

An abstract graphic of a tree where the trunk and branches are composed of digital lines and nodes. The trunk is thick and orange-yellow, while the branches are thinner and multi-colored (blue, green, purple, grey). Red nodes and lines form a network around the tree. The background is white with faint binary code (0s and 1s) in purple and green. A thin green rectangular frame encloses the title text.

ETHICS FOR A DIGITAL AGE

VOLUME II

Bastiaan Vanacker *and* Don Heider, *Editors*

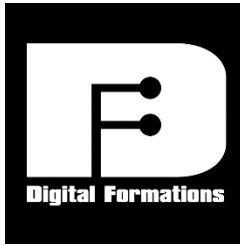
The second volume of *Ethics for a Digital Age* contains a selection of research presented at the fifth and sixth Annual International Symposia on Digital Ethics hosted by the Center for Digital Ethics and Policy at Loyola University Chicago's School of Communication. Thematically organized around the most pressing ethical issues of the digital age from a professional (parts one and two) and a philosophical perspective (part three), the chapters of this volume offer the reader a window into some of the hot-button ethical issues facing a society where digital has become the new normal. Just as was the case in the first volume, this collection attempts to bridge applied and theoretical approaches to digital ethics. The case studies in this work are grounded in theory and the theoretical pieces are linked back to specific cases, reflecting the multi-methodological and multi-disciplinarian approach espoused by Loyola's Center of Digital Ethics and Policy during its eight years of existence. With contributions by experts from a variety of academic disciplines, this work will appeal to philosophers, communication scientists, and moral philosophers alike.

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Ethics for a Digital Age

VOLUME II



Steve Jones

General Editor

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Ethics for a Digital Age

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Editors



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Foreword

DON HEIDER

Increasingly technology surrounds us, no longer as a tool or an aid, but as a way of life. As Luciano Floridi argues, we are experiencing a fourth revolution in human development, as we are becoming informational organisms living in a cocoon of technology (Floridi, 2014).

All this is happening without a full understanding or discussion of the ethical implications of this revolution. Evidence of this can be found now almost weekly, if not daily. People livestream murders and other unspeakable acts on Facebook and other platforms as the technology providers deny their role as media companies. Instead, the companies race to get a handle on how to control unruly and objectionable posts and ask for crowdsourcing help to police their sites. YouTube ads appear on anything from cute cat videos to clips of terrorists beheading hostages. Apparently the company never considered the implications of letting computers place ads.

When we founded the Center for Digital and Ethics & Policy in 2008, the idea was to help foster discussions and research about ethics involving new technology. We have found a community of scholars and professionals who are deeply concerned about issues such as privacy, access, piracy, behavior online, and more. Though scholars from many different disciplines have been engaging in research in this area, we have a void when it comes to the tech companies themselves. Not that these companies are filled with people with no moral grounding. But there is a deafening silence from the leaders of these organizations when it comes to ethics.

Some have described a bubble of arrogance surrounding Silicon Valley, where CEOs often equate financial success to moral superiority (Edwards, 2013). Add that to a lack, thus far, of serious regulation and you begin to see the scope of the problem. We have now begun calling on tech companies to consider hiring trained ethicists; people who, if given the chance, might

help leaders make better decisions about the technology they unleash upon us on a regular basis (Heider, 2017). In the meantime, we will continue to gather excellent research and hold yearly symposia in an effort to spur on rich discussions of the issues at hand.

In this volume we offer 10 chapters, all with important research regarding digital ethics. Susan Currie Sivek discusses emotion analytics tools, used increasingly to not only record what we are thinking about but also to sense, record, and respond to emotional information. This is especially important information to advertisers, who have known for years that appealing to our emotions is often more effective than appealing to our intellect. The data that now can be collected includes not only our facial expressions, but also things like blood pressure, voice stress, perspiration rate, and body temperature. This raises new and important questions about privacy and who controls our data.

Joseph Jerome and Bénédicte Dambrine discuss our new sharing economy, which is also by the way, data driven. Who controls that data, and with whom it is shared is an important question. Most of us might not expect that our ride-sharing history might end up in the hands of the F.B.I. or some other state security agency. Jerome and Dambrine endorse more transparency, so we know when our information is being recorded, stored, and transmitted and why. How companies respond when an employee has a social media mistake is the subject for study by Heidi McKee and James Porter. The two scholars use rhetorical analysis and a network perspective to shed light on the subject. When using social media, when is a person speaking as a representative of the company whom they work for and when are they speaking for themselves as individuals? What policies do companies have in regard to employees' use of social media? Does the culture of a company influence employee behavior? These are all questions companies need to think through, as well as what an appropriate response is when there is a misstep.

Digital technology has raised an interesting new set of questions for journalists, as Kathleen Bartzen Culver found out, including some ideas about when, where, and how drones should be used. Drones in the United States do fall under regulations set by the Federal Aviation Administration, but beyond laws, Culver explores the ethical concerns, not just from journalists but also by citizens for whom journalists are producing their work.

Chad Painter and Patrick Ferrucci wondered how digital journalists who do not work for legacy media organizations conceive of themselves as journalists, and how that might be different from traditional practitioners. Meanwhile, Stephen Ward believes the digital shift calls for a form of radical journalism ethics. He calls for a new global journalism ethics which is "discursive in method,

imperfectionist and non-dualistic in epistemology, integrationist in structure, and globally open in criticism.”

As digital technology has developed, there are some new behaviors that have emerged or behaviors that have morphed in some way due to the technology. One of these is the idea of public shaming, also sometimes labeled cybervigilantism. Mathias Klang and Nora Madison compare acts of cybervigilantism to the concept of vigilantism to see how accurate this label may be. It’s an interesting discussion, especially given that this behavior continues to be prevalent in the online community.

Philosopher David Gunkel contributes an outstanding and thought-provoking piece on whether machines, in this case robots, can and should have rights. It’s a much thornier issue than it may seem at first blush. In a chapter that has some interesting common ground with Gunkel, Timothy Engström looks at our physical bodies and how the digital devices often used in diagnostics and treatment raise a myriad of questions about consent.

We wrap up the volume with a look at space, as David Allen discusses the importance of public space in the vitality of a democracy, and questions whether digital media can provide a meaningful public space for citizens.

As we approach having four billion people on the Internet, with Americans spending an average of ten hours a day engaged in Internet media, the ubiquitous nature of digital technology in addition to the reluctance of CEOs of silicon valley firms (and others) to take real responsibility in even discussing ethical concerns demonstrate the need for the research found here, and much more research to come. We offer this volume as a small effort to get the world to engage seriously in some very important questions about privacy, access, behavior, and more that are not going away, but in fact, will increase with time.

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***Part I: Trust, Privacy, and
Corporate Responsibility***



Introduction to Part I

DAVID KAMERER

Perhaps the most visible digital ethics issues are connected to business. Technological innovations allow businesses to know their audiences better, interact with them through social media, and facilitate transactions. However, these opportunities also carry substantial risks if executed without ethical forethought.

A student once bragged that he had figured out how to get rid of the ads on Google's Gmail service. "Just send a fake note to someone, and in it, express grief over a suicide. The ads will just stop—for a while, anyway."

If this scenario is true, it's an example of the emerging technology of emotion analytics. You might think emotion analytics are only found in a research lab, but no. They're here today. Susan Currie Sivek presents a series of applications and companies working in this area and asks some important questions about the technology.

What kind of data lies at the core of emotion analytics? Think of the Microsoft Kinect camera, perhaps the most common facial recognition tool. When you use a Kinect, you know you're being tracked. It's just for fun. But some retail stores use a similar technology to watch customers. This presents very different ethical issues. While no "killer app" has yet emerged, and while people will likely push back once they're made aware of it, it's not hard to imagine ethical issues arising by the broad diffusion of facial recognition software.

And faces are just the beginning of emotion analytics. Think of what your phone knows about you: your location, how much exercise you're getting, and social artifacts such as self-reported moods on a social network. Throw in some external sensors (Fitbit, anyone?), and you can measure physiological responses. So many possibilities.

But Sivek is no technological determinist. Holding emotion analytics back are two major issues: privacy and informed consent. People have differing levels of acceptance of surveillance and will reject anything that crosses an invisible line. What is acceptable to one person may be creepy to another. And companies will have to clearly demonstrate the benefits of emotion analytics in order to gain the assent of their audience. As these technologies become pervasive, the devil will be in the details.

Still, as a cautionary tale, consider the case of tracking cookies on the advertiser-supported web. In the United States at least, no one asks if you object to being served advertising tracking, and as a result data about us flies across the Internet at lightning speed. Is this the path we want with emotion analytics?

The other two chapters in this grouping of applied research place social media in their sights. Joseph W. Jerome and Bénédicte Dambrine consider the intersection of trust and privacy in the sharing economy, that world in which we Uber to our AirBNB.

Trust is the lubricant that makes this economy work. And trust often must be mutual. In a ride share, the passenger expects a safe vehicle and a competent driver, but the driver must also trust the passenger to show up on time and to pay for the ride. Mutual trust is also necessary in vacation rentals; the renter has to trust the listing details, and the owner must be comfortable having a stranger in their home.

In the sharing economy there are two primary ways to establish trust. One relies on a direct intervention by the platform, such as when a ride share company requires criminal background checks for its drivers. The other approach is through a reputation system, whether by feedback, social connections, or a public profile.

But what if you don't have or want to have a public profile? Despite the ubiquity of Facebook and other networks, there are many good reasons to not participate. Yet services such as Uber and AirBNB are exerting real changes in our infrastructure. In the near future, we may depend on these services just as we used to depend on taxis and hotels. The authors are wary of this approach, noting that, unlike credit scores, there is no regulatory protection for social data. Privacy can quickly become roadkill in an environment that relies so heavily on social data. The authors look to the US Federal Trade Commission's FIPPs (Fair Information Practice Principles) as one framework that can help protect both sides' data. And they fairly ask: must your social graph become your universal ID?

Heidi A. McKee and James E. Porter go back to the roots of classical rhetorical theory to examine the ethics of dealing with employees' missteps on

social media. How should a company handle negative or off-brand posts by employees? They discuss one well-known case—when Justine Sacco, a public relations professional working for Internet company IAC sent a racist tweet before flying to South Africa—and one case that flew under the viral radar, of a disgruntled employee writing negative comments about his or her employer on an anonymous blog.

The authors develop a model that includes consideration of the agent and the event, but also considers cultural and historical context, response, and the unique qualities of information and communication technology. In Sacco's case, they note that her role as a professional communicator made her a more likely target for scorn than, say, an accountant or janitor. IAC instantly fired her, and, though she had less than 200 followers on Twitter, she became "Internet-famous" so quickly that the hashtag #hasjustinelandedyet trended globally on Twitter, and someone actually went to the airport to take a picture of her deplaning.

The case of the slanderous blogger was handled completely differently. Here, the CEO (and victim of the slander) circled the wagons and engaged his employees, employing phronesis, or practical wisdom. Eventually the employee took down the offending post, ostensibly having been led to a consideration of the greater good.

If Quintilian were working today, he might define rhetoric as "a good person, tweeting well." McKee and Porter build a meaningful bridge between that ancient body of knowledge and the thrum of digital media today.



1. Media That Know How You Feel: The Ethics of Emotion Analytics in Consumer Media

SUSAN CURRIE SIVEK

It's a moment that can strain even the best relationship. A couple sits on the couch after a long day, ready for an escape into the multitude of worlds offered by Netflix. They click restlessly from title to title, evaluating plot summaries and star ratings, searching for the perfect movie that will satisfy their emotional needs. The inefficiency and conflict of the search wear on them. Eventually, they give up and just go to bed.

For better or worse, new technologies may soon prevent this fruitless search scenario. Instead of requiring users to evaluate media options on their own, media recommendation and targeting engines will use emotion analytics to assess users' emotional states and match them to suitable media and advertising. Emotion analytics draws upon omnipresent mobile devices, increasingly low-cost and powerful cloud computing, biometric sensors embedded in multiple consumer products, and social media input provided by consumers themselves to determine how audiences feel at any given moment. Users of digital media providers—like the couple above, stumped by Netflix's huge range of choices—will likely receive suggestions or feeds of media that have been shaped by emotion analytics, thereby more easily finding options that suit their current emotional status and needs.

Avoiding the Netflix crisis described above sounds desirable, to be sure. Yet the growth of emotion analytics and the integration of this technology into consumer media experiences and devices also bring significant ethical challenges. Users' emotional data are among the most private types of information that they might share with their devices. However, they might not understand how those data are gathered or even be aware that they are

collected. The media and advertising they consume may also have been modified based on emotion data. As a whole, the ethics of designing and delivering marketing and media messages based on emotion analytics should be examined closely.

Defining Emotion for Computers

Emotion analytics tools have emerged from the field of affective computing, which combines computer science with psychology and cognitive science to integrate emotional savvy into technology. Affective computing researchers develop tools that “recognize, express, model, communicate, and respond to emotional information” (Picard, 2003, p. 55). Ideally, these tools help computers smoothly interact with humans by integrating emotional awareness into their communication. The computer can recognize how a human user is feeling, offer an appropriate response that demonstrates empathy, and perhaps also express (what may be perceived by the user to be) actual emotion. Some of the current methods for detecting users’ emotions include facial expression and gesture recognition via cameras; voice analysis; physiological data, such as pulse and respiration rates; and analysis of spoken or written comments (Tao & Tan, 2005).

Helping computers recognize and simulate emotion is technically challenging. Human emotion would appear to be too complex and idiosyncratic for even the most powerful computers to comprehend. And yet, researchers have developed ways to define and operationalize emotion in such a way that computers can identify and classify its expressions. It is important to note that *emotions* are key in these emerging technologies, as opposed to *moods* or *feelings*, which appear to be synonymous terms. Affective computing has a particular interest in the short-term reactions—emotions—expressed by humans during their interactions with technology. If devices are intended to respond appropriately and immediately to human expressions of frustration or happiness, they must be able to quickly recognize emotions. The term *emotion* is generally used to describe this short-term reaction to an event, either internal or external to the individual, which can include expressions, physiological “symptoms,” and a “subjective experience” of a *feeling* in response to the reaction (Scherer, 2005, pp. 697–698). *Moods* are regarded as distinct from emotions. Moods are “diffuse” states of longer duration in which particular *feelings* dominate; they may or may not be linked to specific events (Scherer, 2005, p. 705).

Categorizing and Detecting Emotion

To simplify computers' recognition of emotions, many affective computing researchers have adopted typologies of emotion developed by psychologists and then taught devices how to categorize emotion data. Among these typologies, Paul Ekman's research has become central. Ekman has sought to demonstrate not only the universality of certain "basic emotions" across human cultures, but also the uniformity of certain aspects of facial expressions and physiological activity related to those emotions. In his initial research, Ekman established six basic emotions: anger, fear, happiness, sadness, surprise, and disgust (Ekman & Friesen, 1976). Later studies led Ekman (1999) to add amusement, pride in achievement, satisfaction, relief, and contentment to the typology.

Based on this research, Ekman developed the influential Facial Action Coding System (FACS), a system of highly detailed guidelines used for "comprehensively describing all observable facial movement" (Ekman & Friesen, 1976; Paul Ekman Group, 2016). Using this detailed description, Ekman's system enables the classification of human facial expressions into his typology of basic emotions. The FACS has been refined and tested in multiple contexts over the years since Ekman first introduced it. People in varied occupations, such as law enforcement and sales, seek FACS certification to better understand "microexpressions" and their interlocutors' emotions.

Researchers have now enabled computers to apply the FACS guidelines for the purpose of recognizing emotions in human facial expressions (e.g., Hamm, Kohler, Gur, & Verma, 2011). A full history of the development of computers' "machine vision" and face recognition algorithms is beyond the scope of this chapter, but Pentland and Choudhury (2000) provide an excellent overview. Notably, 16 years ago, these authors stated:

...facial expression research has so far been limited to recognition of a few discrete expressions rather than addressing the entire spectrum of expression along with its subtle variations. Before one can achieve a really useful expression analysis capability one must be able to first recognize the person, and tune the parameters of the system to that specific person. (2000, p. 7)

Today, computers' recognition of facial expressions has become much more detailed. Computers now can access facial expressions through increasingly common, high-resolution cameras, such as webcams in laptops, front-facing cameras in smartphones and tablets, and cameras attached to home entertainment devices (e.g., the Microsoft Kinect camera for the Xbox gaming system). Devices with cameras also are tied to specific users' personal data.

All of these devices are constantly collecting additional forms of data that can be combined with camera inputs to aid in the recognition of users' emotions. These devices may be wearable, such as a heart rate monitor built into a fitness device or smart watch; they may be integrated into devices, such as smartphones that analyze user's app usage patterns or intensity of touch; they may collect data within an environment, such as sensors within a home or business that detect movement patterns and factor restless or sedentary states into the analysis of emotion. In addition, social media platforms collect emotion data when users share text, emojis, likes, or other "reactions" (as on Facebook). If coordinated, these tools can compile a holistic assessment of an individual's (or group's) emotions from moment to moment, and enable computers and their users to respond accordingly.

Emotion analytics is a relatively new term that parallels the application of "analytics" in a variety of industries. Companies in this field are using insights and tools developed in academic research, such as the work of Ekman and of researchers at the MIT Media Lab, and integrating them in many different contexts, including homes, businesses, and educational institutions. Emotion is now yet another factor that can be incorporated into "big data," the array of personal data gathered on individuals from other digital sources, and now can be used to shape products and services. So far, emotion analytics companies primarily appear to be marketing their emotion analytics tools for the testing and enhancement of advertising messages, media content, and product design, with additional wearable devices and ambient emotion detection systems (for use in homes and retail stores, among other settings) in their preliminary stages of release.

Emotion Analytics and Ethics in Media Applications

Emotion analytics techniques are already used today in the development and delivery of consumer media experiences, including advertising and entertainment. For decades, marketers and media companies have tested their work on focus groups and individuals to try to maximize messages' appeal to target markets. However, these tests rely primarily on human audiences' ability and willingness to express their honest responses to what they are shown, which may not always reliably measure the messages' effectiveness. As a result, media researchers have turned to technologically intensive methods, such as eyetracking, EEGs, and functional MRI scanning (as detailed in Bridger, 2015). Emotion analytics can now be added to that list.

As emotion analytics continues to gain momentum and investors' attention, it will be more widely integrated into consumers' media experiences.

Messages' content can be shaped with insights from emotion analytics, and these tools will be used to improve the delivery and recommendations of music, movies, or other products in customized flows of media (i.e., in systems resembling Netflix, Pandora, etc., which actively suggest specific media for their users). This integration into media raises difficult ethical questions. The remainder of this chapter will address the specific ways emotion analytics are being used in consumer media as of this writing, as well as ways they will likely be extended in the near future. A review of the websites of 10 companies involved in emotion analytics and media—as well as news coverage of their work and their patent applications—reveals the many ways these technologies are currently being used. This review also suggests that the numerous ethical concerns they present have been little discussed in public discourse.

Current Uses of Emotion Analytics in Media

Advertising Content and Delivery

Emotion analytics companies offer services for advertisers and agencies. They provide testing of advertisements that is meant to reveal precisely how consumers feel upon viewing an ad. These companies assert that ads that cause emotions are more effective: “Emotional campaigns are likely to generate larger profit gains than rational ones. It’s a fact: establishing an emotional connection with the audience creates a more effective tie,” says Eyeris. Similarly, Realeyes’ website states, “Emotional content multiplies effectiveness. The more people feel, the more they spend. Research has firmly established that emotional content is the key to successful media and business results. Intangible ‘emotions’ translate into concrete social activity, brand awareness, and profit.” These companies uniformly argue that their advertising analysis methods lead to deeper understanding of emotions caused by these messages, and that the more sophisticated evocation of emotion will lead to greater profit.

In addition to shaping consumers’ emotions through skillfully crafted ad content, emotion analytics can help deliver targeted advertising precisely when it might best strike an emotional chord. Emotion analytics built into media devices could identify a consumer’s emotional state and send a specific advertisement meant to capitalize upon that state. According to an Apple patent, existing audience targeting systems rely on an overly broad understanding of the user’s “interest in targeted content.” Weak targeting “can lead to periods of time where the targeted content delivery is misaligned, thereby resulting in decreased satisfaction for both the content provider and the content receiver”

(Greenzeiger, Phulari, & Sanghavi, 2015). Apple's solution for more effective alignment and increased satisfaction is to synthesize a huge array of data on the consumer. As listed in a recent patent, these data could include:

heart rate; blood pressure; adrenaline level; perspiration rate; body temperature; vocal expression, e.g. voice level, voice pattern, voice stress, etc.; movement characteristics; facial expression...sequence of content consumed, e.g. sequence of applications launched, rate at which the user changed applications, etc.; social networking activities, e.g. likes and/or comments on social media; user interface (UI) actions, e. g. rate of clicking, pressure applied to a touch screen, etc.; and/or emotional response to previously served targeted content...location, date, day, time, and/or day part....music genre, application category, ESRB and/or MPAA rating, consumption time of day, consumption location, subject matter of the content, etc. (Greenzeiger et al., 2015)

(Followers of Apple technology will likely recognize features of the Apple Watch, the Apple Health app, and the Force Touch pressure detection sensors now embedded in various Apple mobile devices and accessories.) The patent also mentions the need for compliance with “well-established privacy policies” and for “informed consent” by the user, who may opt out of this data collection.

Khatchadourian (2015) reports on a console developed by Verizon for home use that will select ads based on a similarly long list of data points, including home occupants' body temperature, voices, demographics and physical characteristics, facial features, language, activities, digital activities on other devices, and—naturally—emotions. The console would display ads on the available media devices that were judged appropriate by the analytics: “A marital fight might prompt an ad for a counsellor. Signs of stress might prompt ads for aromatherapy candles. Upbeat humming might prompt ads ‘configured to target happy people’” (Khatchadourian, 2015).

Affectiva claims on its website that these methods of targeting are supported by research: “Evidence has shown that targeting of advertisements can be beneficial to consumers and raise the profits for all involved.” The “benefit” to consumers appears to be that they are shown ads that are more relevant to them at a given emotional moment, which presumably makes advertising more informative and tolerable.

Media Messages' Content and Delivery

The media content surrounding these advertisements is also likely to be subjected to emotion analytics, given that it will contribute to an audience's emotions when exposed to an advertising message. For example, Affectiva