The Editor's Spotlight: TOCHI Issue 23:4

My goodness—it's the last week of July already. How did this happen? Has some bizarre turnabout of time and space, presumably a relativistic distortion brought on by the extreme gravitational field of my ever-mounting TO DO pile, vaulted me far into an incomprehensible future?

No matter how vigorously I attack this great mountain of editorial work with my trusty red pen, following the trail blazed by my yellow highlighter and its volatile scent, the tasks heaped thereupon exhibit a rather strange property:

Each and every one instantaneously expands to fill (if not exceed) all time that I can manage to pry loose for it... not unlike this editorial, on which I am rather tardy at this point.

Yet, one thing is certain: as usual, the summit of TOCHI affords a perspective from which one can appreciate a rather stunning view. And the cool thing is, this mountain's always getting higher; there is no top, there is no culmination to scientific curiosity and the insights afforded by the CHI community's brilliant analyses and designs. This month's new contributions, in that sense, offer a magnificent glimpse of what's still to come as we climb ever higher. Somehow, almost magically, more and more of this wonderful mountain always appears underfoot each time one suspects one is getting anywhere near the top. But trust me, I do not mind the failure of this would-be summit bid one bit. Rather than a Sisyphean task, it is a journey of incredible wonder.

TOCHI itself continues to reach greater heights—and in recent events, as an institution it has grown far wiser as well, because I am happy to report that four illustrious new members have graciously accepted my invitation to serve on the Editorial Board:

—Pourang P. Irani (University of Manitoba);

<http://www.cs.umanitoba.ca/~irani/>

—Per Ola Kristensson (University of Cambridge);

<http://pokristensson.com/>

—Wendy E. Mackay (Université de Paris-Sud); and

<http://insitu.lri.fr/~mackay/>

—Albrecht Schmidt (University of Stuttgart).

<http://www.vis.uni-stuttgart.de/en/institute/people/prof-dr-albrecht-schmidt.html>

All of them are accomplished innovators, lecturers, and researchers—if not a force of nature in their own right—and I'm very excited for the vision and guidance they will all bring to the board. And these reinforcements arrive just in time, too, as TOCHI is on a record pace for new submissions this year, with manuscript #155 having just entered the queue.

And that doesn't even count the revisions.

So needless to say, there's plenty of editorial work to go around. Our average response time continues to hew to about 50 days, although admittedly this obscures a highly bimodal distribution: we decline many submissions within a few days, while those that go through full external reviews usually take longer. We strive to issue a decision letter within 90 days, but that isn't always possible—especially during the summer, when almost all prospective reviewers (somehow having the gall to enjoy their sunny holidays) tend make themselves rather scarce!

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1073-0516/2016/09-ART20

DOI: <http://dx.doi.org/10.1145/2978275>

And if your manuscript has been with us for more than 90 days, please do feel free to query tochi@acm.org so that we can check on its status. Such queries, when necessary, often constitute a useful prod to stir reviewers and editors (including myself!) to imminent action.

Perhaps now is also a good time to remind everyone, oh ye of the faithful TOCHI readership, that 2016 will herald the first annual TOCHI Best Paper Award. I would love to receive your nominations for our best papers published in 2016, to be sure they receive full due consideration for the award. Just drop us a line at tochi@acm.org. And please do include a brief statement as to why you think the paper is especially deserving—that may be just the thing necessary to push it over the top, given the consistent excellence of all the work that we publish.

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This month's TOCHI has an unusually rich and far-ranging set of contributions, some of which forced me to confront deep personal truths (more about that shortly). And while there were several articles that piqued my curiosity, two in particular caught my editorial eye.

IN THE SPOTLIGHT, PART 1: RITUALS OF LETTING GO: AN EMBODIMENT PERSPECTIVE ON DISPOSAL PRACTICES INFORMED BY GRIEF THERAPY

This article offers a great example of the rich insights that can be unpacked by a thorough *qualitative* analysis of an HCI design context—in this case, the challenges of loss and grief that we all must eventually confront, and which therefore may be the essence of the human condition itself.

This unique problem takes on some strange twists in this modern era, when many of the “possessions” representative of our loved ones who have passed on assume an online and digital, rather than physical, form. How can one confront such an overwhelming task—going through thousands of digital photos, or blog posts, or a Facebook timeline which may not even be under your direct control—in such circumstances?

Furthermore, one might naturally assume that one always wants to retain such digital possessions, whereas the reality is much more complicated. Indeed, to move on, what many people need is in fact a therapeutic way of letting go—an end-goal spectacularly ill-suited to the inflexible, binary, and non-embodied methods that computers and web services currently offer us for deleting digital objects (or massive collections thereof).

And I have to admit, this article really hit home because it represents a very deep, dark hole that I have fallen into myself: Kerrie, my first spouse, died at the tender age of 29, just as I was embarking on my career at Microsoft Research. As I tried to put my life back together, one problem I had to confront was what to do with my wife's greeting, which may have been the only recording I had of Kerrie's voice, on our voice mail. While I will leave the solution that I came up with to the reader's imagination, I can assure you that hitting some *Delete* button is about as far as you can get from a satisfactory solution to such a dilemma, and indeed there are no easy answers.

Because people flattened by such events (which the authors astutely expand to encompass related circumstances such as stillbirth, separation and divorce, as well as death itself) are in no condition to participate in some focus group or contextual inquiry, the article takes the clever indirection of working with professional grief therapists, all of whom helped clients to prepare “rituals of letting go” so as to move on with their lives—a new life that by necessity could no longer include their loved one.

And indeed, the problems faced and the type of rituals enacted depend strongly on such circumstances, leading to a vocabulary of action and intent that the authors characterize in a rich design space. The work also suggests many new design directions and possibilities for HCI and sustainable, full life-cycle design to help people divest themselves of emotionally charged digital possessions.

To riff on the novel direction of release-centric interactions suggested by the article, imagine, for example, a digital-photo locket explicitly designed for *letting-go* such that each time you choose to open it, it displays a photo (or a voice message...) of a loved one for the very last time; when you decide to close it, an embodied act, the echoes of the emotionally-charged digital artifact would drift away on a chill wind and be gone forever, allowing the survivor—if only symbolically, and in a small way—to move on.

The article is rich with provocative examples, situations, and design questions of this sort, and reading it may very well forever change how you think about the design of photo repositories, voice messages, texts, and other such digital possessions.

Corina Sas, Steve Whittaker, and John Zimmerman. 2016. *Rituals of Letting Go: An Embodiment Perspective on Disposal Practices Informed by Grief Therapy*. ACM Trans. Comput.-Hum. Interact. 23, 4, Article 21 (August 2016), 37 pages.

DOI = <http://dx.doi.org/10.1145/2926714>

IN THE SPOTLIGHT, PART 2: ADDING PHYSICAL OBJECTS TO AN INTERACTIVE GAME IMPROVES LEARNING AND ENJOYMENT

This delightful contribution explores *EarthShake*, a mixed-reality game that helps children learn some basic principles of physics by bridging the physical and virtual worlds via depth-sensing cameras.

The work includes not only an interactive prototype that is put to the test by 4–8-year-old children (a particularly demanding user demographic if ever there was one!), but also through careful experimental design that teases out many insights illustrating how and why the use of three-dimensional (3D) physical objects in mixed-reality environments can produce better learning and enjoyment than flat-screen 2D interaction.

Computer technologies can be especially empowering when brought to bear in the context of the physical environment. This has long been suspected as a benefit of so-called “tangible interfaces”—that is, interfaces employing physical stand-ins or props as proxies for digital objects—yet precisely how, or why, or under what circumstances tangibles might bring benefits has remained murky, particularly when combined with mixed-reality environments, i.e., sensing systems that detect the 3D world and incorporate it directly into the interactive experience. One can hypothesize many possible reasons that tangibles could be beneficial to learners in mixed-reality environments:

Is it the 3D nature of the objects?

Do the potential benefits derive from making interaction more enjoyable?

Or perhaps it is the embedding in reality, and the sensory cues that the real world affords, that forms the critical difference—as compared to watching videos of the same activities, for example.

In addressing these questions, the carefully controlled studies isolate various possible effects and confounds, and thereby convincingly demonstrate many aspects of exactly how these mixed-reality environments benefit learners. The results demonstrate that learning benefits accrue through embodied cognition, improved mental visualization (as evidenced by children’s hand gestures, for example), and via the mere observation of physical phenomena in the full richness of sensory cues available in the real world—cues that are inherently absent when watching a video recording of the same activity on a flat, 2D screen.

Nesra Yannier, Scott Hudson, Eliane Wiese, Ken Koedinger. 2016. *Adding Physical Objects to an Interactive Game Improves Learning and Enjoyment*. ACM Trans. Comput.-Hum. Interact. 23, 4, Article 26 (August 2016), 33 pages.

DOI = <http://dx.doi.org/10.1145/2934668>

OVERVIEW OF VOLUME 23, ISSUE NUMBER 4: TECHNOLOGY-MEDIATED MEMORY, HUMAN-AGENT ENCOUNTERS, FLEXIBLE AUTONOMY IN SMART HOME INTERACTION, AND FOSTERING ACTIVITY AND ENGAGEMENT IN ONLINE (ENTERPRISE) COMMUNITIES

Technology Mediated Memory: Is Technology Altering our Memories and Interfering with Well-Being? To investigate this provocative question, this article first embarks on something of a tour-de-force on the functioning of human memory itself, situating it as an ecological (rather than purely objective) construct. Human memory, rather than exhibiting unbiased and indefinite recollection as is the case with computers, is instead intimately tied up with emotional attributes that ultimately (evolutionarily speaking) must confer benefits of well-being to the individual organism.

Preoccupation with negative experiences—for example, known as rumination—can have harmful implications for one’s psychological well-being.

But in a world where every text we send, every digital photo we snap, or indeed every second of our entire lives might be indexed forever in some exhaustively detailed life-logging system of the future, can anything indeed ever be forgotten? And could such technologies, rather than always affording joyful reminiscences, actually do users lasting harm in the case of emotionally charged memories?

The authors deploy a well-realized digital journaling application for smartphones, known as *Echo*, in several contrasting conditions so as to gain deep insight into these questions. The answers they bring are impressively thorough, and indeed the end result is far-ranging article that (at the risk of making a bad pun) you will not soon forget.

(<http://dx.doi.org/10.1145/2934667>).

First Impressions in Human-Agent Virtual Encounters. Since I work at an institution (Microsoft Research) that is rather perilously far out on the advance tail of the technological distribution, things like talking robots that exhibit body language seem fairly pedestrian in my work-environment.

But I must admit—they scare my kids. And I suspect the abruptness of these situated robots’ body language has much to do with it.

This article explores the role of the nonverbal behavior—attributes such as smiling, gazing, and proxemics—of a *virtual* agent on people’s first impressions of the agent’s personality and interpersonal attitude. In everyday life, impressions of these social attributes form quickly, and strongly influence the likelihood and frequency of future encounters. If a virtual agent greets its audience with a favorable impression in this critical first encounter, this may accrue many benefits for subsequent human-agent interaction.

The authors embark on a series of studies, including a public exhibit at the Museum of Science in Boston, to explore these questions. And indeed, in their field study the authors show that proper attention to such nonverbal behavior increases the number of visitors engaging in interaction with “Tinker,” an animated 3D agent presented on a large display. The work demonstrates convincingly that virtual agents can achieve this through subtle manipulations of nonverbal immediacy cues (such as smiling, gazing, and proxemics) during the initial moments of the interaction.

(<http://dx.doi.org/10.1145/2940325>).

Tariff Agent: Interacting with a Future Smart Energy System at Home. The modern combination of Big Data with Tiny Sensors is rapidly bringing about a reality where “smart” systems assist much of our day-to-day decision making.

Although this can be a good thing, with the automation relieving users of handling overwhelming minutiae, the flip side can be loss of control when these sensors (and algorithms fueled by outsized data) inevitably flub things up from time to time.

Do users want such systems to act on their behalf, exhibiting full autonomy, or is some form of semi-autonomy—or perhaps even falling back to suggestion-only designs—the way to go? This article explores these design dilemmas in the context of energy tariff-switching for the smart-home environment, finding that a strategy of “flexible autonomy” can sustain users’ engagement with smart energy-management systems, even in light of occasional mistakes.

The work also leads to the interesting suggestion that users tend to take responsibility for automated actions that are undesired, so long as delegation of autonomy can be adjusted in a flexible manner. This leaves users with the feeling that they remain in control. Such a landing-point is a crucial consideration in the design of such automated or semi-automated systems, because infrequent but persistent errors and frustrations may lead users to abandon technologies that otherwise could yield positive energy benefits—an all-to-common fate for various technologies that have failed to exhibit flexible autonomy.

(<http://dx.doi.org/10.1145/2943770>).

Increasing Activity in Enterprise Online Communities using Content Recommendation. We have all experienced well-intentioned online “communities” that more closely resemble desert ghost towns, with tumbleweeds rolling through the vast empty spaces where “discussions” and “conversation” were ostensibly meant to occur. And online communities of the enterprise variety seem particularly prone to such desertion, given that they are meant to address a professional context where time and attention (and people’s willingness to spark a conversation) may be scarce resources indeed.

This article addresses this thorny problem of how to encourage and maintain lively online communities by studying how the community leaders choose to share (or not to share) content recommendations in the enterprise context. Through a large-scale survey with four rounds of content recommendation based on member-based, content-based, or hybrid community interest profiles, the authors demonstrate that a recommender systems approach to surface relevant content to such leaders can promote increased activity and engagement. The multi-round structure of the study also enabled the authors to probe the effect of recommendation activity on the community over time.

The results demonstrate that recommendations based on the community’s content are especially effective in influencing owners’ willingness to share them with the community and take real action. Recommendations to community owners can therefore offer an effective strategy to help uplift activity and engagement within enterprise communities.

(<http://dx.doi.org/10.1145/2910581>).

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Well, with all that being said, I must admit that Seattle’s fleeting summer has arrived in force at long last. The life-giving rays of that mysterious yellow orb in the sky (which my colleagues in less temperamental climes tell me is a rarely-seen object known as ‘The Sun’) has stirred me to a state of unusual agitation and restlessness which makes my editor’s chair less welcoming than usual.

Indeed, the stratovolcanoes of the Cascade Crest—with their snow-mantled summits gleaming like immense white jewels on the distant horizon—can be glimpsed here and there from the upper stories of the glassed-in offices that house Microsoft Research. And even now—though I find myself fascinated (as always) by the contributions I see

coming down the pipeline for TOCHI—their glaci-ated siren-songs beguile me from afar. . .

So, there you have it and that's a wrap for Issue 23:4 of *Transactions on Computer-Human Interaction*. But rest assured, I'll be back. And indeed, in terms of the journey of discovery that comprises my editorial duties, I feel like my mountaineering boots are on and I'm already headed up into the wilderness of the TOCHI submissions queue, in heady anticipation of what treasures my metaphorical alpine wanderings will bring.

And I have a sneaking suspicion that when I report back, in two months' time, you'll enjoy the unique perspectives thus revealed every bit as much as I do.

Ken Hinckley
Redmond, Washington
July 27, 2016
Editor-in-Chief