

SPECIAL ISSUE

Beyond the Self in Self-Regulation—Reaching Beyond Technologies: The Importance of Others and Relationships to Individual Well-Being

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As technologies become increasingly integrated in all aspects of culture, we may be losing our therapeutic pulse on how important true face-to-face and heart-to-heart relationships are to our personal and collective well-being. Social isolation and excessive utilization of i-technology appear to contribute to the development or maintenance of anxiety, depression, obsessive-compulsive spectrum disorders, and ADHD. Human engagement risks being eclipsed by the novelty and excitement of the digital age. Current practice indicates that there are potentially positive and even therapeutic applications of technologies for betterment and healing, but that we should be selective in our applications.

The Impact of Screen Time on Interpersonal Engagement and Self-Regulation

A professional thesis from which a lot of my work stems is that increases in screen time to the exclusion (rather than addition) of face-to-face or heart-to-heart interaction is harmful and may indeed be directly correlated with increases in clinical depression, anxiety, and obsessive behaviors (Swingle, 2013, 2015). In theme with this issue of *Biofeedback* and in keeping with the theme of AAPB's upcoming scientific meeting in 2016, *Beyond the Self in Self-Regulation: Building Resilient Relationships*, excessive or exclusive screen time is also a major contributor to compromised abilities to self-regulate as well as to the failure of relationships.

In what appears to be an era of ever increasing individualism, it is easy to lose perspective on the role others play in our health and happiness. In the otherwise bigger picture of homeostasis of persons within their environment(s), face-to-face interpersonal relationships with one's people—family, friends, and later partners and larger community—are key. Research has rather consistently found that positive or fulfilling face-to-face relation-

ships are central in attaining and thereafter maintaining not only emotional health, but also physical well-being. This is particularly true for the elderly and the very young and is a basic premise of attachment theory. Yet even while knowing this, we are turning less and less to people and more to technologies. We are developing robotic toys with humanistic features to engage with our children and robots that lead exercise classes for the elderly. A critical aspect being eclipsed in the novelty and excitement of the digital age is that health and wellness are directly related to meaningful social engagement with people. As such I continue with my central thesis: Technologies should be in positive complement or in addition to, not to the exclusion of, person-to-person contact and interpersonal relationships.

Social Isolation and Solitary Living

Although we fundamentally know that being with others is good for us, and isolation less so, a current rising trend in the First World, or otherwise richer nations and communities, is solitary living. Over the past few decades, increasing numbers of people are choosing to live alone (Klinenberg, 2013). More people are also choosing divorce, sequential monogamy, systematic noncommittal sexualized friendships (otherwise known as the “friends with benefits” trend), and prostitution over the ups and downs and arguably the compromises and sacrifices necessary for successful long term partnerships to thrive (see Ansari, 2015). Although with this lifestyle we shed the supposed burden of caring for others, the evident co-outcome is that others also no longer care for us. And all this can come at a price to our own emotional health.

Technology is undeniably a major player directly contributing to our undercommitment or lesser attention to each other and willingness or availability to be inclusive of others and their individual needs. More and more

frequently we are isolating with i-tech or screen based devices. We are also doing this to, or with, children. We are isolating them with i-tech when their behavior is in conflict with our own needs or objectives. For example, when driving, although absolutely maddening for most parents and arguably dangerous for driving itself, poking at siblings, kicking the seats, and cries of “I’m bored” or “Are we there yet?” serve a purpose. These are explicit vocal and behavioral expressions of children, who by the very nature of being children, have not yet learned to self-regulate in small and otherwise most confining spaces. Why is this little dance important? Because it is part of development, a context that provides caretakers opportunity to teach children autoregulation and boundaries of behavior. Specifically, these are moments to teach and model the learning of self-stimulation and positive as opposed to negative interpersonal interactions when feeling prolonged disquiet or discomfort.

The Use of Digital Devices, Isolation, and Autoregulation

Back to adults, many of us are now doing the same, and arguably for similar reasons. Just like children in cars, we now frequently turn to our individual digital devices for entertainment and distal as opposed to proximal contact. We now play on our phones on the train as opposed to talking with our neighbor or companion. Or, we spend hours on Facebook as opposed to organizing and attending dinner parties. It would appear technology unites us greatly in committing to causes (e.g., environmental and political) but less and less so face to face with our immediate and otherwise available others.

Since the advent of the Walkman in the 1980s, followed by the Discman, and now iPods and iPads, the isolation with headphones in public and now private spaces (within homes and cars) has risen exponentially. So too outside our homes. Go to any cafe, restaurant, or even bus stop and the majority of youth and now even elders have ear buds, earphones, and their heads in i-tech devices. More and more of us are also now attending these spaces alone; people sitting in rows in coffee shop windows side by side not interacting with each other but rather the screen-based device in front of them. We are just not available to others. Or not available to others without the protection or mediation of the screen, that is.

The larger question is why? It seems counterintuitive to choose to be or go out alone, yet with an isolating device. What purpose does the outing then serve? Why do we need or want to mediate our environment? To protect ourselves, to hide behind or within screens? What are we protecting

ourselves from? And, could it really fundamentally be about troubles with autoregulation when face to face with other people, the loss of social resilience, or the lack of development thereof?

Research is providing us with some interesting answers. The first being, yes, just like kids in the car, it is not only about interest (content and process that drags us in and intrigues us), but also about autoregulation (how being on digital devices makes us feel, feel differently, and act differently, too). For many, i-tech is indeed being used less for entertainment and more for autoregulation, specifically for the regulation of mood and states of quiet and arousal.

As Caplan (2007) and later Caplan and High (2011) observed, for individuals with social anxiety or intimacy disorders, screens are most attractive. Individuals specifically use screens to regulate mood states and to mitigate against (pre-existing) social anxiety. Erwin, Turk, Heimberg, Fresco, and Hantula, (2004) also found early on that communication through screens was easier and, perhaps more importantly, was perceived as safer than face-to-face interaction. In the case of depression, again excessive screen use has been found to have direct links. Here, however, there is a bit of a chicken-and-egg query. Individuals with depression are more prone to use screens excessively and individuals who use screens excessively are prone to developing depression (Caplan & High, 2011; Young & Nabuco de Abreu, 2011; Young & Rodgers, 1998).

Screen Time, Deregulation, and Disinhibition

Is it possible that now we, the masses, supposedly without depression, anxiety, or intimacy disorders, have also rather unconsciously figured this out? And, is this preference now turning into a cultural dependence? Is the excessive use of screens in small or large part also responsible for our deregulation and a contributor to the rising rates of clinical mood disorders including anxiety and depression?

Further support for this thesis lies in the work of Cooper, Delmonico, and Burg (2000). A second little caveat of screens is disinhibition. As first seen in the cybersex phenomenon, then trolling and other forms of cyber bullying, we act differently on screens. We are significantly more brazen and out there. We engage in things and say and post things that we otherwise would not in real life or rather in person. We get a little high. Initially this was due to perceived and actual anonymity, along with different rules of engagement. Screens and virtual worlds protected us from consequences in our real or off-screen lives so indeed we could freely explore other worlds and other aspects of ourselves. Now however, we have arguably

transcended this need. We more frequently post as tempted, without fear or thought to consequences as is particularly evident in youth (and celebrities). But only via screens (or arguably lenses too).

Online and via screens we also can be quite selective, presenting only the aspects of ourselves we so choose. Whether via the idealized selfie, which exaggerates or illuminates only the characteristics we want to project, or in contrast, eliminates, hides, or simply does not mention those characteristics we don't want to display. In sum, life online allows us to explore or become better (or worse) alter egos of ourselves. The catch here is for a select yet ever-growing group, this is preferable; life is more and more exclusively conducted online. And, for some, being online is to the total exclusion of offline interpersonal relationships.

I first (knowingly) gained exposure to this population while conducting my doctoral dissertation on Internet addiction. As a participant selection measure I used the Internet Addiction Test (IAT; Young, 1998, 2011). The IAT was the first validated psychometric instrument that measured addictive behavior as specifically related to computer utilization. The test measures nonacademic and nonprofessional computer use and has been found to be a reliable measure of pathological Internet consumption (see Ferraro, Caci, D'Amico, & Di Blasi, 2007; Kazaal et al., 2008; Widyanto & McMurren, 2004). The test measured four dimensions and six factors believed to be integral to the identification of Internet addiction (or digital process addiction). The four dimensions were interference with family relationships, salience and withdrawal, overindulgence in online relationships, and tolerance and neglecting daily routines. The six factors were salience, excessive use, anticipation, lack of control, neglecting work, and neglecting social life (arguably about the ability to self-regulate vis-a-vis the behavior).

While actively recruiting, I noticed many of the candidates who were clearly identifying with having a severe i-addiction were systematically not scoring high enough on the test to be considered for inclusion. They were not "severe enough." As the IAT has proven its validity in numerous studies, and denial, not admittance, is the standard pattern in most addictions, I started to question if something was amiss.

The lovely thing about individuals with an i-addiction is that this does not preclude communication, in fact quite the opposite; individuals are extremely communicative online. In email banter, people offered a lot of helpful information on their Internet patterns and the effect on their lives, further raising my suspicion that something was clearly wrong. I had an enigma.

Closely examining the situation, the only thing I found obvious was that these potential participants were single. I could let it go, but I did not want my study to be biased towards people in relationships. And then a potential participant gave me the answer in black and white. These individuals were scoring low because the test involved other people's opinions. And there were no other significant (offline) people in their lives to give opinions!

A lot of questions "did not apply" because they involved someone else's opinion on how I spend my time and I do not have that kind of relationship with anyone, where they would judge/ask how I spend my time.

What I had haphazardly discovered through this rejection process, is that there are now manners of usage or lifestyles that are so enmeshed with digital media that offline life is secondary, quite secondary. So much so that assessing the effect of i-tech on real life interpersonal relationships became a moot point. Questions regarding how Internet usage affected relationships legitimately did not apply. The interesting factor, however, was that this was not because Internet usage did not interfere with said existing offline relationships; rather that these relationships did not exist (Swingle, 2015)!

My study, like others mentioned above, also found that in those who used screens excessively, there were statistically higher levels of anxiety, depression, and ADHD as per standardized tests (67% of females and 87% of males met criterion for one or more or more disorders and 40% for two or more; meeting criterion for moderate and high anxiety on the BAI, Moderate and Severe for depression on the BDI and criterion for ADHD as per the ASRS-v1.1).

Neural Deregulation

I also found significant deregulation patterns within the sample as seen on a 19 site QEEG. Seventy-seven percent of the sample had one or more significant neurometric deviations when compared to the standard means of a normative database. Deviations were widely distributed across 19 sites and eight bandwidths implying that what we were then calling Internet addiction was not a discrete disorder but rather a behavioral manifestation of deregulation itself. A 5-point ClinicalQ, when compared to a clinical database, revealed 100% of the sample had EEG signatures common to those experiencing anxiety, insomnia, and other addiction; 89% had EEG signatures common to those symptomatic of high frontal alpha ADHD; 66% had EEG signatures common to those experiencing

compulsive perseveration or fretting; 40% had over a 15% difference in discrete bandwidths amplitudes across the frontal lobes (at F3/F4) associated with reporting of emotional deregulation; and 27% had a signature in common with those reporting a lack of body stillness. I did not look at any signatures that were present in less than 25% of the sample (Swingle, 2013, 2015). In sum, excessive usage, to the exclusion of time spent with significant others, was correlated with deregulation.

Positive Uses of Technology and Healing Circles: Share Your Earbud

So what can we do therapeutically? Many studies, including mine, have found excessive screen time is a major contributor to isolation and lack of generalized wellness and can bloom into specific forms of emotional deregulation (depression and anxiety), overarousal (again anxiety, ADHD, and insomnia), and pathologies on the obsessive-compulsive spectrum. It is also a contributor, if not a cause, of reduced abilities to interrelate without a digital mediator and to read facial cues, in particular for youth (Uhls et al., 2014).

That said, if properly integrated, screen time can be mostly positive or neutral. For example, screen sharing and gaming in young males can be a tool of bonding (as long as it is in addition to and not a replacement of yard play, environmental exploring, and roughhousing; Swingle, 2015).

Specific to the professions of biofeedback and neurofeedback, we can and do also use technologies, and yes screens, as tools for explicit coregulation. Galvanic response meters, heart rate meters, arguably any standard biofeedback device or program can be rewired to fit the healing circle principle wherein two or more people must attain a certain threshold or rhythm to see or hear the reward together. These healing circles may have potential to be more powerful than nontechnically mediated exercises (e.g., meditation, mindfulness, and breathing exercises) as indeed individuals are not only working on the achievement of states of self-calm or self-awareness but rather on the unison of said state with another. Truly healing beyond self. Such applications can be most beneficial for couples or families experiencing underlying tension, anxieties, or overt conflict to be present or co-present with each other.

Following research principles 101, we also may want to be sure that the activities we partake in on i-devices are indeed responsible for what we believe they are. In the case of neuroplasticity games or gaming programs that are designed to improve cognitive function for the ageing and elderly, a meta-analysis of studies found slight improve-

ments in the ability to remember visual images and the ability to remember recent events, but no changes in planning or judgment abilities nor attention or selective concentration abilities. Also rather ironically, the more participants used the games, the less they worked (more than three sessions a week was associated with decline not improvement). Again, this may not be a function of what the games were or were not doing, but what people were not doing when choosing to game (e.g., they were not socializing, exercising, or partaking in other healthy activities but rather staying in isolation training with i-devices). Further, less than 30 min proved ineffective, and home sessions as opposed to, you got it, supervised or class sessions, were ineffective (Lampit, Hallock, & Valenzuela, 2014). So is it again the personal, social, or community element that is the key variable to success? Is being or doing an activity with others the variable responsible for improved cognitive health?

In conclusion, we might want to take some lessons across cultures and nations: Excessive i-tech or i-addiction in youth reached epidemic proportions and was labeled a national health issue in both China and South Korea in 2008 (Block, 2008; Shaw & Black, 2008). It may also be in large part responsible for not only the rise of single living but also being single in Japan (Ansari, 2015). There may be some connection: It would appear that countries and cultures that preceded us in embracing personal use of technologies more, embrace each other less. Somewhere I read seven hugs a day were associated with good emotional and physical health. I may not recall the source, but we should all remember the message.

Some youth have it figured out: Share your earbud; you may lose the stereo, but you will gain a friend and surely a common experience, perhaps even a partner. Arguably after primary attachment, partnering is the most nurturing of relationships humans are designed to engage with.

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