse these new rules, but see them emerging nonetheless, without much ability for analogists to stop them.

Thought through my eyes.

We turn our face over our shoulder, rere regardant. Moving through the air high spars of a three-master, her sails brailed up on the crosstrees, homing, upstream, silently moving, a silent ship.

The new rules are coming.



LANDeSCAPES

The photography of Ellen Jantzen



Fire Mountain, (digitally manipulated photograph, output as archival inkjet, limited edition). Available at matted dimensions of 18"H x 26"W, 2006



Gateway, (digitally manipulated photograph, output as archival inkjet, limited edition). Available at matted dimensions of 20"H x 26"W, 2006

Ellen Jantzen

Ellen Jantzen revisits concepts of space, time, and memory in her piece that reflects back on earlier work she gave us; her own creative memories have informed her current artistic process and she shares with us some of this work. Ellen's photographs, both past and present, demonstrate to us the fragility of the digital image and how digital photography's mutability paradoxically can create a strong sense of how space and time operate to ground our sense of the world around us. Ellen's ability to reflect on her artistic process is a prime example of IDMAA's goals to expand its own sense of what is meant by art and what we expect from "the image" and we are pleased to bring you more from this provocative artist

Space/Time/History as Subject for Artists

Ellen Jantzen

The tradition of linear forward marching time is backward, from the standpoint of the Aymara people of South America. They see history as lying in front of them. Because history consists of known events, they can “see” it. In their language *nayra mara* means “in past times or history,” but translates literally as “time in front.” Conversely, because you can’t see what is behind you, it is unknown. The Aymara see this as the future, since they haven’t “seen” it yet.¹

The Aymara’s concept of forward/past opens doors for artist to explore the relationships between past and future in new intriguing ways especially through photography, which has been traditionally viewed as a method of recording historical facts, in essence capturing history for posterity.

Photography has long been viewed this way and relied upon as a documentation tool, but actually photos have been altered since the beginning of the craft, thus subverting history as a result. With today’s digital technology the ability to alter photographs (and the perception of reality) has escalated due in part to the digital camera but mostly through computer/software advancements. This is where the artist can really enter the picture, so to speak, to experiment with technique and subject. Photography, in the hands of a conceptual thinking artist, can demonstrate anomalies of space and time.

Take for instance my recent photographic explorations in the series *LANDeSCAPES*. Here I deal with the past/future, front/behind issues as well as findings from cosmology and physics such as space/time warps and parallel universes. In essence, I photograph the landscape that lies before me while capturing the landscape behind me by using mirrors. I am particularly interested in the boundaries of differing scenic features like, desert/mountain, land/sea, and wilderness/developments. By using mirrors, I am able to show two points of view at the same time. I (as the documentarian) am located between these two views. Essentially, I am in each photograph (sandwiched between realities) yet not visible. Only my points of view are apparent.

In this series, I am striving to address how we view history; is it what lies before us (as in Western thought) or what lies behind us, as the Aymara believe. Perhaps both are true; perhaps reality lies in between, or on a parallel plane. In some of my photographic pieces, I have digitally pierced the mirror to create a portal, a door, from one reality to the other.

1 Nathan Bierma, *Special to the Tribune*, “South America’s Aymara Put Future Behind Them,” *Chicago Tribune*, July 12, 2006



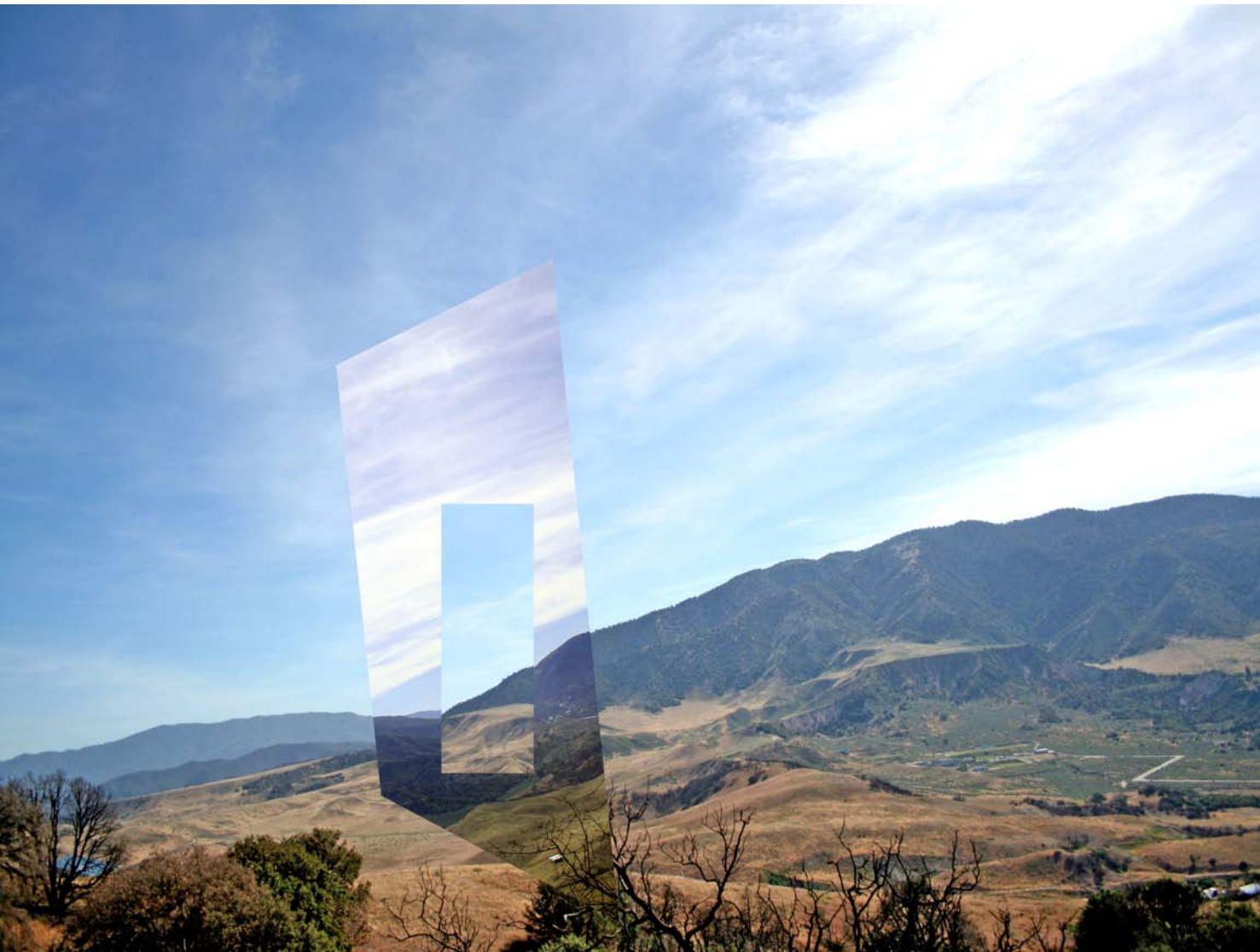


Last Time-Next Time, Two, (digitally manipulated photograph, output as archival inkjet, limited edition). Available at matted dimensions of 20"H x 26"W, 2006

San Andreas' Fault, digitally manipulated photograph, output as archival inkjet, limited edition). Available at matted dimensions of 15"H x 26"W, 2006







Multiple Reality, (digitally manipulated photograph, output as archival inkjet, limited edition). Available at matted dimensions of 20"H x 26"W, 2006





Reaching Beyond Reality, (digitally manipulated photograph, output as archival inkjet, limited edition). Available at matted dimensions of 20"H x 26"W, 2006

Passageway to Past-Future, (digitally manipulated photograph, output as archival inkjet, limited edition). Available at matted dimensions of 20"H x 26"W, 2006





Space/ Time, A Revisited History

Ellen Jantzen

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I am still intrigued with the Aymara's concept of forward/past and use this often in my photographic explorations. Originally, I wrote of the Aymara people of South America as seeing history lying in front. In their language "nayra mara" means "in past times or history," but translates literally as "time in front." Because you can't see what is behind you, it is unknown. The Aymara see this as the future, since they haven't "seen" it yet.

My original article featured my pictorial exploration (LandEscapes) where I photographed a landscape that lies before me, while capturing the landscape behind me by using mirrors—thus showing two points of view at once, time in front and the unknown (behind).

Today my work has evolved considerably to include the human form. I continue to address the natural world of landscape, but now my emphasis is on how a person adapts to their environment, how they are absorbed and changed by it. Having recently moved to the Midwest after living in the physically dynamic Southern California for 20 years I was, at first, unimpressed with my new more subtle surroundings. But this move impacted my work by forcing me to deal with the reality of a given place. It has helped me pay attention to and appreciate the details of this diverse environment.

Having always been intrigued with various aspects of reality, I use photography as the medium to help me reveal/obscure truths. Traditionally, photography was viewed as an honest replication of the real world. But, as we all know, even from its inception, photographers used their medium to alter, accentuate and eliminate aspects of the "authentic." With today's digital technology the ability to alter photographs (and the perception of reality) has escalated due

in part to the digital camera but mostly through computer/software advancements. This is where the artist can really enter the picture, so to speak, to experiment with technique and subject. Photography, in the hands of a conceptual thinking artist, can reveal anomalies of space and time.

At first, I began my newest series by placing Michael, my husband, in various landscapes and in various poses to both highlight and obscure his presence. Through digital manipulation, I altered the original staged setup (taken in a given location and time) to create a blending of Michael with the landscape to show him fitting-in, disappearing, blending-in, and perhaps, ultimately embracing the environment in a timeless fashion.

In one recent photographic exploration I dealt with the issue of time more specifically. I took five photos of Michael in different locations on the same day and collaged these five photos together to create one portrait. Each base photo represents a specific time and place with the resulting composed portrait bridging time/place. Another related exploration entailed taking photos of Michael in one location but on five different consecutive days. Now each base photo represents a specific time, but the place remains the same, resulting in a composite portrait bridging time only. I find it fascinating to know a whole day of life experiences are represented in each portion of the completed portrait.

I have also begun photographing headstones in cemeteries and using these as stand-ins for the human form. Since headstones represent a person who has passed, my obscuring and blending with the natural environment supports my intrigue with the vagaries of reality.

This brings me back to the issues of space, time and history. These have always been central concerns for people—perhaps bringing forth religious ideologies in an attempt to find answers to the questions of why we are here and where do we go when we die. More recently, discoveries in quantum physics that posit multiple or parallel universes seem to indicate attempts to find answers to these age-old questions in a scientific manner. I hope my photographic explorations will, in some way, help people visualize these issues.













As we look forward,
we anticipate the
continued growth of
games' importance
and popularity in
contemporary culture.

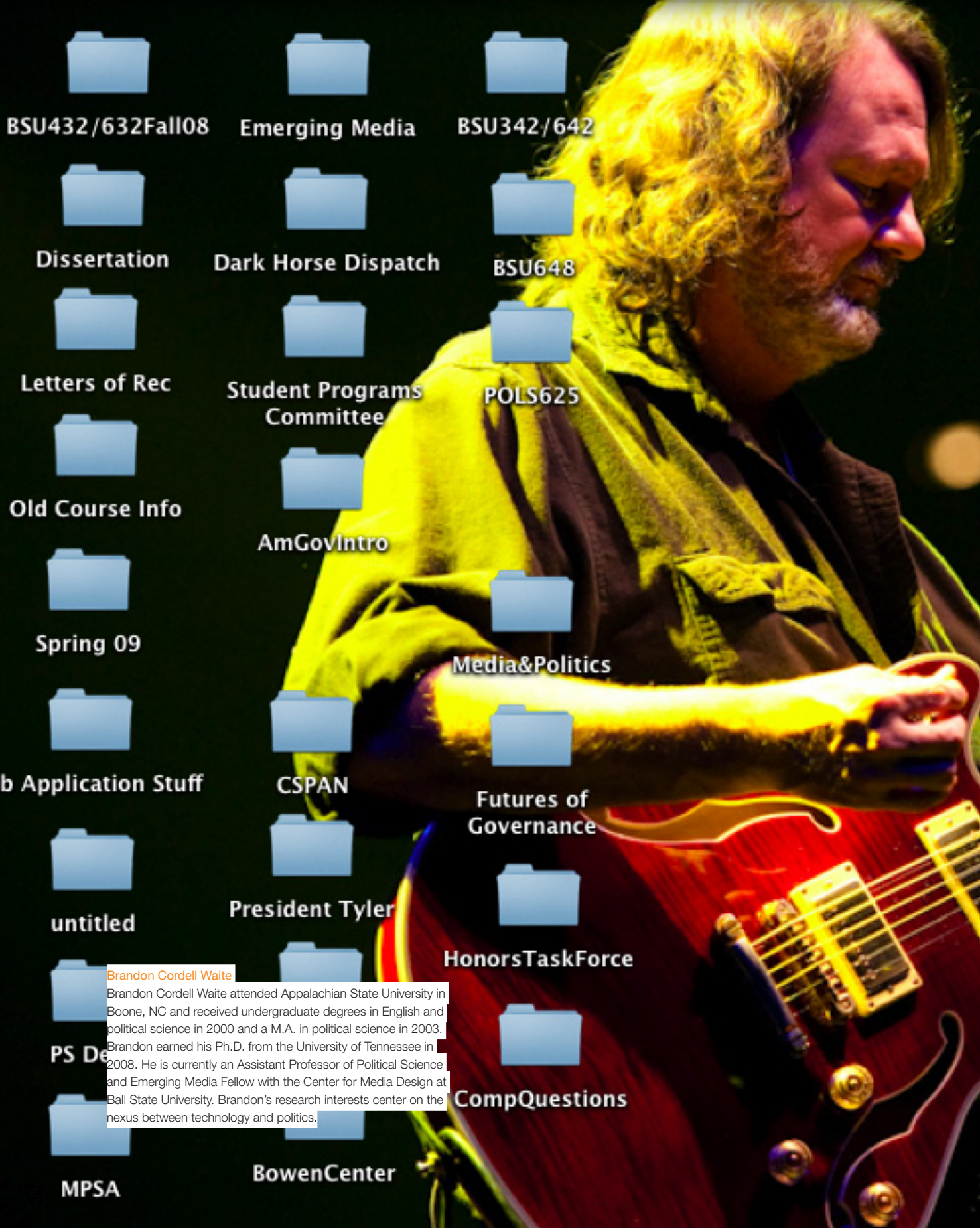
elements in their research: Ali Mazalek has been creating games among other applications of multitouch tabletops and tangible media; and Carl DiSalvo has been exploring playful applications of robots and environmental sensors. In addition, Jay Bolter, one of the founding members of the program, has been creating augmented reality games with Blair MacIntyre, his collaborator in the College of Computing. And the original authors of the 2005 article have also remained active in game design research. Michael Nitsche published *Video Game Spaces* (2009) and has worked on Augmented Reality, mobile, and sensor-based game environments. Janet Murray has been working on games within the context of her interactive TV group, and writing about games as a model of interaction design in her forthcoming textbook, *Inventing the Medium*. Ian Bogost has published *Unit Operations* (2006), *Persuasive Games* (2007), *Racing the Beam* (with Nick Montfort) (2009), a study of the Atari platform, and *Newsgames* (with his doctoral students Simon Ferrari and Bobby Schweitzer) (2010), as well as creating several well received experimental games, including *Cow Clicker* (2010) a Facebook-based game that is a response to *FarmVille*. Faculty and students have been active in DiGRA, GDC, IndieGames, IndieCade (which Celia Pearce co-organizes), Serious Games, and DAC. The proliferation of conferences and the support of university presses (especially MIT Press) for game studies in the past five years has made research in this new field a viable path, even for junior faculty members on tenure track. Two of our doctoral students have also contributed dissertations to the field: Clara Fernandez-Vara did a genre analysis of adventure games (“The tribulations of adventure games: Integrating story into simulation through performance”); Brian Schrank on games and the avant-garde (“Play Beyond Flow: A Theory of Avant-Garde Videogames”).

The program has also continued its connection with the games industry and placed M.S. students in the field at companies like Electronic Arts and Disney Imagineering. One alumnus, Chaim Gingold, was lead designer on the *Spore Creature Editor* for Maxis. Another M.S. alumnus, Gonzalo Frasca, received a doctorate from the University of Copenhagen in Game Studies, and returned to his native Uruguay where he runs a successful game company, *Powerful Robot*. Ph.D. alumna Clara Fernandez-Vara has been research director at the MIT-Singapore collaborative GAMBIT lab.

We find it challenging in general to fund the kind of humanities-driven research that we specialize in, but we have been fortunate in finding sources at NSF and in industry. We have also hosted several conferences in this period, which

have brought academic researchers and industry people together. Among these, Ian Bogost and Michael Nitsche, along with John Sharp at the Savannah College of Art and Design, co-organized the Art History of Games Symposium and Exhibition. The event ran in partnership with the Woodruff Center in the heart of Atlanta’s arts district. The conference brought together a unique mix of speakers—from *Doom* creator John Romero to Whitney Museum curator Christiane Paul. 350 attendees from all around the world participated. As an example of the Digital Media program’s commitment to theory and practice, Art History of Games also featured an exhibition of commissioned games by leading game artists Jason Rohrer, Eric Zimmerman & Nathalie Pozzi, and *Tale of Tales*. These titles have since garnered significant commercial success, festival award recognition, and critical praise.

As we look forward, we anticipate the continued growth of games’ importance and popularity in contemporary culture. But rather than seeing that growth as either the development of new and improved forms for existing games, or as the seepage of current games into broader markets, we see videogames as a medium that is expanding in purpose and aesthetics into all walks of life.



BSU432/632Fall08



Emerging Media



BSU342/642



Dissertation



Dark Horse Dispatch



BSU648



Letters of Rec



Student Programs Committee



POLS625



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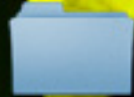
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Media&Politics



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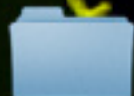
CSPAN



Futures of Governance



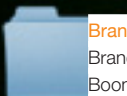
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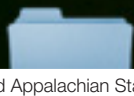
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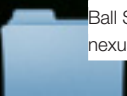
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Brandon Cordell Waite

Brandon Cordell Waite attended Appalachian State University in Boone, NC and received undergraduate degrees in English and political science in 2000 and a M.A. in political science in 2003. Brandon earned his Ph.D. from the University of Tennessee in 2008. He is currently an Assistant Professor of Political Science and Emerging Media Fellow with the Center for Media Design at Ball State University. Brandon's research interests center on the nexus between technology and politics.

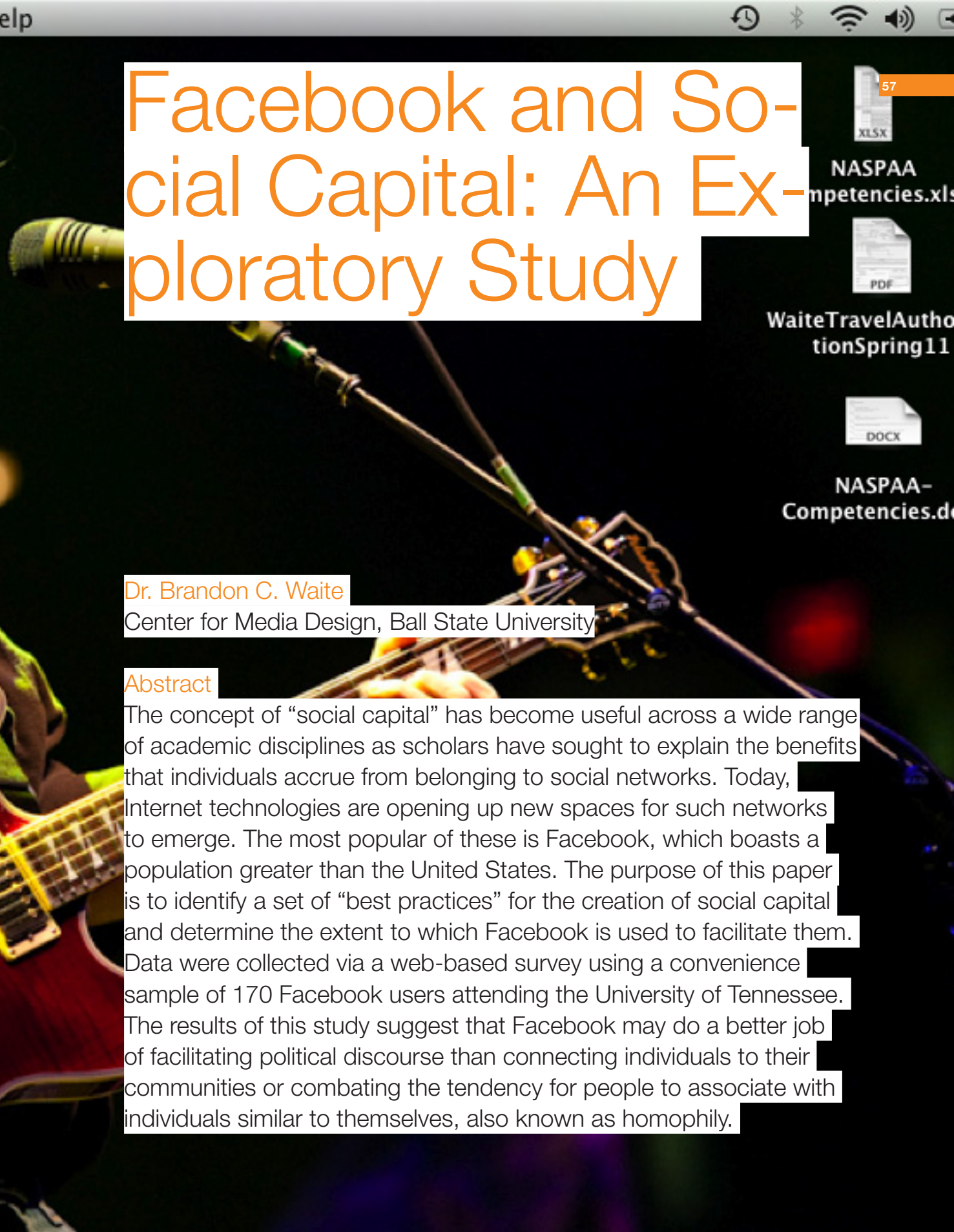


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Facebook and Social Capital: An Exploratory Study

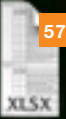
Dr. Brandon C. Waite

Center for Media Design, Ball State University

Abstract

The concept of “social capital” has become useful across a wide range of academic disciplines as scholars have sought to explain the benefits that individuals accrue from belonging to social networks. Today, Internet technologies are opening up new spaces for such networks to emerge. The most popular of these is Facebook, which boasts a population greater than the United States. The purpose of this paper is to identify a set of “best practices” for the creation of social capital and determine the extent to which Facebook is used to facilitate them. Data were collected via a web-based survey using a convenience sample of 170 Facebook users attending the University of Tennessee. The results of this study suggest that Facebook may do a better job of facilitating political discourse than connecting individuals to their communities or combating the tendency for people to associate with individuals similar to themselves, also known as homophily.

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Democratic societies are characterized by their efforts to balance choices and bonding mechanisms, both of which are essential to a healthy democracy. Individualism and personal freedom are enhanced by our ability to make choices, whereas bonding mechanisms strengthen the social cohesiveness and stability of society.¹ These two elements are in constant tension. As individuals enlarge their sphere of choice, the ties that bind them together are weakened.

In an increasingly global and networked society, citizens face the challenge of choosing ways to be simultaneously autonomous *and* tied together. Prominent scholars, such as Robert Putnam,² worry that citizens are struggling to meet that challenge. They argue that much of the social history of the nineteenth and twentieth centuries can be characterized by the dissolution of community and family connections. According to Putnam, the social support networks that linked individuals to one another and to their communities have dissipated. Likewise, positive attitudes towards public institutions and willingness to contribute to the wellbeing of the community have diminished. To buttress his argument the author points to a wide variety of indicators including measures for voter turnout, general feelings of trust amongst citizens, attendance of club meetings, and as the title of his best seller, *Bowling Alone*,³ suggests, the number of individuals joining bowling leagues. All of which, he points out, are in decline. He attributes this trend of civic disengagement to the disappearance of a mobilized and civic-minded World War II generation, pressures put on two-career families, longer commutes to work due to suburbanization, and perhaps most of all, television.

New debates about social capital have emerged in recent years as advancements in personal computing and the Internet have simultaneously increased the choices available to consumers while at the same time providing them with more opportunities to connect with one another. The central thesis of social capital theory is that individuals and societies benefit from the sense of belonging, and the concrete experiences of trust and tolerance, found in social networks. The purpose of this study is to examine

1 Durkheim, Emile. 1953. *Sociology and Philosophy*. Translated by D.F. Pocock. Glencoe: The Free Press.

2 Putnam, R. 1996. The Strange Disappearance of Civic America. *The American Prospect* 24(Winter): 34-48.

3 Putnam, Robert. 2000. *Bowling Alone: The Collapse and Revival of American Community*. New York: Simon & Schuster.

the extent to which Facebook, currently the most popular profile-based online social network, has the potential to enhance social capital.

Capital, Communities and Computers

Tracing its theoretical lineage back to Marx,⁴ capital is part of the surplus value captured by capitalists between modes of production and processes of consumption. Subsequent modifications of the concept retain the basic elements of surplus value and an investment with expected returns. For example, human capital theory (Johnson⁵, Schultz⁶) conceives capital as an investment (e.g., in skills and knowledge) for which returns (e.g., earnings) are expected and negotiated. Likewise, cultural capital theory (Bourdieu and Passeron⁷) posits that a dominated class may generate returns from the acquisition of symbols and meanings produced by the pedagogic actions of a dominant class. The distinctive feature of these theories resides in the potential investment and capture of surplus value by individuals and masses.⁸

Like other forms of capital, social capital enables those who generate it to invest and capture surplus value. As Coleman⁹ explains, "social capital is productive, making possible the achievement of certain ends that in its absence would not be possible." Social capital is not possible without personal capital, which is made up of two components: processing and leverage. Processing refers to the cognitive thinking that enables one to make sense of the world around them. Processing is likely to be shaped by many things including one's age, race and gender. Results become less dependent on resources as one's processing abilities increase. Leverage refers to the ability to raise the productivity of others by using one's own expertise. Producing new knowledge and sharing it with others increases one's leverage, and thus increases one's personal capital.

4 Marx, Karl. 1849. *Wage-Labour and Capital*. Reprinted in 1933. New York: International Publishers Co.

5 Johnson, H. 1960. The Political Economy of Opulence. *Canadian Journal of Economics and Political Science* 26: 552-564.

6 Schultz, T. 1961. Investment in Human Capital. *The American Economic Review* 1: 1-17.

7 Bourdieu, Pierre and Jean-Claude Passeron. 1977. *Reproduction in Education, Society, Culture*. Beverly Hills: Sage.

8 Woolcock, Michael and Deepa Narayan. 2000. Social Capital: Implications for Development theory, research and policy. *World Bank Research Observer* 15(2): 225-249.

9 Coleman, James S. 1988. Social Capital in the Creation of Human Capital. *American Journal of Sociology*, 94: 96.

As individuals' personal capital increases, so does the social capital of the groups, or communities, those individuals belong to.

The concept of social capital has become routinized across an extraordinarily diverse set of disciplines.¹⁰ Although definitions and measurements of social capital vary significantly, there is general agreement that the norms and networks embedded in social structures help shape and explain human behavior. This theme extends to the development of identity¹¹ and aspirations¹², cognitive performance¹³, reputation maintenance¹⁴, and the ability to cope with illness.¹⁵ Likewise, social capital has been linked to participatory democracy¹⁶, accountability¹⁷ and empowerment.¹⁸

From its outset, the Internet sparked a sense of optimism with respect to community engagement and democratic ideals amongst many including Becker,¹⁹ Dahlberg,²⁰

Grossman,²¹ Markham,²² and Rheingold.²³ According to these scholars, technologies reflect the values and goals of those who use them and the primal desire to socialize has been the driving force behind the Internet. This is evident in the abundance of email providers, chat rooms, message boards, multi-player games and blogs. Individuals use these technologies to connect with each other, creating loose-knit communities. In his groundbreaking book, *The Virtual Community*, Rheingold paints a positive assessment of the Internet's ability to bring strangers together to form intimate online networks in which users have a shared sense of collective identity.

Other social theorists were initially pessimistic about virtual communities on the Internet including Davis,²⁴ Koch,²⁵ Oblak,²⁶ Slevin,²⁷ and Wilhelm,²⁸ among others. At issue is whether or not one can have a living relationship within a virtual space. Do we have a mutual stake in each other's lives when the "other" is only a virtual presence or representation? Can we sustain the human virtue of neighborliness when the virtual medium permits anonymity and the possibility of continual disconnection? What trusted pattern of behaviors, or social norms, can conjointly be constructed with strangers in virtual communities? These questions, they argue, put into doubt the ability of the Internet to reverse the decline of civic engagement and social capital.

Much has changed since these early assessments of online communities. For example, profile-based online communities that simultaneously supplement and transcend geographic communities have become much more prominent. The most popular of these is Facebook, which boasts a greater population than the United States. Facebook members use the network to update their status, post pictures, share links to websites, and chat with friends both far and near. As such, Facebook enables its users to

- 10 Woolcock, Michael. 2010. *The Rise and Routinization of Social Capital, 1988-2008. Annual Review of Political Science* 13: 469-487.
- 11 Haslam, Alexander. 2004. *Psychology in Organizations*. London: Sage.
- 12 Appadurai, Arjun. 2004. The Capacity to Aspire: Culture and the Terms of Recognition. In *Culture and Public Action*, ed. Vijayendro Rao and Michael Walton, pp. 59-84. Palo Alto, CA: Stanford University Press.
- 13 Hoff, Karla and Priyanka Pandey. 2006. Discrimination, Social Identity and Durable Inequalities. *American Economic Review* 96(2): 206-211.
- 14 Milinski, Manfred, Dirk Semmann and Hans-Jürgen Krambeck. 2002. Reputation Helps Solve the 'Tragedy of the Commons.' *Nature* 415: 424-426.
- 15 Kroenke, Candyce H., Laura D. Kubzansky, Eva. S. Schernhammer, Michael D. Holmes, and Ichiro Kawachi. 2006. Social Networks, Social Support and Survival After Breast Cancer Diagnosis. *Journal of Clinical Oncology* 24(7): 1105-1111.
- 16 Fishkin, James S. 2009. *When the People Speak: Deliberative Democracy and Public Consultation*. New York: Oxford University Press.
- 17 Jonathan Fox. 2007. *Accountability Politics: Power and Voice in Rural Mexico*. New York: Oxford University Press.
- 18 Alsop, Ruth, Mette F. Bertelsen and Jeremy Holland, eds. 2006. *Empowerment in Practice: From Analysis to Implementation*. Washington, DC: World Bank.
- 19 Becker, T. 1981. Teledemocracy: Bringing Power Back to People. *The Futurist* (6): 6-9.
- 20 Dahlberg, L. 2001. Democracy via Cyberspace: Mapping the Rhetorics and Practices of Three Prominent Camps. *New Media and Society* 3(2): 157-177.

- 21 Grossman, Larry. 1995. *The Electronic Commonwealth*. New York: Penguin.
- 22 Markham, Annette. 1998. *Life Online: Researching Real Experience in Virtual Space*. London: Altamira Press.
- 23 Rheingold, Howard. 1993. *The Virtual Community: Finding Connection in a Computerized World*. London: Secker & Warburg.
- 24 Davis, Richard. 1999. *The Web of Politics*, Oxford: Oxford University Press.
- 25 Koch, A. 2005. Cyber Citizen or Cyborg Citizen: Baudrillard, Political Agency, and the Commons in Virtual Politics. *Journal of Mass Media Ethics* 20(2-3): 159-175.
- 26 Oblak, T. 2002. Dialogue and Representation in the Electronic Public Sphere. *Javnost* 9(2): 7-22.
- 27 Slevin, James. 2000. *Internet and Society*, Cambridge: Polity Press.
- 28 Wilhelm, Anthony. 2000. *Democracy in the Digital Age*. London: Routledge.

strengthen reciprocal relationships and hone their civic skills like information gathering,²⁹ communication³⁰ and self-expression.³¹ The purpose of this paper is to examine the socializing activities of Facebook members to determine whether or not they utilize the network in such a way that enables them to capture the benefits of social capital.

These benefits are best captured through individuals' socializing efforts that 1) increase their ties to various levels of society; 2) increase the diversity of their friendships; 3) engage them in political discourse on their networks; 4) engage them with (the profiles of) political actors; and 5) relay political cues. These actions increase the flow of information, facilitate the exertion of influence, and certify the social credentials of individuals in their networks.

Survey Design

The current study utilized SPSS Dimensions' *Mr. Interview*, a comprehensive Web-based application for survey design, data collection and management. Question scales and multiple-choice answers were developed using simple HTML interview templates designed to support multiple platforms and browsers. This instrument was convenient and inexpensive.

Also convenient was the sample population, which was limited to students at The University of Tennessee who receive the Student@Tennessee email newsletter. According to the Office of Public Relations, less than 1% of students choose to unsubscribe leaving nearly 26,000 students, with a minority enrollment of 14%, who receive the email. Although convenient and inexpensive, obtaining significant response rates with Web-based surveys is a *much* greater challenge than with conventional postal surveys. While the current study suffers from some of the typical methodological drawbacks of online research, namely a non-probability sample with an extremely high non-response rate (N=170), the quality of a particular survey must be judged within the context of its stated aims and the claims it makes. The pur-

pose of this pilot study is to obtain clues for future research projects and the author admits its limitations. Although such clues are produced in this paper, the findings of this study must be tempered given that Facebook users at the university level may utilize the site differently from users outside of academia.

Social Capital Best Practices

The ability to capture social capital depends, in large part, on the degree to which individuals are connected to society. For example, Crutchfield et al.³² Kang and Kwak,³³ Lindstrom et al.³⁴ and Teachman et al.³⁵ have all found that residential mobility is negatively correlated with social capital. When individuals do not live in an area for any significant length of time, there are fewer opportunities to develop bonds with their neighbors. Similarly, alienation and loneliness can occur in large cities as well as one becomes anonymous in the masses. Likewise, when urban sprawl forces people to have to commute long distances to work, shop and enjoy leisure opportunities, they have less time to become involved in voluntary associations within their communities.³⁶ Facebook has the potential to mitigate barriers to connectivity, including time and proximity. In order to gauge respondents' perceptions of their "feelings of connectedness to society," survey participants were asked what effect joining Facebook had on their connectedness to their 1) friends, 2) family, 3) neighborhood, 4) community, 5) state, 6) the United States, and 7) the global community.

29 Shaheen, Maqsood A. 2008. Use of Social Networks and Information Seeking Behavior of Students During Political Crises in Pakistan: A Case Study. *The International Information and Library Review* 40(3): 142-147.

30 Hugo, Liu. 2007. Social Network Profiles as Taste Performances. *Journal of Computer Mediated Communication* 13(1).

31 Stutzman, Frederic. 2006. An Evaluation of Identity-Sharing Behavior in Social Network Communities. *Journal of the International Digital Media and Arts Association* 3(1): 10-18.

32 Crutchfield, Robert D., Michael R. Geerken and Walter R. Gove. 1982. Crime Rate and Social Integration: The Impact of Metropolitan Mobility. *Criminology: An Interdisciplinary Journal* 20(3): 467-478.

33 Kang, Naewon, and Nojin Kwak. 2003. A Multilevel Approach to Civic Participation: Individual Length of Residence, Neighborhood Residential Stability, and Their Interactive Effects with Media Use. *Communications Research* 30(1): 80-106.

34 Lindstrom, Martin; Juan Merlo and Per-Olof Östergren. 2002. Individual and Neighbourhood Determinants of Social Participation and Social Capital: A Multilevel Analysis of the City of Malmo, Sweden. *Social Science and Medicine* 54(12): 1779-1791.

35 Teachman, Jay D., Kathleen Paasch and Karen Carver. 1996. Social Capital and Dropping Out of School Early. *Journal of Marriage and the Family* 58: 773-783.

36 Duany, Andres, Elizabeth Plater-Zyberk and Jeff Speck. 2000. *Suburban Nation: The Rise of Sprawl and the Decline of the American Dream*. New York: North Point Press.

Lazarfeld and Merton³⁷ found “a tendency for friendships to form between those who are alike in some designated respect,” or homophily (23). Individuals typically form friendships with people who are similar on certain characteristics such as race and ethnicity,³⁸ education level,³⁹ religious beliefs,⁴⁰ etc. However, by creating “new, cross-cutting forms of social solidarity and more encompassing identities,” Putnam⁴¹ argues that such fragmentations can be overcome (137). To gain insight into whether or not Facebook engenders such a cross-cutting form of social solidarity, survey participants were asked whether, after joining Facebook, they had increased or decreased the number of their friends who are of another 1) race, 2) religion, 3) nationality, 4) gender, 5) sexual orientation, 6) economic status, and 7) education level.

Web 2.0 technologies present a revolutionary platform for civic dialogue. The utility of online social networks as an arena for communication is bolstered by the sheer fact that over half the student population at most universities belong to one.⁴² The political utility of Facebook is dependent upon the content of network discourse, the interactions between citizens and their elected leaders, and the explicit display of political cues by network members. Thus, survey participants were asked to identify the subjects they discuss on Facebook with their friends. Response categories included 1) American politics, 2) gossip among friends, 3) music, 4) religion, 5) sports, 6) television and movies, 7) volunteering or political activism, and 8) world news. Likewise, survey participants were asked if they had visited the profiles of any of the following: 1) a politician, 2) a political activist group, 3) another politically affiliated group, or 4) a religious organization. Finally, survey participants were

asked if they share any of the following personal information on their profiles: 1) political beliefs or positions, 2) political party affiliation, 3) support for a presidential candidate, and 4) support for another politician. For each question, respondents were asked to choose all that apply.

Evidence in Support of Optimism

According to Durkheim, “communities” form as a result of dense and demanding social ties, as well as ritual occasions that draw members of the community together. The data suggest that online social networks embody many of these traits. When asked how many friends they had linked to their profile(s) respondents reported a wide range of connections from 8 to 2000. On average, users had 341 linked friends. The mode response was 200 friends. Although there is no magic number of connections that one must have to reap social capital, it appears that Facebook members use the network to remain in contact with a significantly large enough network of friends to enhance such benefits.

Likewise, membership activities have become habitual for many Facebook users. Most survey participants had belonged to Facebook for 13 to 48 months at the time of the survey (see Table 1). The amount of time respondents spend on the Internet each week ranges between 1 hour and 85 hours, with an average of 16 hours per week. The amount of time respondents spend on Facebook each week ranges from 0 to 80, with an average of 6.26 hours per week. On average, respondents spend over a quarter of their time on the Internet using Facebook. This is not surprising given that an overwhelming number of respondents claimed that almost all of their friends maintained a profile on the site (see Table 2).

The data also suggest that very few individuals perceive themselves as becoming more isolated as a result of using Facebook. Although a majority of respondents perceived no effect of their Facebook membership on their connections to society, at least some users (>20% at most connection levels) are strengthening their connections to various levels of society including their 1) friends, 2) family, 3) neighborhood, 4) community, 5) state, 6) the United States, and 7) the global community (see Table 3).

Not all relationships are the same. Bridging relationships involve connections across diverse social groups, whereas bonding relationships involve connections within a homogeneous group. Bridging relationships are more apt

37 Lazarfeld, Paul F. and Robert K. Merton. 1954. *Friendship as a Social Process: A Substantive and Methodological Analysis*. In Morroe Berger (ed.) *Freedom and Control in Modern Society* (18-66). New York: Van Nostrand.

38 Shrum, Wesley, Neil H. Cheek, Jr. and Sandra Hunter. 1988. *Friendship in School: Gender and Racial Homophily*. *Sociology of Education*, 61(4): 227-239.

39 Louch, Hugh. 2004. *Personal Network Integration: Transitivity and Homophily in Strong-tie Relations*. *Social Networks* 22: 45-64.

40 Robicheaux, Sally. 2003. *Religious Homophily, Social Support, and Psychological Well-Being*. Paper presented at the annual meeting of the American Sociological Association, Atlanta, GA.

41 Putnam, Robert D. 2007. *E Pluribus Unum: Diversity and Community in the Twenty-first Century—The 2006 Johan Skytte Prize Lecture*. *Scandinavian Political Studies*, Vol. 30 (2): 137-174.

42 McGirt, Ellen. 2007. *Hacker. Dropout. CEO. Fastcompany*, May: 74.

at producing positive social capital than bonding relationships given that they lead to the perception of common interests and common humanity between members of the groups.⁴³ One might suspect that Facebook is better at fostering bonding relationships among tightly woven friendships than bridging relationships between disparate segments of society. While this may be true, the data suggest that Facebook has the potential to act as a cross-cutting platform that can increase the heterogeneity of one's social network. Respondents were asked if joining Facebook had increased, decreased, or had no effect on the number of their friends of a different race, religion, nationality, gender, sexual orientation, economic status and education level (see Table 4). More than 75% of respondents reported no effect of Facebook membership on each category of diversity, but of those who did report an effect, far more respondents increased the diversity among their friends than decreased it. While homophily appears to occur in online social networks, just as it does in off-line communities, the evidence suggests that Facebook has the potential to act as a bridging mechanism for its users that can result in a more richly diverse social network.

Networks are not the only determinant of social capital. The content, as well as the structure, of interactions has important implications for social capital. For example, a lack of confidence often times prevents individuals from discussing certain subject matter. Without such discussions, the development of social capital is less likely to be enhanced in those areas. On the other hand, the more confident one is in a subject the more likely they are to contribute to such discussions and, in return, receive feedback from their friends. This iterative process of dialogue is at the heart of social capital. The data suggest that respondents likely have enough confidence about their understanding of American politics to discuss the matter with others. When given the statement "I have a pretty good understanding of the important political issues facing America," 78% of respondents either agreed or strongly agreed that they did. Only 11% disagreed or strongly disagreed with the statement. Likewise, when given the statement "Most people in America are better informed about politics and government than I am," only 15% agreed or strongly agreed with the statement. On the other hand, 62% of respondents disagreed or strongly disagreed with the statement.

When asked what topics they discuss with their friends on Facebook, 42% of respondents said they discuss American

politics (see Table 5). More than a third (34%) said they discuss world news and 25% said they discuss volunteering or political activism. Not surprisingly, the topics chosen most by respondents were gossip among friends (71%), television and movies (72%), music (66%) and sports (57%). Religion was chosen as a topic of discussion by a quarter of respondents. Overall, the data suggest that a significant percent of respondents discuss political topics on Facebook. As these conversations generate a myriad of facts and opinions amongst those in one's network, social capital is manifested in the form of information and viewpoints. The more information and viewpoints one has at their disposal, the greater their ability to conceptualize and act upon their own beliefs.

While online social networks like Facebook do not negate the importance of face-to-face encounters between policymakers and citizens, they may nonetheless facilitate the exchange of information and ideas between these agents. Respondents were asked whether or not they visited the profile page of various political actors, and whether or not they linked to these profiles by adding them as a friend. The results (see Table 6) show that nearly half of respondents (41%) reported visits to a political activist group. Fewer had visited the profile page of another politically affiliated group (36%) or religious organization (35%). Nearly half (44%) of the users surveyed reported that they had visited the profile page of a politician.

Political information can be disseminated by political actors on Facebook in the form of comments left in linked friends' comment sections or through bulletins dispatched to those linked to their profile. To receive such contacts, a user must add the political actor as a friend on the network. Nearly a third (28%) of respondents said they had added a politician as a friend on their online social network (see Table 6). Slightly less (21%) said they had added a political activist group as a friend. Fewer respondents reported adding another politically affiliated group (20%) or a religious organization (21%) as a friend on their networks. Respondents' desire to visit and link to political actors' profile pages is further evidence that by enabling members to increase their familiarity with politics, Facebook has the potential to generate social capital in the form of information and viewpoints.

Finally, respondents were asked about the information they share on their profiles (see Table 7). More than half (57%) said their profiles contained information regarding their political beliefs or positions. More than a third (39%) of respondents reported sharing their support for a presiden-

43 Allport, Gordon. 1954. *The Nature of Prejudice*. Cambridge, MA: Addison-Wesley.

tial candidate in the 2008 race. Likewise, 33% of respondents reported sharing their political party affiliation on their profile. Other politicians, examples of which might include senators and congressmen, were supported on the profile pages of only 15% of respondents. These findings are important given that the essence of social networking is the ability to generate new information and political cues that individuals can use to guide their own views and actions.

In a final pair of questions, respondents were asked how interested they are in politics and what effect joining Facebook had on their level of interest. The evidence (see Table 8) suggests that advocates for participatory democracy should be optimistic. Nearly a fifth of all users reported that joining Facebook has increased their interest in politics. Among those who reported being only somewhat or not at all interested in the subject, 44% perceived that their Facebook membership increased their interest in politics. An overwhelming number (94%) of respondents reported being either somewhat or very interested in politics at the time the survey was taken. These findings reinforce the importance of examining the ways in which Facebook members use the network to seek out and distribute political information. Likewise, they demonstrate to political actors the importance of using social networks like Facebook to advance their careers and policy prescriptions.

Conclusion

Online social networks like Facebook are opening up new spaces for civic discourse to take place. As these platforms emerge it becomes important to determine what, if any, impact such networks might have on the development of social capital. This study identified several “best practices” for the development of social capital and used a convenience sample to determine whether or not Facebook was being used to facilitate these practices. The data support tempered optimism. Most respondents reported no effect of Facebook membership on their connection to society. However, of those who did report an effect, far more increased than decreased their feelings of connectedness to society. Likewise, most respondents reported no effect of Facebook membership on the diversity of their friendships. But of those who did report an effect, far more increased the diversity of their friendships than decreased it.

More importantly, the findings of this study suggest that a significant amount of discourse on Facebook relates to politics. This is driven, in part, by the willingness of many

Facebook members to visit and add as friends the profile pages of political actors. These findings are heartening given that the study’s sample population consists of young adults, a demographic that has been apathetic towards politics for decades.

As the population of Facebook users continues to increase in size and diversity more empirical research, using a more heterogeneous sample, is needed. Likewise, our understanding of the social and political implications of Facebook membership would benefit from content analyses of communications on the network. The findings herein suggest that such efforts are likely to produce intriguing results for scholars in the fields of political science, sociology, psychology and media studies.

Table 1: Respondents' Tenure on Facebook

Tenure	Frequency	Percent	Cumulative Percent
Less than 6 mo.	4	2.4	2.4
6 mo. to 12 mo.	20	11.8	14.1
13 mo. to 36 mo.	81	47.6	61.8
37 mo. to 48 mo.	46	27.1	88.8
More than 48 mo.	19	11.2	100

Table 2: Amount of Respondent's Friends Who Are Members of Facebook

Amount	Frequency	Percent
Almost None	2	1.2
Some	8	4.7
Most	31	18.2
Almost All	127	74.7
Don't Know	2	1.2

Table 3: Effect of Facebook Membership on Respondents' Societal Connections

Level of Connection	Effect of Facebook Membership (% of Respondents)				
	Much Less	Less	No Difference	More	Much More
Friends	0.6	1.8	15.9	54.1	27.6
Family	0.0	2.4	74.7	21.2	1.8
Neighborhood	1.2	2.4	85.3	10.0	1.2
Community	0.0	2.4	67.1	26.5	4.1
State	0.0	1.2	75.9	21.8	1.2
United States	0.6	0.6	68.8	25.3	4.7
Global Community	0.6	0.6	55.9	31.2	11.8

Table 4: Effect of Facebook Membership on Respondents' Friendship Diversity

Characteristic	Effect	Percent
Race	Decreased	0.59
	Had No Effect	84.0
	Increased	16.0
Religion	Decreased	1.18
	Had No Effect	81.0
	Increased	18.0
Nationality	Had No Effect	79.0
	Increased	21.0
Gender	Decreased	0.59
	Had No Effect	79.0
	Increased	21.0
Sexual Orientation	Had No Effect	88.0
	Increased	12.0
Economic Status	Decreased	0.59
	Had No Effect	88.0
	Increased	11.0
Education Level	Decreased	0.59
	Had No Effect	75.0
	Increased	25.0

Table 5: Topics Discussed by Respondents on Facebook

Topic	Percent of Respondents
American Politics	42
World News	34
Volunteering and Political Activism	25
Gossip Among Friends	71
Television and Movies	72
Music	66
Sports	57
Religion	25

Table 6: Respondents' Interactions with Political Actors on Facebook

Political Actor	Visit	Add
Politician	44%	28%
Activist Group	41%	21%
Other Politically Affiliated Group	36%	20%
Religious Organization	35%	21%

Table 7: Political Cues Shared on Respondents' Facebook Profiles

Type of Political Information	% of Respondents Sharing Information
Political Beliefs or Positions	57
Political Party Affiliation	33
Support for a Presidential Candidate	39
Support for Another Politician	15

Table 8: Effects of Facebook Membership on Interest in Politics by Level of Interest

Self-reported Level of Interest in Politics	Effect of Facebook Membership on Interest in Politics		
	Had No Effect	Increased Interest	Total Number of Respondents
Not at All Interested	7	3	10
Somewhat Interested	54	11	65
Very Interested	77	18	95
Total	138	32	170

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