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# Technology and Independent Practice: Survey Findings and Implications

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Today's rapid rate of technology change introduces both opportunities and challenges for psychologists. A Technology and Practice Questionnaire was sent to 1000 psychologists in independent practice, half of whom were contacted by e-mail and the other half by U.S. mail. A total of 237 of the 433 deliverable surveys sent by U.S. mail were returned (54.7% response rate), but only 49 of the 458 deliverable surveys sent by e-mail (12.9% response rate). Respondents were asked to rate the frequency of 51 behaviors in their practice and to indicate whether the behavior is ethical. The results suggest a relatively low rate of technology use among independent practitioners and a high degree of ethical uncertainty regarding the use of various technologies in practice. Implications for training and practice are considered.

*Keywords:* technology and practice, ethics, training, independent practice

When many psychologists were trained, Twitter was rarely used as a verb and music was distributed on compact discs (or vinyl). There was no "snail" before "mail," and the U.S. Postal Service was the standard way of distributing bills for services and requests for insurance reimbursement. Times change, of course, and so does the practice of psychology.

Technological advances provide many new opportunities for psychologists. Licensed psychologists may benefit from sophisticated management and administrative software, database systems that help them track their clients' treatment progress, various methods of wireless and Internet-based communication, smart phones that store calendar and contact information, electronic record keeping and data storage, computer-based tools with administering, scoring, and interpreting psychological tests, and computer-assisted therapies for treating various disorders (Fals-

Stewart & Lam, 2010; Garb, 2007; Jacobs et al., 2001; Kirsch et al., 2004; Tam, Man, Chan, Sze, & Wong, 2005; Williams, Lynch, & Glasgow, 2007). Some of these technologies have been well established for quite some time (McMinn, 1998) and have worked their ways into doctoral training programs. Other technological innovations are less well established (McMinn, 1998; Murphy, 2003) and may introduce training and ethical challenges in professional practice. The purpose of this article is to explore how psychologists currently use emerging technology as well as the challenges they face in doing so.

Identifying the challenges of technology in professional psychology is itself challenging, mostly because of the accelerating rate of change, with new wireless and computer technologies bombarding the personal and professional lives of psychologists at a mind-boggling rate. The current study was initially meant to be a 10-year follow-up study reported by McMinn, Buchanan, Ellens, and Ryan (1999), but the rate of change in technology has rendered some items on McMinn et al.'s (1999) survey less relevant than they were a decade ago. Some items referred to technologies that are now mostly obsolete. For example, confidentiality issues pertaining to playing audible messages from a telephone answering machine are irrelevant today because messages are typically left in private voice mailboxes accessible only to the psychologist. Another problem with replicating the McMinn et al. (1999) study is that most of the wireless and computer technologies being discussed today were not ubiquitous a decade ago. To replicate that questionnaire would mean not asking today's psychologists how they use newer technologies such as Skype or smartphones or social networking websites. After deciding not to simply replicate the McMinn et al. (1999) survey, we focused our interests on relatively recent wireless and computer technologies that retain a psychologist's direct personal involvement with a client. This excluded preprogrammed web-based products that are primarily psychoeducational in nature.

New technological innovations, such as social networking sites (e.g., Facebook), instant messaging, text messaging, and videoconferencing create opportunities for clinicians to provide services despite geographical barriers, but these innovations also come with

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ethical complications (Taylor, McMinn, Bufford, & Chang, 2010). Year after year, dual relationships, both sexual and nonsexual, are among the most common complaints to the American Psychological Association (APA) Ethics Committee and among the most frequent reasons for loss of licensure among psychologists (e.g., American Psychological Association Ethics Committee, 2010; Pope & Vetter, 1992). With the advent of new technologies, Internet search engines and social networking sites make it easier to gain access to personal information, creating even more possibilities for blurred boundaries between psychologists and their clients.

Keeping up with rapid technological changes is a daunting task for the APA's Ethics Committee. In 1997, the APA released a statement regarding the use of services by telephone, teleconferencing, and the Internet, recommending that practitioners use the current ethics code and sound judgment to guide their use of technology in practice (Pope & Vasquez, 2007). Revisions to the ethics code have been made since, negating this 1997 APA statement. Although the most recent revision of the ethical principles (American Psychological Association, 2002) made important amendments, specifying that psychologists must be competent in the technologies they use in practice, the principles and code of conduct still fall short of clear and concise regulations. We do not mention this as a criticism; this lack of precision may be both preferable and inevitable. If the ethics board were to issue specific regulations for particular technologies, they would only be as useful as each technology's longevity.

### Survey of Independent Practitioners

We conducted a survey to examine the instinctual responses psychologists have regarding ethical implications in various areas of practice. Although ethics should not be determined by democracy, the instincts of experienced clinicians might serve as a guideline for future conversations regarding professional ethics.

In September and October of 2009, we sent a Technology and Practice Questionnaire to 1000 psychologists in independent practice. Psychologists were identified through the APA Membership Directory. First, 600 Division 42 (Psychologists in Independent Practice) members were selected, including all Fellows and a random sample of other members, excluding associate and affiliate members. After observing that the psychologists selected by this method were mostly mid- to late-career psychologists, we identified an additional 400 psychologists who were earlier in their career than most of the sample obtained from Division 42 membership. These psychologists were also randomly selected from the APA Membership Directory, with the following inclusion criteria: they were state licensed, had obtained their doctoral degree after 1995, identified private practice as their employment, and were not Division 42 members.

Of the total sample of 1000 psychologists, we randomly selected half to receive the questionnaire by U.S. mail and the other half to receive the questionnaire via e-mail. We opted to do this after hearing conflicting anecdotal evidence from psychologists that they would "never complete a survey sent by e-mail" or would "never complete a survey sent in U.S. mail." Our hope was to ensure a more representative sample by using both delivery methods. In both cases, a small financial incentive was offered. Those receiving the U.S. mail questionnaire received two \$1 bills in the

questionnaire packet. Those receiving the e-mail were informed that those completing the survey would have an option of entering themselves into a drawing for one of four \$100 Visa gift cards. Both the U.S. mail and the e-mail letters were personalized, with the name of the psychologist listed on the greeting line. An interesting response rate disparity resulted with 237 of 433 (after 67 of the 500 were returned as undeliverable) responding to the U.S. mail survey (54.7% response rate) and 59 of 458 (after 42 of the 500 were returned as undeliverable) responding to the e-mail survey (12.9% response rate).

The questionnaire consisted of two parts. Part 1 was a list of 51 potential practice behaviors that related to specific uses of technology, such as "Providing professional services via e-mail." To develop the items, we reviewed relevant literature and met on several occasions as a research team. We began with a  $7 \times 2$  grid, with seven means of electronic communication (e-mail, videoconferencing, landline telephone, mobile phone, texting, instant messaging, and social network websites) and two types of professional services (direct client contact, consultation or supervision). Using this grid, we developed 14 items for the questionnaire. The remaining items were developed to assess practice management (e.g., billing, promotion of services), assessment, and emerging technologies. These three categories correspond with the three waves of technology described by McMinn (1998). Three items were selected verbatim from the McMinn et al. (1999) questionnaire to allow for comparisons over time. Four additional items were slightly reworded from the McMinn et al. (1999) questionnaire but had similar content. A list of all the questions can be found in the Appendix. Respondents rated each behavior twice. The first rating, subsequently called the Practice Rating, was a response to the question, "Is it part of your practice?," with options ranging from 1 (*never*) to 5 (*very often*), on a 5-point scale. The second rating, subsequently called the Ethics Rating, was a response to the question, "Is it ethical?," with the options being "No," "Questionable," and "Yes."

Part 2 consisted of demographic questions. The final sample of 296 respondents consisted of 52% female psychologists. The average age was 54.3 years ( $SD = 12.2$ ); 99% were licensed, and 14% were board certified through the American Board of Professional Psychology (ABPP). The majority of the sample was European American (82%), with 3% African American, 2% Asian American, 1% Hispanic/Latino, 2% Native American, 4% Other, and 6% not reporting ethnicity. Most respondents (72%) held a PhD degree. Another 25% held a PsyD degree. The median year of receiving the highest degree was 1991, with a range from 1950 to 2005. Respondents reported conducting an average of 78.0 psychotherapy sessions per month ( $SD = 49.4$ ) and 5.1 assessments per month ( $SD = 10.0$ ).

Survey results were first examined by tabulating frequencies for each level of response corresponding to practice areas and ethical judgments. Frequency data for each questionnaire item, as well as means and standard deviations for the response options related to practice areas, are listed in the Appendix. We then looked at the most common practices, reported in Table 1. Practice frequencies for these items were correlated with the age of respondents using a Pearson correlation coefficient, and gender differences and differences between online and paper respondents were examined using independent samples *t* tests. Next, the practice areas with the strongest consensus regarding ethics were identified. Table 2 lists

Table 1  
*Most Common Practices, Correlations With Age, Sex Differences, and Sample Differences*

Practice item	<i>M</i>	<i>SD</i>	Age	Sex diff	Sample diff
17. Faxing confidential information to another health care provider.	3.13	1.15	-.122*	-1.147	.923
19. Storing psychotherapy records on a computer, with password protection.	2.81	1.69	-.143*	-.478	-.601
21. Submitting electronic (paperless) claims to insurance companies.	2.69	1.73	-.050	.191	-.465
2. Providing professional services via telephone (landline).	2.68	1.04	.109	.329	-.551
25. Maintaining a web page that describes your practice.	2.56	1.88	-.118*	-.970	.511
28. Using computerized test-scoring software.	2.51	1.47	-.115	-.189	2.373*
9. Providing supervision or consultation via telephone (landline).	2.29	1.06	-.043	.062	2.292*
29. Using computerized test interpretation software.	2.27	1.39	-.101	-3.294**	1.279
3. Providing professional services via cell phone.	2.22	1.06	-.205**	.930	.826
42. Storing client contact information on a cell phone or data storage device.	2.18	1.60	-.167**	1.776	1.855
23. Scheduling appointments with clients via e-mail.	2.14	1.15	-.114	.634	1.013
27. Using computerized test administration software.	2.10	1.35	-.127*	-2.654**	.548

*Note.* This table reports items with an average rating of 2 or higher on a 5-point scale, ranging from 1 (*never*) to 5 (*very often*). Age is the Pearson correlation of age with practice behaviors. Sex Diff is a *t* value, with negative *t* values indicating that males are more likely to practice this behavior than females. Sample Diff is also a *t* value, with positive values indicating that electronic respondents are more likely to engage in the behavior than those submitting paper copies of the survey.

\* Significant at the  $p < .05$  level. \*\* Significant at the  $p < .01$  level.

the practice areas that received the greatest agreement, regardless of whether they were deemed ethical or unethical. In contrast, Table 3 lists the items with the greatest ethical uncertainty among respondents. Finally, responses on those items that were similar or identical to the McMinn et al. (1999) questionnaire are compared in Table 4.

### Implications for Professional Psychologists

#### Technological Reticence?

Interestingly, 39 of the 51 items included in the survey were almost never used in practice (practice ratings less than 2 on a 5-point scale). In some cases, this may reflect ethical caution. For example, almost none of the respondents had provided clinical

services, supervision, or consultation via a social networking site, which seems a reasonable choice in light of the potential multiple relationship and breaches of confidentiality that could easily occur. It is somewhat more surprising that almost none of the respondents had ever provided services via Skype—a relatively secure form of videoconferencing. Video communication provides more nonverbal cues than telephone communication, and preliminary evidence suggests that video communication may work quite well in psychotherapy (Day & Schneider, 2002). But change takes time, and it is worth noting that technologies that were relatively new at the time of the McMinn et al. (1999) study (e.g., the Internet, e-mail, and cell phones) were all being used to a greater degree than the newer technologies in our survey, perhaps simply because of familiarity. It is also important to note that this study of independent practitioners may not generalize well to licensed psycholo-

Table 2  
*Areas of Most Ethical Consensus*

Ethics item	Direction	Percent agreement
25. Maintaining a web page that describes your practice.	Ethical	94.8
28. Using computerized test-scoring software.	Ethical	94.5
27. Using computerized test administration software.	Ethical	93.4
19. Storing psychotherapy records on a computer, with password protection.	Ethical	90.1
9. Providing supervision or consultation via telephone (landline).	Ethical	89.0
17. Faxing confidential information to another health care provider.	Ethical	85.4
21. Submitting electronic (paperless) claims to insurance companies.	Ethical	85.2
29. Using computerized test interpretation software.	Ethical	84.6
2. Providing professional services via telephone (landline).	Ethical	82.7
20. Storing psychotherapy records on a computer, without password protection.	Not Ethical	80.4
7. Providing clinical services via a social networking site (e.g., Facebook).	Not Ethical	80.3
51. Participating in online public discussions about psychological issues.	Ethical	78.5
14. Providing supervision or consultation via a social networking site (e.g., Facebook).	Not Ethical	73.8
15. Receiving psychotherapy or assessment training online.	Ethical	71.4
47. Using virtual reality in treating an anxiety disorder and/or phobia.	Ethical	69.8
44. Maintaining a blog online, related to professional psychology.	Ethical	68.4

*Note.* The ethics rating had three options: Yes, No, and Unsure. The Percent agreement is the percentage of respondents who agreed that the practice behavior was ethical or that the practice behavior was unethical. The items listed in Table 3 are those with the highest level of consensus among respondents.

Table 3  
Areas of Most Ethical Uncertainty, Sex Differences, and Sample Differences

Ethics item	Uncertain	Sex diff	Sample diff
41. Allowing a client limited access to a profile on a social networking site.	45.1	6.33* (M)	0.12
50. Providing group psychotherapy via the Internet (e.g., eGetGoing.com).	44.9	0.15	2.23
6. Providing clinical services via instant messaging on a computer.	43.4	3.67	0.07
1. Providing professional services via e-mail.	42.3	0.42	0.67
48. Providing informational updates on Twitter or similar sites.	41.9	0.84	3.55
13. Providing supervision or consultation via instant messaging on a computer.	39.9	3.04	6.03* (P)
4. Providing professional services via videoconferencing (e.g., Skype).	39.9	0.02	0.81
46. Performing an online search to obtain information about a client (e.g., Google).	39.7	1.97	0.25
49. Providing professional advice via online public discussion (e.g., bulletin boards)	39.7	0.01	0.04
35. Discussing assessment results via videoconferencing (e.g., Skype).	39.0	0.33	2.54
12. Providing supervision or consultation via text messaging on a cell phone.	38.4	1.07	2.27
5. Providing clinical services via text messaging on a cell phone.	38.3	5.02* (M)	0.06
18. Sending confidential information via e-mail to another health care provider.	37.3	0.24	0.29
22. Contacting clients about payment or insurance issues via e-mail.	36.5	0.01	1.66
45. Keeping a schedule of therapy appointments with identifying information on a cell phone or data storage device (e.g., BlackBerry, iPhone, iTouch).	36.5	0.02	0.31
38. Administering an assessment via computer videoconferencing (e.g., Skype).	36.3	5.04* (F)	0.09
42. Storing client contact information on a cell phone or data storage device.	35.1	0.24	1.30
40. Allowing a client full access to a profile on a social networking site.	34.7	9.15** (M)	0.32
31. Sending assessment results via e-mail.	33.5	0.19	0.02
8. Providing supervision or consultation via e-mail.	33.2	2.19	0.30
16. Receiving supervision or consultation online.	33.0	0.48	0.12
11. Providing supervision or consultation via videoconferencing (e.g., Skype).	32.3	1.26	1.42
3. Providing professional services via cell phone.	32.2	0.20	0.27
39. Keeping a personal profile on a social networking site (e.g., Facebook).	30.1	1.35	3.25

Note. The ethics rating had three options: Yes, No, and Unsure. Uncertain is the percentage of respondents who endorsed the Unsure option. Sex diff is the  $\chi^2$  values for independence, with one variable being whether the respondent was uncertain or certain (either yes or no) and the other being the sex of the respondent. The (M) annotation denotes males are more uncertain than females. Sample diff is  $\chi^2$  values for independence, with one variable being whether the respondent was uncertain or certain (either yes or no) and the other being the delivery method of the survey (paper or e-mail). The (P) annotation denotes that those taking the paper version were more uncertain on this item.

\* Significant at the  $p < .05$  level. \*\* Significant at the  $p < .01$  level.

gists with other types of employment (e.g., government or medical settings).

### Large Variation Among Technologies

Psychologists believe that technology can be used ethically in clinical work. Over 90% of our respondents agreed that using computerized test-scoring and test administration software is ethical. The majority also agreed that it is ethical to participate in online public discussions about psychological issues (78.5%) and

to receive psychotherapy or assessment training online (71.4%). This is not to say that all technology can be used ethically. Social networking sites, such as Facebook, may provide a useful way to stay in communication with friends and colleagues, but a sizeable majority of licensed psychologists believe it is not ethical to provide clinical services (80.3%) or supervision or consultation (73.8%) via a social networking site. This seems to be a well-reasoned response in light of the risks involved, such as one client meeting another through the website or having clients feeling confused about the nature of

Table 4  
Response Patterns in 1999 and 2009

Item	1999 Practice	2009 Practice	1999 Ethics	2009 Ethics
21. Submitting electronic (paperless) claims to insurance companies. <sup>a</sup>	1.81 (1.39)	2.69 (1.73)	70.1	85.2
24. Advertising psychological services on the Internet. <sup>a</sup>	1.08 (0.43)	1.56 (1.19)	44.7	58.8
27. Using computerized test administration software.	1.89 (1.28)	2.10 (1.35)	86.0	93.4
28. Using computerized test-scoring software.	2.42 (1.49)	2.51 (1.47)	90.6	94.5
29. Using computerized test interpretation software.	2.24 (1.39)	2.27 (1.39)	80.3	84.6
30. Relying on computerized test interpretation software for diagnosis. <sup>a</sup>	1.17 (0.50)	1.29 (0.71)	15.9	20.1
47. Using virtual reality in treating an anxiety disorder and/or phobia. <sup>a</sup>	1.02 (0.20)	1.08 (0.36)	40.0	69.8

Note. Practice ratings are listed as means, with standard deviations in parentheses. Ethics ratings are listed as the percentage who report this behavior as ethical. The 1999 Ethics ratings were done on a 5-point scale, with 3 being "Don't know/not sure." For purposes of comparison, the 1999 ratings were recoded to a 3-point scale similar to what was used in the current study.

<sup>a</sup> The item was worded slightly differently on the 1999 and 2009 questionnaires, although the essence of the content is similar.

the professional relationship when they are accepted as a psychologist's "friend" on Facebook.

### **Uncertainty Persists**

The relatively high percentage of uncertain responses to the issue of ethics on certain items indicates that clarification and training would be useful in determining what is and is not appropriate. Respondents were the most unsure about allowing a client limited access to a profile on a social networking site (45.1%), providing group psychotherapy via the Internet (44.9%), providing clinical services via instant messaging on a computer (43.4%), and providing professional services via e-mail (42.3%). This degree of uncertainty suggests that the acceptability of using these mediums in practice is unclear to many clinicians. Levels of uncertainty may be related to familiarity because many of the items with the greatest ethical consensus (Table 2) also were the most frequently practiced items (Table 1).

The need for training in technology and professional practice is clear, but training itself poses unique challenges. Although the age-practice correlations were modest in this survey, many were statistically significant and they were negative correlations, meaning younger psychologists engaged in the behavior more than older psychologists. Initial evidence suggests that older adults use technology less than younger adults (Czaja et. al, 2006). A 25-year-old doctoral student may be much more familiar with social networking sites and videoconferencing than a 50-year-old clinician who has been in practice for 20 years, making it difficult to determine who should train whom. In general, we expect those who have more professional experience to be better qualified for training those who have less, but in the area of technology, this may not be the case.

What can be done to bridge this gap between technological expertise and clinical expertise? One possibility is to seek out those clinicians who, over time, have actively engaged in both clinical work and cutting edge technology, thereby making them uniquely qualified to contribute to the establishment of ethical guidelines related to the practical use of technology in clinical work. Another possibility is to foster collaborative relationships between established psychologists with ethics expertise and early career psychologists with technology expertise.

### **Training Needs to Adapt**

Although educators in professional psychology programs may not be able to provide definitive answers regarding the use of all emerging technologies, the discourse surrounding these resources is essential to help future psychologists become aware of potential dangers and risks to confidentiality and competent practice. There are a number of issues to be considered, such as the security of stored data on smart phones, the scope of licensure, and the security and confidentiality of services provided via videoconferencing, e-mail, and other web-based services, as well as those provided via cell phone. Technology competencies could ultimately involve both proactive (e.g., using technological resources to promote health and well-being) and protective (e.g., recognizing and avoiding security threats where they exist) dimensions.

Beyond discussing technology in traditional classroom settings, it is also important to recognize that technology is influencing

training itself (see Rosenberg, 2006, for an interesting example of technology use in psychotherapy training). As technology is infused into training, it also prepares future psychologists to anticipate how technology may be used effectively in their future professional work.

In addition to enhanced training in doctoral programs, it seems prudent to promote both proactive and protective competencies via continuing education classes. This would ensure that licensed psychologists maintain at least a minimal level of knowledge and awareness of emerging trends in the area of technology, thereby enabling them to take advantage of the benefits while remaining vigilant and cognizant of the dangers. Workshops could be taught by experts in the field of technology, in partnership with experienced psychologists knowledgeable in the area of ethics.

Perhaps a division of APA could develop a listing of best practices in relation to technology advances. Because divisional initiatives can often be accomplished more nimbly than APA committee work, an online "toolbox" of best practices might become an adaptable and useful resource for APA members.

### **Survey Methodology**

Although indirectly related to the purpose of this study, it is fascinating to note the vast disparity of response rates between U.S. mail (54.7%) and e-mail surveys (12.9%). Both surveys had identical content, and modest financial incentives were included with both, although in different forms. This may be related to subtle differences particular to this study, such as the different ways the financial incentives were offered, but it also raises a question as to how to best do survey research in an age in which electronic surveys seem to be proliferating. In a recent large survey of North American psychotherapists, Cook, Biyanova, Elhai, Schnurr, and Coyne (2010) reported a 13% response rate. As with other successful web-based survey research, they were able to attain a large sample size by sending the survey request to a large number of potential participants. There is certainly a place for web-based research such as this, but if the response rates hover around 10% to 15%, potential response bias is an important consideration.

### **Future Directions**

The ethical issues considered in this study ultimately need to be considered in relation to effectiveness and efficacy data. The outcome of services provided using innovative technologies has received attention in recent years (e.g., Bond, Burr, Wolf, & Feldt, 2010; Mohr, Vella, Hart, Heckman, & Simon, 2008; Preziosa, Grassi, Gaggioli, & Riva, 2009; Ruwaard, Broeksteeg, Schrieken, Emmelkamp, & Lange, 2010), but more research is needed before licensed psychologists can use various technologies with confidence. Is supervision equally useful if offered in person or via Skype? Can psychotherapy be delivered through a technological means in a way that makes it as efficacious as psychotherapy offered face to face? Moreover, might there be individual and group differences? Perhaps younger clients will respond more favorably to technologically based interventions than older clients. Using a social networking website to help a suicidal client may have different implications and ethical risks than using a similar method to work with a behavioral management group for diabetics.

Even as new frontiers of technology research are being explored, it is also important to look repeatedly at issues of ethics in practice. In addition to the response bias problem that plagues virtually all survey research, a limitation of this study was in the item selection itself. It is likely that some of the items may not have been familiar to many of the respondents. The tendency to negatively view things about which little is known may have impacted how certain items were scored. On the other hand, our own lack of knowledge regarding technological advances may have caused us to overlook items that should have been included on the survey. One significant problem is that we conflated supervision and consultation on several of the items. Also, terms such as “professional services,” “supervision,” and “consultation” appeared on the survey without precise definition. Some respondents wrote that they found this troublesome and disorienting. More precise definitions would be helpful in subsequent studies.

Another direction for future research is to observe behavior rather than asking people to provide opinions. Our self-report survey leaves open the possibility that reported activity and views differ somewhat from actual practice. In the interest of producing more applicable results, future researchers could consider moving toward exemplar research. Using this method, researchers could seek out clinicians who are using technology extensively in their practices, find what is working for them, how well it is working, and what unique ethical challenges arise as a result of using technology. In addition, researchers hoping to find out more about the efficacy of using technology in practice should consider seeking out the perspectives of actual clients of clinicians who are using cutting edge technology as part of their work.

The amount of ethics uncertainty about certain technological applications in professional psychology is a matter to be considered in future ethics code revisions. In the meantime, the ethics code provides an effective general structure for decision-making. Martin (2010) posed the question of ethics code revisions in relation to social networking websites to Stephen Behnke, Director of the APA’s Ethics Office. Behnke’s reply provides a useful reminder of the challenge we face as a profession:

“It’s important to think about ethics from a developmental perspective. As our field evolves, new issues emerge and develop. Not all the questions about social media have crystallized yet. We have to make sure that we have a pretty good sense of the right questions and the right issues before we start setting down the rules. Part of that process is exploring where the potential harms to our clients are.

“We are just defining the questions, issues, and risks of harm to the client and we’re going to have to let the process unfold. In the meantime we have to be aware that these technologies are very powerful and far-reaching and bring with them wonderful benefits, but also potential harms” (Martin, 2010, pp. 34–35).

We agree with Behnke’s perspective and hope that this research contributes to the unfolding process by helping identify areas of ethics questions related to technology use in independent practice.

## Conclusion

Psychology has always adapted to cultural needs and will continue to do so. The question is how psychologists will adapt to these changes in terms of training, research, and practice. This study provides a look at independent practitioners’ self-reported

behaviors regarding technology and practice and how they perceive the ethics of using technology in various ways. It appears that independent practitioners are not a technologically adventurous group, which may reflect the deep commitments to ethical practice that have also been an important part of the profession. Still, our firm commitments to ethics will not spare us some degree of confusion regarding which technologies to incorporate into professional practice. At present, most psychologists in independent practice appear to experience a degree of ethical uncertainty about how and whether to use various technologies in their professional work. As we project the current level of uncertainty into a future that will almost certainly involve accelerated change, it will be important for licensed psychologists to adapt training models and professional practice standards while upholding firm commitments to ethical principles.

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## Appendix

### Technology and Practice Questionnaire

*Response Frequencies for Practice and Ethics Items*

Item	Reported practice frequency								Is it ethical?		
	1	2	3	4	5	<i>M</i>	<i>SD</i>	No	?	Yes	
1. Providing professional services via e-mail.	56.9	24.5	13.1	4.8	0.7	1.68	0.93	23.2	42.3	34.6	
2. Providing professional services via telephone (landline).	12.9	30.6	38.1	12.6	5.8	2.68	1.39	2.9	14.4	82.7	
3. Providing professional services via cell phone.	28.4	35.8	24.3	7.5	3.7	2.22	1.06	9.9	32.2	57.9	
4. Providing professional services via videoconferencing (e.g., Skype).	87.5	8.1	3.7	0.7	0.0	1.18	0.51	7.7	39.9	52.6	
5. Providing clinical services via text messaging on a cell phone.	89.9	6.4	2.4	1.4	0.0	1.15	0.51	45.0	38.3	16.7	
6. Providing clinical services via instant messaging on a computer.	96.6	2.4	1.0	0.0	0.0	1.04	0.25	43.0	43.4	13.7	
7. Providing clinical services via a social networking site (e.g., Facebook).	99.7	0.3	0.0	0.0	0.0	1.00	0.06	80.3	17.1	2.6	
8. Providing supervision or consultation via e-mail.	60.9	20.7	14.6	2.4	1.4	1.63	0.91	16.2	33.2	50.6	
9. Providing supervision or consultation via telephone (landline).	29.8	24.4	34.6	8.8	2.4	2.29	1.06	2.2	8.8	89.0	
10. Providing supervision or consultation via cell phone.	43.4	28.5	23.4	4.4	0.3	1.90	0.93	7.3	27.5	65.2	
11. Providing supervision or consultation via videoconferencing (e.g., Skype).	91.5	5.5	2.0	1.0	0.0	1.13	0.46	10.4	32.3	57.2	
12. Providing supervision or consultation via text messaging on a cell phone.	95.2	3.1	1.7	0.0	0.0	1.07	0.31	38.8	38.4	22.8	
13. Providing supervision or consultation via instant messaging on a computer.	97.6	2.4	0.0	0.0	0.0	1.02	0.15	36.5	39.9	23.9	
14. Providing supervision or consultation via a social networking site (e.g., Facebook).	99.7	0.3	0.0	0.0	0.0	1.00	0.06	73.8	23.2	3.0	
15. Receiving psychotherapy or assessment training online.	52.5	22.9	18.8	5.1	1.0	1.80	0.99	9.7	19.0	71.4	
16. Receiving supervision or consultation online.	72.2	14.4	11.3	1.4	0.7	1.44	0.80	9.4	33.0	57.7	
17. Faxing confidential information to another health care provider.	10.7	15.8	36.1	24.7	12.7	3.13	1.15	2.2	12.4	85.4	
18. Sending confidential information via e-mail to another health care provider.	52.7	23.8	17.0	4.8	1.7	1.79	1.00	17.9	37.3	44.8	
19. Storing psychotherapy records on a computer, with password protection.	39.0	9.8	9.2	14.9	27.1	2.81	1.69	2.6	7.4	90.1	
20. Storing psychotherapy records on a computer, without password protection.	89.3	4.5	2.7	1.7	1.7	1.22	0.73	80.4	12.5	7.0	
21. Submitting electronic (paperless) claims to insurance companies.	45.6	5.8	10.5	10.5	27.6	2.69	1.73	3.3	11.4	85.2	
22. Contacting clients about payment or insurance issues via e-mail.	69.0	19.0	9.5	1.7	.7	1.46	0.79	21.4	36.5	42.1	
23. Scheduling appointments with clients via e-mail.	40.0	22.7	24.7	8.8	3.7	2.14	1.15	8.1	24.9	67.0	
24. Advertising psychological services on the Internet (e.g., Craigslist, Yahoo!).	79.3	2.7	7.5	4.1	6.4	1.56	1.19	12.5	28.7	58.8	
25. Maintaining a web page that describes your practice.	57.3	1.7	3.1	3.7	34.2	2.56	1.88	1.8	3.3	94.8	
26. Keeping only electronic copies of client records (i.e., no paper copies).	80.7	4.1	4.7	5.4	5.1	1.50	1.13	12.4	28.3	59.5	
27. Using computerized test administration software.	52.6	11.6	16.0	12.6	7.2	2.10	1.35	1.1	5.5	93.4	
28. Using computerized test-scoring software.	40.3	10.6	19.8	16.4	13.0	2.51	1.47	1.1	4.4	94.5	

(Appendix continues)

Appendix (continued)

Item	Reported practice frequency							Is it ethical?		
	1	2	3	4	5	<i>M</i>	<i>SD</i>	No	?	Yes
29. Using computerized test interpretation software.	46.0	12.4	19.6	12.7	9.3	2.27	1.39	4.1	11.3	84.6
30. Relying on computerized test interpretation software for diagnosis.	82.4	8.8	6.8	1.4	0.7	1.29	0.71	57.1	22.8	20.1
31. Sending assessment results via e-mail.	89.9	6.8	2.0	0.7	0.7	1.16	0.54	46.3	33.5	20.2
32. Discussing assessment results via instant messaging or text messaging.	99.0	1.0	0.0	0.0	0.0	1.01	0.10	66.8	26.9	6.3
33. Discussing assessment results via cell phone.	73.6	16.1	8.2	1.4	0.7	1.39	0.76	31.9	24.8	43.3
34. Discussing assessment results via telephone (landline).	46.6	23.3	24.7	4.8	0.7	1.90	0.98	13.2	15.8	70.7
35. Discussing assessment results via videoconferencing (e.g., Skype).	97.3	2.0	0.7	0.0	0.0	1.03	0.22	19.5	39.0	41.6
36. Administering an assessment via e-mail.	99.3	0.7	0.0	0.0	0.0	1.01	0.08	69.5	24.2	6.3
37. Administering an assessment via cell phone or telephone.	97.9	1.4	0.7	0.0	0.0	1.03	0.20	66.3	25.2	8.5
38. Administering an assessment via computer videoconferencing (e.g., Skype).	98.3	1.4	0.3	0.0	0.0	1.02	0.21	50.0	36.3	13.7
39. Keeping a personal profile on a social networking site (e.g., Facebook).	71.5	3.8	5.5	6.9	12.4	1.85	1.46	17.1	30.1	52.8
40. Allowing a client full access to a profile on a social networking site.	96.9	1.4	1.0	0.7	0.0	1.05	0.34	60.0	34.7	5.3
41. Allowing a client limited access to a profile on a social networking site.	95.8	2.4	1.4	0.3	0.0	1.06	0.33	44.4	45.1	10.5
42. Storing client contact information on a cell phone or data storage device (e.g., BlackBerry, iPhone, iTouch).	59.5	6.9	7.9	8.2	17.5	2.18	1.60	25.8	35.1	39.1
43. Maintaining a personal blog online, unrelated to professional psychology.	94.2	2.1	2.7	0.3	0.7	1.11	0.51	6.3	29.5	64.2
44. Maintaining a blog online, related to professional psychology.	92.4	3.1	2.1	0.7	1.7	1.16	0.65	6.0	25.6	68.4
45. Keeping a schedule of therapy appointments with identifying information on a cell phone or data storage device (e.g., BlackBerry, iPhone, iTouch).	81.9	2.0	2.0	1.7	12.3	1.60	1.37	31.0	36.5	32.5
46. Performing an online search to obtain information about a client (e.g., Google).	63.5	23.2	11.6	1.0	0.7	1.52	0.79	12.9	39.7	47.4
47. Using virtual reality in treating an anxiety disorder and/or phobia.	94.8	3.1	1.7	0.3	0.0	1.08	0.36	4.5	25.7	69.8
48. Providing informational updates on Twitter or similar sites.	94.9	2.1	1.4	0.7	1.0	1.11	0.54	23.0	41.9	35.2
49. Providing professional advice via online public discussion (e.g., bulletin boards)	94.2	2.1	2.7	1.0	0.0	1.11	0.46	38.6	39.7	21.7
50. Providing group psychotherapy via the Internet (e.g., eGetGoing.com).	100.0	0.0	0.0	0.0	0.0	1.00	0.00	48.2	44.9	7.0
51. Participating in online public discussions about psychological issues.	62.4	15.2	15.5	3.8	3.1	1.70	1.06	5.1	16.4	78.5

Note. 1 = Never; 2 = Rarely; 3 = Sometimes; 4 = Fairly Often; 5 = Very Often, and refers to the frequency of the practice. Yes, ?, and No refer to whether or not the practice was considered ethical by the respondent.