The Relational Self-Portrait: Selfies Meet Social Networks
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Introduction

Social network sites such as Facebook did not emerge by accident. Rather, they evolved from two historical ideas: the idea that a person can be signified by a static object or set of such objects (such as portraits, personals ads, and sculptures), and the idea that one can represent human relationships as discrete person-to-person connections. These ideas may seem obvious at the present moment. Yet, one may just as easily suggest a world in which relationships are defined primarily by one’s association with a well-bounded group (such as a clan, tribe, or company), and a culture where static representations of people are seen as vulgar, vain, or even blasphemous, and where any contact other than face-to-face contact is to be regarded with suspicion or painted as inauthentic.

To say that social network sites (SNSs) combine personalizing technologies and person-to-person relations puts them in contrast with a host of earlier media and ways of maintaining relationships. SNSs consist of personalized digital artifacts curated by a third party, such as Facebook, LinkedIn, Twitter, or Weibo (Hogan 2010). Unlike virtual worlds, telephone conversations, or personal interactions, communication is not generally done in synchronous (or “real-time”) settings. Instead, artifacts are distributed asynchronously to specific people in their own time, in their own separate physical settings. While synchronous interaction comes naturally to humans, usually through conversation and body language, asynchronous interaction, whether it is cave paintings, postcards, or tweets, necessarily requires a medium to store this information across time.

Prior to SNSs, there were many ways for individuals to communicate asynchronously, such as via letters, starring in film or television, being on an audio recording, sending email, instant messaging, and chatting on a bulletin board. With these media, we can construct a social network of information flow if we can point to a specific sender and a specific receiver. We can say that Alice emails Bob or that this audience saw Dave in this movie. The difference with
SNSs is that the social network does not merely emerge from the person who is communicating with (or to) whom. Instead the network exists a priori. The network defines who can and does access each other's content.

In this chapter, we follow the trajectory of the two key ideas (static profiles and person-to-person connections) that go into making an SNS. We start by discussing the profile as extension of the self-portrait and then discuss how social networks emerge from person-to-person relations. As these ideas converge on SNSs, we might say these sites exist as sets of relational self-portraits.

This convergence of ideas takes a different shape on different sites. Each site might have a slightly different answer to some fundamental questions: How to label a relationship? Is it necessary to use one's real name? Should friendships be given a numerical value? Should a relationship be directional (where one follows a celebrity on Twitter) or symmetric (where two people are contacts on LinkedIn)? To discuss how the answers to these questions work in concert helps to clarify some of the fundamental qualities of SNSs. After this discussion, we introduce a theoretical lens known as “networked individualism” (Rainie and Wellman 2012) that we hope prompts new research questions about SNSs as they exist today and the practices that will emerge in their wake.

Profiles: Writing the Self into Being

All SNSs include a profile. A profile is a snapshot of the self: a written “selfie”. The profile on an SNS is a shadow of lived experience, selectively looking back at whatever the user (and the user’s friends) wishes to attach to it. In Facebook, a profile often includes a person's head-shoulders picture, gender, relationship status, favorite movies, and a self-description. On Twitter, profiles consist of a photo, a location, and terse description. For example, Wellman’s profile currently includes an old sepia-toned photo and the following description:

Networked http://amzn.to/zXZg39 = networks+personal internet+mobile availability = networked individualism. RT = inform, ≠ endorse. Favorite ≠ like Block jerks, spam

Wellman’s profile also includes nearly forty thousand tweets. Some are his contribution to a larger conversation, while most are links and quotes representing him and his audience.

Profiles offer a strong sense of individualism since the aggregate presentation of so much information linked to a single person helps to define that person. Even if the picture is partial, it is still often very thorough. To note, we do not think that the profile is historically unique, even if it benefits from contemporary technologies. Rather, it is part of a long line of technologies and practices for signifying the self that stretch back millennia. Two antecedents are especially important: the portrait and the personals ad.
The *portrait*, first sculpted or painted and more recently taken as a photograph, is an early personalizing technology (perhaps second only to grave markers such as tombstones). It was first employed to memorialize the dead (in ancient Egypt and China) and valorize the esteemed and powerful (throughout the world). Recall the crumbling statue in the desert that Percy Bysshe Shelley memorialized in his 1818 poem about a fictional hero:

“My name is Ozymandias, king of kings:  
Look on my works, ye Mighty, and despair!”

Shelley’s inspired poem simultaneously indicates many notable aspects of portraits (even if, strictly speaking, it is describing a statue). First, portraits persist outside of the self, as this statue purportedly lived on beyond Ozymandias. Second, there is a temptation towards vanity within the portrait. In contemporary language, the portrait is a selective representation of the self, often trying to put forward the best impression. Ozymandias sought this through a proud pose and a hyperbolic warning. And third, although the profile exists outside the self, its permanence is never guaranteed.

A portrait is a means of signifying an individual, and by extension, noting that an individual is worth signifying. Yet, a portrait is also decontextualizing. Unlike epic poems or plays, a portrait lifts an individual out of a specific context aesthetically. The background for a portrait has typically been dark, neutral, or unremarkable in order to draw one’s attention to the individual and not the surrounding space. The choices of attire and accoutrements have traditionally been considered as signifiers of individuals, their tastes, and their statuses. In general, these additional features were meant to indicate something about the individual who was the focal point of the portrait. Indeed, people have been listing their “likes” for millennia.

Traditionally, making a portrait has been a laborious task. Painting is a skilled art, and even portrait photography requires scene setting, attention to detail, and often make-up. Particularly prior to the age of technological reproduction (and certainly digital reproduction), the portrait has been a high-fidelity way to signify an individual, but also one that has been resistant to change, expensive to create, and difficult to reproduce.

In the seventeenth century a second significant personalizing technology appeared—*personals* or “lonely hearts” ads. Where a portrait is high fidelity, slow and exclusive, a personals ad is low fidelity, quickly read, and accessible. The ad is meant to be a terse characterization of the self that made a person attractive to others while signifying what the individual is seeking in someone else. Consider this ad, from the earliest known published column:

A Young Man about 25 years of Age, in a very good Trade, and whose Father will make him worth 1000L. Would willingly embrace a suitable Match. He has been brought up a Dissenter, with his Parents, and is a sober Man. (Beauman 2011: 1)
Much like the traditional portrait and the modern profile, there are markers of class (worth the then-notable sum of 1000 English pounds), age (25), values (a “Dissenter” from the established religion), and virtue (sobriety).

Personals have grown in use over the past few centuries, but continue to carry some elements of stigma for several reasons. First, personals may imply some moral failing—that individuals had to resort to a terse characterization of the self rather than meet first in person. Second, personals may be false, or at least misleading. There is much research on how individuals routinely lie on online dating sites, but often in small ways that serve as a form of selective or even aspirational impression management rather than outright deception (Ellison et al. 2012). Third, personals are meant to advertise an individual rather than an individual-plus-social-network. Anonymous ads mean the sender is not subject to the judgments of friends and family, while the reader cannot tell much about the sender’s social skills or social connections.

As technology increased, so did the fidelity of the cues available in the personals. For example, the video ads that emerged in the 1980s often operated through an agency that would videotape a client; in short, a personals advertising agency. A matchmaking agency can show the video to appropriate candidates, and it would indicate facial expressions, physical attractiveness, mood, and other subtle paralinguistic cues. Yet, the videos are still decontextualized and individualized. That is, one can infer markers of class, locality, and income from the video, but rarely can a viewer know if this prospective suitor also knows the viewer’s friends, family, or any other social connections. The people in these personals are still strangers without visible interconnections.

SNSs have overcome the stigmas of the personals by embedding the profile in a large pre-existing social network that includes both the viewer and the viewed. Many sites traditionally expect this social network to reflect existing role relationships. Facebook has especially cemented the notion of the “Real-Name Web” by insisting that people use their own names and identities (Hogan 2012). That said, not every profile photo is necessarily a photo of the real person, nor every name a real name. For example, many Japanese use both pseudonyms and anime cartoons on Facebook and the locally popular Mixi site (Fogg and Iizawa 2008). Under what circumstances individuals decide to use real names versus pseudonyms remains an open question.

Portraits and personals coalesce in the modern SNS profile, as profiles include both photos that signify the individual (often next to messages on the SNS), and selective revelations about the self that a user considers appropriate to that site. By reflecting on portraits of old, we see how photos can valorize the self and drift toward vanity. By reflecting on personals, we see how the modern profile’s self-descriptions, taste markers, interests, and past conversations do not simply exist to create a static immortalized self, but a dynamic and selective digital self that can link to and communicate with others.
From Homepages to Profiles: Simplifying Self-Representation

Prior to the emergence of SNSs, many Internet users were seeking ways to create self-representations online. We argue that this was brought on by the emergence of the World Wide Web in 1991. Prior to the Web, the Internet still functioned as a means for sharing documents (through early systems such as Archie and Gopher) and person-to-person communication (through email, Usenet, and IRC). The Web brought together these technologies in a means for individuals to browse documents that included pictures, text, and a consistent mechanism for linking from one document to another.

Documents on the Web initially began as web “pages” that used Hypertext Markup Language (HTML) to enable people to position images, links, and text together. The technology to do this was a formidable challenge. By the end of 1994 there were approximately 10,000 websites (Gray 1996). In 1995 this number exploded to 100,000 and continued its exponential growth. One of the key contributors to this growth was Geocities—a site that allowed individuals to self-publish a web page as a “homepage.”

Homepages function as self-contained sets of documents, often dedicated to a specific theme such as pets, travel, or famous actors. Sites hosting homepages, such as Geocities, Angelfire, and Tripod helped reinforce the Web as a place “out there.” People could construct web pages that were singular and self-contained testaments to their interests and technical skills. These sites were reminiscent of a modern portrait: a great deal of effort displaying a specific theme or person, along with signifiers of his or her interests that were difficult to repackgage or distribute. Outside of a comments page and a hit counter, homepages consisted almost entirely of content uploaded by the page owner. They often were unsystematic, unwieldy, and borrowed heavily from the copy and paste culture of amateur webpage designers. Such homepages were haphazardly designed bricolage as much as portraiture. They were projections of a home in “cyberspace,” part of a longstanding (mis)use of spatial metaphors for online data (Star 1996; Graham 2013).

At the turn of the 21st century, the popularity of homepages waned in favor of the profile. Even though Geocities was one of the most visited domains in the world in 1999, by 2009 it was considered defunct and was shut down by its current owner Yahoo! in every market but Japan. The transition away from the homepage was not simply an aesthetic choice for Internet users. It was the culmination of technologies for enabling pages to display on-demand socially relevant information. Some of the key technologies involved include PHP (Pre-Hypertext Processing), MySQL, and JavaScript. Initially these technologies were meant to simplify the process of rendering dynamic content (such as a shopping basket), but in the mid-1990s they blossomed into a dominant
framework for interfacing with the masses of data that were being collected and stored in organized databases.

This new potential has been liberating, and a welcome means for meeting the increasing demand to access the burgeoning Web. It has become possible to start searching and finding—a welcome relief in a world that started to become overwhelmed by information overload. But this technology was also constraining. Whereas a homepage is typically a free-for-all of self-representation, databases require rows of well-formed data. On Facebook, for example, the user is expected to fill out a bevy of very specific information requests, such as one’s e-mail, age, gender, interests, and location. Providing such well-formed data lowers the barrier to entry for online self-representation, but it also creates more systematic a priori categories for people to use, such as employment, relationship status, or religion.

Networks and Social Network Analysis

Databases of well-formed data, like date of birth or universities attended make it easy for any user to search for other users. Consequently, a horde of use cases emerged to leverage well-formed data online, such as job listings, auctions, and dating. One need only fill in the keywords and browse the results. But friendship is different. A person’s friends are not separate segmented objects plucked from a shelf, but clustered around sites of social cohesion, such as cohorts, churches, voluntary organizations, neighborhoods, and teams (Fischer 1982). Friends are part of a vast interconnected social network.

As a concept, social networks have been around for almost a century in different forms. Their ability to make sense of the world has shed new light on social relationships dating back millennia. Anywhere that a researcher can define specific relationships between two or more people, the relationships can be considered a social network (Wellman 1988).

As a means of representing the world, the study of social networks consolidated in the early sixties out of a confluence of mathematical graph theory, ethnography, and interpersonal “sociometric” psychological studies (Freeman 2004). Since then, the field has emerged as a leading approach to social scientific study and has made rapid inroads in physics, biology, computer science, and other academic and corporate domains.

Networks at their simplest require two sets. The first set is a list of “actors” or people. With that first list of people, one can build a database table with one row for each person and details about the person, such as his or her name and attributes. We can sort this database or filter it down based on keywords. This process of filtering and sorting is precisely what one can do on traditional dating sites or job search sites.
The second set denotes the connections between these people. Where actors represent the dots in a network diagram, connections represent the lines that connect these dots. As users collectively befriend and follow each other, they collectively create a social network rather than merely a very long list of people. Now one can search, for example, for high school friends, fellow co-workers from a particular company, members of the amateur hockey team one is playing next week, and "people who are in a photograph with me." The rationale for these searches is obvious—these relationships come pre-packaged with certain memories, meanings, and sentiments for one user in particular, not all users in general.

Social network analysis has not merely foreshadowed the emergence of technologies for including friendship relations between profiles: it has also presaged the challenge of how to formally encode these relationships. Several approaches exist to encoding, but the most fundamental is whether to consider a relationship as directed or undirected.

A directed relationship suggests a flow. As water and traffic are organized to flow one way through pipes and roads, information can flow from one profile to another. Bob shares a story with Alice, and she then shares this story with Ted. But, information flows may also be reciprocal, where Bob shares a story posted by Alice, and then Alice shares a story posted by Bob.

An undirected relationship suggests a mutual acknowledgment. For example, we could say Alice and Bob know each other, or Bob and Ted were both at the same party. Personal networks have traditionally been measured as undirected networks of acknowledgment. One would ask "Are Bob and Ted close?" referring to their interpersonal closeness. This is simpler than building the network by asking "Is Bob close to Ted?" and "Is Ted close to Bob?" (Wellman 1979).

SNSs embed this fundamental distinction into their products. Arguably, this distinction between directed and undirected is unavoidable, since it is embedded in every relationship on the site. If Twitter moved from being directed "Alice follows Bob," or "Bernie Follows Ted," to an undirected "Bernie and Ted know each other," it would radically change how the site operates. Celebrity Ashton Kutcher has more than 15 million followers but only follows about 700 people (<https://twitter.com/aplusk>). If he had a twitter feed including all 15 million it might become completely unusable. Instead, Kutcher operates as an opinion leader, taking in information from innovators and early adopters and diffusing it to many others (Rogers 1995: 518).

Twitter and Google+ both have directed relations. They are platforms for diffusing information as well as for interpersonal communication. By contrast, Facebook (through "friends") and LinkedIn (through "contacts") have undirected relations. On these latter sites, after a user sends an invitation to be the recipient's friend, the recipient has to agree before the friendship is used.
to share content. Content sharing can then be linked to personally relevant information one wishes to share with their close friends (such as pictures of weddings, graduations, and newborns). The content is generally meant to be understood in a personally relevant context of other information both on and off the site.

This distinction between directed and undirected relations informs much of the current state of research on Twitter (directed; informational) and Facebook (undirected; identity). Although research on identity exists for Twitter and research on information flows exists for Facebook, these sites tend to have a knack for stimulating certain kinds of discussion that are aligned with these sorts of practices.

Considering Facebook, a large academic discussion concerns the capacity to engage with many audiences and manage competing demands in the same streams of information. Each friend or audience member may be personally relevant, but personally relevant in utterly different ways. Teens, for example, often have competing demands from school friends and authority figures (parents, teachers, etc.) that are in utter conflict (boyd 2007, 2014). Experiencing these multiple audiences at the same time leads to a sense that contexts have collapsed on each other, thereby creating challenges to privacy and impression management.

On the other hand, some information is not person-specific. The “news” is framed as something of collective interest. Twitter’s directed links allow individuals to follow hubs of information without having to be followed back. Tracking the flow of information through these links, between news sites, celebrities, everyday Twitter users, and even lurkers, enables questions of a more global scale. This has encouraged studies of large selections of Twitter data analysing collective political action, what happens on the site, and how much influence users have (e.g. Cha et al. 2010).

Leveraging the Complexity of Networks: Weighting and Clustering

Undirected or directed relationships merely scratch the surface of the complexity of networks. For example, ties in both undirected and directed networks can have a “weighting.” That is, Alice may be friends with both Bob and Ted, but she sends five times more messages to Bob than Ted. Relations without values are binary, with a 1 or a 0 marking the presence or absence of a relation: one is either a Twitter follower or not. This is a simplification of a relationship—reducing “best friends,” “the popular kids,” “casual acquaintances,” and so forth to “friends.” However, individuals in personal networks
may be considered within varying degrees of closeness or personal importance. Some friends are closer than others. But marking this and displaying it publicly (as in MySpace’s “Top 8”) is not as straightforward as simply knowing whom to call when in need. Social pressures, public face, and interpersonal drama all collude in making the Top 8 a challenging set to manage (boyd 2006).

There have been at least three broad approaches to classifying the relations on an SNS: weighting, tagging, and automating.

**Weighting:** Having individuals weight their impressions of others was one selling point of Orkut, Google's first social network site. A user could rate another user on three presumed dimensions of relevance: trustworthiness (or “trusty”), attractiveness (or “sexy”), and information gain (or “cool”). Users could then see the aggregate scores from all their friends.

**Tagging:** A relationship between two people can have any number of attributes, such as where the two people met, or whether they are family members. Tagging is an approach to labelling these relationships. In an early incarnation, Facebook asked how users knew each other when adding a friend. Google+ currently employs a tagging system referred to as “social circles,” that allows individuals to be as identified as members of multiple circles. Perhaps coincidentally, their metaphor of “social circles” dates back to early social network scholar Georg Simmel’s notion of partially overlapping sets of acquaintances, or literally, crosscutting social circles [kreuzung sozialer kreise] (cf. Simmel 1922).

**Automating:** The third approach to classifying relations is to use an implicit weighting scheme based on user behavior. This is the basis of “EdgeRank,” Facebook’s black box algorithm for ranking content from a user’s friends. It sidesteps the notion of filtering based on social circles, and it minimizes the burden on users. Simply by interacting with one’s network, one is training EdgeRank to learn what is important. One notable concern about automated systems is that they may work too well, thereby filtering in only content that someone already considers agreeable. This filtering can theoretically lead to what Eli Pariser calls a “filter bubble” (2011) that passively hides or minimizes dissenting viewpoints.

**Considering SNSs as Networked Individualism**

SNSs sit at the intersection of new database technologies for searching and sorting, and the cultural evolution of the profile as a means for representing the self. These technologies are individualizing as profiles tend to be used
to represent a single person (even if a single person has multiple profiles). However, these technologies are also networked, since well-formed profiles can be searched, sorted, and linked in creative and efficient ways.

The notion of modern life as "networked individualism" began before the rise of SNSs. It is an attempt to understand how modern media and living conditions are associated with shifts in how people maintain their relationships. It grew out of Wellman’s answer to "the community question," the perennial concern about the loss of community. In describing the durable personal networks of support (first in a borough of Toronto, Canada), it became apparent that focusing on networks of relationships rather than bounded local groups (such as community associations) more accurately explained how people get by (Wellman 1979).

The hallmark of networked individualism is that people operate "more as connected individuals and less as embedded group members" (Rainie and Wellman 2012: 12). In short, it is a way of describing the process of initiating and sustaining contact between people based on person-to-person contact, regardless of whether such contact is physical or digital.

Not all ways of sustaining contact are networked individualism, but all of them are a form of networking. The earliest networking was door-to-door. People would physically move from one place to another and often perform some ritual signifying their presence, such as knocking on the front door or clapping at the front of the house. Door-to-door networking is strongly coupled with physical co-presence.

The development of mediating technologies marked a shift from door-to-door towards place-to-place networking. Mediated place-to-place networking can be traced back as far as drum signals, letters, and carrier pigeons. It diffused widely with electricity and internal combustion engines as more places became networked through roads, airline routes, and the telephone grid. In place-to-place networking, contact is oriented around specific places rather than physical co-presence. Mail would be sorted in a mailroom, telephone calls would be received in the kitchen, meetings could be held across town, or, as is the case for many professionals, the world. Nevertheless, to receive a specific communication, someone still had to be at a specific place.

Person-to-person networking involves the direct connection between people regardless of place. While this does not obviate the relevance of space, it does mean that the media used to sustain contact are linked to a person. Most people still communicate with those nearby more than with those far away (Mok et al. 2010), but the communication can be at a grocery store, a pub, or in the middle of a meeting. The technical infrastructure that powers this communication is not hardwired to predetermined places, but to any node connected to the global telecommunication network. Granted, this network is not equally accessible across all places, due to differences in connectivity and censorship. But space has become more of a condition
of possibility for access to the network, rather than that which defines how networking takes place.

With the dominance of person-to-person technologies, teenagers may never know the awkwardness of having a friend or potential romantic interest call the house and have to deal with the parent answering the phone rather than the intended recipient. Email, mobile phones, instant messaging, voice, and webcams all directly link people to other people, rather than to people who happen to be at specific spatial coordinates adjacent to a mailbox or landline telephone. Recall that Romeo and Juliet died because they could not find each other to clarify their tragic plans. Now, if Julia had simply texted “fake poison, brb” [be right back], Romeo could have patiently waited out her slumber, and they might have lived happily ever after (Wellman and Rainie 2012).

We consider networked individualism as a practice and praxis rather than a description of a specific set of either technologies or network configurations. It is a practice because individuals who most successfully engage with these social network systems tend to be actively engaged with their profile(s), responsively commanding the interest of both strong and weak ties. As Rainie and Wellman assert (2012), it is a new social operating system for managing the “person-as-portal.” But it is more than a set of cultural scripts. It is praxis, in the sense of being an ideologically embedded practice that assumes a strong, if not necessary, bond to the state of technology and media. Facebook (like other SNSs) is not merely a website, but a bundle of specific design decisions about how individuals sustain contact with their friends, family, and (sometimes) fans.

There are both drawbacks and benefits to maintaining contact in a networked individualistic manner. The work of Robert Kraut and colleagues is instructive. In an early, widely cited study (1998), they noted that when the Internet was introduced into homes, feelings of loneliness increased among some people. They dubbed this the “Internet paradox,” since loneliness was seemingly induced by a social technology. It is worth remembering that while the Internet is inherently social, this study took place in the late 1990s when people were more likely to come across pseudonyms such as “BeatlesFan82” than to find a long-lost friend from high school or to organize a community barbecue.

A decade later, Burke et al. (2011) found more complex results. While those who passively consumed Facebook still felt disconnected, lonely, and had less interpersonal “social capital,” those who actively engaged their friends, communicated, and chatted, felt more connected and reported higher social capital. Their attitude to technology made the difference. The less successful users were acting as passive consumers, while the more successful users of Facebook were being pulled into a virtuous cycle of engagement and connectivity. They were approaching Facebook as networked individuals, with themselves as conduits for information and affect.
Conclusions

Contemporary SNSs are the confluence of database technologies and cultural logics of how to represent both the self and the connections between selves. By embedding a logic of social networks (and social network analysis) into the very fabric of the site, Twitter, Facebook, and their ilk exhibit a networked individualistic way of organizing relationships based on person-to-person contact. They also prompt us to ponder what comes after person-to-person networking? Based on the preceding discussion we consider several trends for future inquiry.

Profile-to-profile networking: Strictly speaking, profiles are not people but selective representations of people. As Harrison White (2008) has noted, identities are mechanisms for interfacing with networks, not unitary and stable objects. Different profiles for different purposes are already in use, but we may start to see this more explicitly, not unlike Blackberry’s recent attempt to create work and personal personae on the same phone.

Agent-to-agent networking: As algorithms get smarter, they may cease to merely curate our content, but manage it on our behalf. Google Now already anticipates searches by, for example, presenting the weather or directions to a hotel when one is in a new city. Will it start to manage invitations on one’s calendar? Will we see decentralized systems do this work as well?

The rise of graph searching: The formalization of the profile has led to network-based filtering and content access. Newer graph database technologies are taking this even further by enabling complex queries about friends and friends of friends. One can now ask Wolfram Alpha, “Who is the most popular person in my network?” Using graph searching, people will be able to make complex queries on Facebook (such as “friends-of-friends in London who are single, like Korean food and not friends with my ex-boyfriends”). If networked individualism is in fact a new “social operating system,” graph search may be networked individualism’s killer app and bring new meaning to the strength of weak ties.

In the end we will be left with many of the same challenges in a new guise: What do these media mean to my sense of self? What do these media mean for my relationships to other people? What do these media mean for the social contexts that help me define myself and learn about the others I consider important? The answer provided by SNSs is very contemporary: systematic profiles, inspired by networks and queried by databases, regulate access to others and their impressions. It is an evolution of cultural ideas and technologies. Yet, cultural evolution is neither deterministic nor necessarily progressive: technologies will surprise.
Like SNSs, newer media will arrive as extensions to existing ideas and constraints (both social and technological). Nevertheless, such media will still have to contend with many of the same practical issues, such as longstanding and stable patterns of human bonds, preferences for spatial locality, a small number of strong, multiplex (multiple context) relationships, and co-presence when practical. Such technologies will also have to contend with inequalities in operating systems, Internet access, and political power. And it is highly probable that, like the SNSs discussed above, they will reconfigure how we maintain access to others and present further challenges for what it means to represent the self.

REFERENCES


