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LEARNING OBJECTIVES

- Identify three ways researchers can use online data collection.
- Explain the ethical responsibilities of the online researcher.
- Demonstrate how to place a survey and experiment online.
- Identify ways to recruit online participants.
- Explain what *Mechanical Turk* is.
- Describe how special populations can be studied online.
- Identify advantages and disadvantages of online data collection.

Do you remember your dreams? Ever dream of flying? Researchers have long been interested in dream content and have generally found that some dream themes, such as flying, are relatively common. Furthermore, these themes have been found to be consistent across various sample populations (see for example, Schredl, Ciric, Götz, & Wittman, 2004). Mathes, Schredl, and Göritz (2014) decided to take

this investigation online, to see whether the typical dream themes found by earlier researchers would be reported by a large sample asked about the content of their most recent dreams.

First Mathes et al. found a large percentage of dreams reported as happening very recently, within the last week (see Table 13.1). The dream themes were generally consistent with what others had



FIGURE 13.1 Do you remember your dreams? Mathes et al. (2014) found common themes in dream content when they asked a sample of online participants to report on their recent dreams.

Table 13.1 Time interval between study participants and dream occurrence as reported by Mathes, Schredl, & Göritz (2014).

Last recent dream of ($N = 2,828$)	Percent
Last week	79.00
Last month	15.31
Last year	5.06
> 1 year	0.64

Source: Mathes, J., Schredl, M., & Göritz, A. S., (2014). Frequency of typical dream themes in most recent dreams: An online study. *Dreaming*, 24, 57–66. doi:<http://dx.doi.org/10.1037/a0035857>.

found. The 10 most common themes from Mathes et al.'s study are shown in Table 13.2. How many of these have you experienced?

Mathes et al. are just one of many research teams that have decided to collect data online. The practice is becoming increasingly common. Skitka and Sargis (2006) found that only about 2% of articles in a 2003/2004 sample of American Psychological Association journals used the Internet to collect data. A few years later, Sargis, Skitka, and McKeever (2013) found that an average of 11% of articles in a

Table 13.2 Top 10 typical dream themes as reported by Mathes, Schredl, & Göritz (2014).

Dream themes	Ranking
Flying or soaring thorough the air	1
Trying something again and again	2
Being chased or pursued	3
Sexual experiences	4
School, teachers, studying	5
Arriving too late	6
A person now dead being alive	7
A person now alive being dead	8
Being physically attacked	9
Swimming	10

Source: Mathes, J., Schredl, M., & Göritz, A. S. (2014). Frequency of typical dream themes in most recent dreams: An online study. *Dreaming*, 24, 57–66. doi:<http://dx.doi.org/10.1037/a0035857>.

2009/2010 sample of journals used Internet methodology. In fact, Internet research was present in 16% of the 2009/2010 articles in the top-tier social psychology journal *Journal of Personality and Social Psychology*. What was considered a “new methodological frontier” in 2005 (Skitka & Sargis, 2005, p. 1) is rapidly becoming mainstream.

In this chapter we'll look at examples of online research, the ethics of using the Internet for data collection, and the advantages and disadvantages of collecting data online. We will also discuss how to prepare a survey and look at an experiment for online data collection.

How Do Researchers Use Online Data Collection?

As suggested above, many researchers now use online data collection, and they do so in a variety of ways. Some have published work that focused on

comparing the viability of this methodology to that of traditional, offline research. Others have explored new questions, perhaps attracted by easy access to potentially large and relatively diverse samples. Still others have chosen to use online data collection to examine how we interact with technology. We'll discuss each of these purposes in turn.

Perhaps because online research is still relatively new, many researchers have been studying the viability of this technique. How do the results of online testing compare to those of traditional offline research? Are the samples more diverse, or less? Mathes et al. had an assessment of viability as one of their goals. Let's take a look at another example.

Boynton and Smart Richman (2014) asked their online respondents to keep a daily diary of their alcohol use, an often-used technique for assessing alcohol consumption. See Figure 13.2 for an example of daily alcohol consumption measures comparable to that used by Boynton and Smart Richman.

Boynton and Smart Richman found that their final sample was indeed more diverse (older, richer, and more ethnically diverse) than a typical college student sample, yet it yielded results generally comparable to those of offline investigations of college students. For example, beer was the most common type of alcohol consumed by this US sample, and more drinking took place on the weekends.

In some cases researchers choose to test online for reasons other than to compare online and offline results. Perhaps they are enticed by the possibility of increasing the diversity of their sample, or by the relative ease with which study participants can be obtained. Let's look at an example. Hefner (2016) wondered why people watch wedding reality TV shows such as "Say Yes to the Dress," and whether their tendencies to watch had any relationship to their views about romance. In one of her studies, Hefner recruited participants to fill out an online questionnaire by advertising on Twitter, Facebook,

LinkedIn, and Craigslist. She asked respondents how much wedding reality TV they watched and why, as well as questions about their romantic beliefs. She found that viewing wedding reality TV was associated with the belief that love conquers all. Earlier researchers had not considered whether an association existed between viewing wedding reality shows and romantic beliefs, so Hefner didn't compare her results to any others.

As the use of technology increases in our lives, it is reasonable to expect that researchers will also design studies to explore its impact, and at least some of this research will take place online. For example, think about smartphones. As of 2015, 64% of people in the United States owned a smartphone, and almost 20% of them relied exclusively on their phone to go online (Smith, 2015). Researchers have considered how smartphones have changed our lives. Some have been interested in how much people text, and whether the frequency changes with, for example, age (Lenhart, 2015). Some have looked more into *why* people text. Let's briefly go over an example of this kind of study.

Harrison and Gilmore (2012) were interested in when and why college students text. So they created an online survey presenting 29 social situations and asked a sample of students at their university to indicate whether they texted in such situations. The results were fascinating (see Table 13.3). For example, almost 30% said they have texted while in the shower. Approximately 33% have texted during a religious service, and 13% have texted while having sex. The "why" results were also intriguing. For example, almost 26% used a text to break up with someone, and almost 46% texted someone they were romantically interested in while they were on a date with someone else. Texting has definitely infiltrated many aspects of the lives of these college students.

Another approach researchers have been taking is to conduct an analysis of the content of texts,

Please enter the approximate number of each type of standard alcoholic drinks you consumed:

LAST NIGHT
(from 5 pm to 6 am)
&
TODAY
(from 6 am to 5 pm)

For example, if you drank two 12 oz cans of Bud Lite last night around 9 pm, then you would enter a 2 in the top left box.

You can use the 'Tab' button to quickly move from box to box.
Please enter 0 for each listed beverage that you did not consume.









	# of standard drinks consumed LAST NIGHT Between 5 pm to 6 am	# of standard drinks consumed TODAY Between 5 pm to 6 am		# of standard drinks consumed LAST NIGHT Between 5 pm to 6 am	# of standard drinks consumed TODAY Between 5 pm to 6 am
12 oz beer alc/vol less than 6% 	<input type="text"/>	<input type="text"/>	Hard liquor 1 shot 	<input type="text"/>	<input type="text"/>
12 oz beer alc/vol 6% or greater 	<input type="text"/>	<input type="text"/>	12 oz malt liquor 	<input type="text"/>	<input type="text"/>
4 oz wine or champagne 	<input type="text"/>	<input type="text"/>	1 mixed drink 	<input type="text"/>	<input type="text"/>
12 oz alcopop (for example wine cooler) 	<input type="text"/>	<input type="text"/>	Other alcohol beverages 	<input type="text"/>	<input type="text"/>

FIGURE 13.2 Boynton and Smart Richman's (2014) daily alcohol consumption measures.

Table 13.3 Percentage of respondents engaging in text messaging in various situations.

Have you used text messaging ...	% ever engaging in behavior
Romance	
To flirt with someone?	80.00
To ask someone out?	47.00
To be romantic?	86.10
To tell someone you love him or her?	88.10
Staying connected	
To report to your family where/how you are?	91.10
To report to your significant other where/how you are?	90.00
To check on your family?	91.00
Escaping the present	
While you were at work and supposed to be working?	84.00
While drunk?	73.70
While you were going to the bathroom?	85.10
During a movie/show/sporting event you paid to see?	84.00
While you were in the shower?	29.70
From an airplane during flight?	21.80
During a religious service?	32.60
While having sex?	13.00
While eating?	92.10
Social breaches	
While speaking to someone else on the phone?	77.20
While speaking to someone else in person?	93.10
While on a date?	71.30
While service personnel are trying to wait on you (for example in a restaurant)?	91.00
To one friend while you were hanging out with another?	91.10
To talk to someone you're romantically interested in while on a date with someone else?	45.90
To break up with someone?	25.70
To cheat on your significant other?	19.00
Maleficence	
To fight with someone?	73.30
After someone told you to STOP texting them?	27.70
To insult someone?	53.00
Sexting	
That contains sexually explicit material?	65.30
To describe your sexual intent/actions ("sexting") to someone?	57.40

Source: Harrison, M. A. & Gilmore, A. L. (2012). U txt when? College students' social contexts of text messaging. *Social Science Journal*, 49, 513–518. doi:<http://dx.doi.org/10.1016/j.soscij.2012.05.003>

Facebook posts, tweets, and so on. There are many ways to gather content to analyze for a study like this. For example, to analyze tweets from Twitter, you can get a 3-day trial subscription to *Tweetarchivist* (www.tweetarchivist.com/) or pay for a longer one. Tell *Tweetarchivist* what term(s) you wish to search for, and the program will gather relevant tweets for later analysis (see Lachlan, Spence, & Lin, 2014 for an example).

Some researchers have conducted analyses of Facebook content. For example, Beullens and Schepers (2013) were interested in the way alcohol use was portrayed on Facebook in a sample of students at their university in Belgium. How did they get access to Facebook profiles? One of the study authors created a Facebook profile and sent a friend request to students at the university that included a message about recruiting study participants. When they had access to the desired number of Facebook profiles, the researchers analyzed the photos and text contained in these profiles, looking for content that indicated alcohol use.

They found, for example, that most of the Facebook profiles contained at least one photo that referenced alcohol use, while 40% had at least one Facebook post referencing alcohol. However, when they considered the overall number of photos and status updates, the percentage depicting alcohol use was rather small. Only 6.5% of the photos showed alcohol being used, and only about 3% of the total status updates referred to alcohol. In a majority of the cases, the references to alcohol, both in photos and in text, were positive, and friends' reactions to these posts were also quite positive.

Beullens and Schepers note that the portrayal of alcohol use in the Facebook profiles of their participants was far more prevalent than what other researchers have generally found. Was the reason that these researchers were looking at Belgians' profiles while much of the earlier research considered

Facebook profiles in the United States? Was it that Beullens and Schepers' sampling technique did not generate a representative sample? Only future research can answer these questions.

Ethics of Online Research

Many of the same ethical considerations we discussed in Chapter 3 are also relevant for online research; you are still responsible for abiding by the APA Ethics Code (APA, 2002). You still have to submit your research plans to the IRB. The APA Ethics Code generally states that informed consent may not be needed if the study is anonymous and does not cause the participants any harm. But since the Code does not cover online research directly, you should err on the side of caution and get your participants' informed consent. Your participants can indicate their consent by clicking a button on an online informed consent form. See Figure 13.3 for an example of one of the informed consent forms I used in an online research study.

In addition to obtaining informed consent, you still need to protect your study participants from harm, use deception only when deemed absolutely necessary, and in most cases debrief. When would you *not* debrief? The APA Ethics Code states that there may be cases in which the risk of harm to participants is minimal and in which "scientific or humane values justify withholding" a debriefing (APA, 2002, p. 1070). Again, the Code was written with offline participants in mind, though we can extrapolate its concepts to online research. I recommend debriefing whenever it is feasible (your participants can read an explanation of the purpose of your research once they have finished the study); however, ultimately it is up to the researcher(s) and the IRB to decide how to handle these ethical issues.

Doing research online can bring special challenges (see Bohannon, 2016; Emery, 2014). The researcher is not there to answer questions for

Informed Consent

You are being invited to participate in research being conducted by Dr. Wendy Heath of Rider University.

Purpose of the Study:

This study is designed to explore people's perceptions of a defendant.

Risks Involved in the Study:

There are no known risks involved in participating in this research. This study received approval from the Rider University Human Subjects Committee in June 2016. The contact information for this Committee is as follows: Chair of the Human Subjects Committee, Rider University Psychology Department, Lawrenceville, NJ 08648.

Benefits Involved in the Study:

This brief questionnaire will help us understand how individual jurors view someone who is on trial.

What Will Be Asked of You:

You will be asked to read a brief scenario and to answer a series of questions. Overall, participation in this study should take no more than ten minutes. You will not be contacted for any reason, unless you request it.

Your Rights as a Participant:

Your participation is completely voluntary, and you may choose to end the study at any time. If you have any questions or concerns you may contact:

Dr. Wendy Heath
Rider University
Psychology Department
2083 Lawrenceville Road
Lawrenceville, NJ 08648
heath@rider.edu

Confidentiality and Anonymity:

Your identity remains completely anonymous. Your responses will never be matched to your identity, and no one will know how you personally chose to answer a question.

If you have read the above statement and agree to continue, then click on the "Continue to Next Page" button below. If you would rather not participate, then close the web page.

FIGURE 13.3 Sample informed consent form for online research.

online participants, either during the study or later at the debriefing. The researcher should, of course, provide his or her contact information during the informed consent process, but it is up to the participants to reach out and make that contact if they have any questions or comments. You may choose to encourage participants to make a note of the researcher's contact information in case it is needed.

Another possible concern for those doing online research is the obligation to keep participants'

identification confidential. One way to lessen the risk to your participants when you are collecting data online is not to ask for identifying information like names (Kraut et al., 2004).

**Online Research: Surveys
and Experiments**

As you saw above, researchers are using the Internet to collect data in a variety of ways and on a variety

of topics. In this section, I'll talk about creating an online survey and an online experiment and provide published examples of each.

Creating an Online Survey

There are many ways to create an online survey. I'll talk first about how to create or modify a survey for administration online using *SurveyMonkey*, and then I'll give an example of an online survey created with *SurveyMonkey*.

SurveyMonkey is easily available (www.surveymonkey.com). The free basic version allows you to create an unlimited number of surveys, each with up to 10 questions and up to 100 responses (you can upgrade to accommodate more questions/responses for a fee). There are certainly other online survey builders beyond *SurveyMonkey*; see www.surveygizmo.com and www.questionpro.com, for example. Many follow the same general procedures.

Before you can create a survey you need to sign up for a *SurveyMonkey* account. For a free account, click "Sign Up Free" on the *SurveyMonkey* home page. You'll have to choose a username and a password and provide your email address. Once you have signed up,

answer the brief questions that follow. Then choose "Create Survey," and click "Start from Scratch." Enter a name for your survey, and then click "Create Survey." This will bring you to a new page.

Let's now talk about preparing a survey for online use. We've already discussed how to write questions for a survey (see Chapter 7). Now we'll discuss the mechanics of putting those questions into an online survey builder. The first thing you'll likely want to put in your survey is an informed consent form. To do this, click on the down arrow next to the "New Question" button, select "Text," and then enter your informed consent form information (see Figure 13.3 for a sample form). When you are done entering this information, click on "Save."

Now we'll start entering questions. As you'll see in *SurveyMonkey*, there are various response formats you can use in online research. Let's start by going back to the down arrow next to the "New Question" button and choose "multiple choice." This is a very common question format; some survey builders call it a "radio button" format. It allows respondents to choose one or sometimes multiple responses from a series of options.

The screenshot shows the SurveyMonkey question editor for a multiple-choice question. At the top, there's a dropdown menu set to "Multiple Choice" and a checkbox for "Show Suggested Questions". A rich text editor toolbar is visible. The question text is "Q4: Enter your question". Below this, under the "Answer Choices" section, there are three rows, each with a radio button, a text input field containing "Enter an answer choice", and green plus and red minus icons. An "Add Answers in Bulk" button is to the right. At the bottom, a checkbox is labeled "Allow more than one answer to this question (use checkboxes)".

FIGURE 13.4 A common multiple-choice format in *SurveyMonkey*.

Multiple Choice

Q1: How would you rate the food at your university?

Answer Choices

Add Answers in Bulk

Not at all good

Slightly good

Moderately good

Quite good

Extremely good

Allow more than one answer to this question (use checkboxes).

FIGURE 13.5 Filling in a blank question page in SurveyMonkey.

1. How would you rate the food at your university?

- ☐ Not at all good
- ☐ Slightly good
- ☐ Moderately good
- ☐ Quite good
- ☐ Extremely good

FIGURE 13.6 This question is ready for respondents!

For example, in Figure 13.4, you can see what a vertical multiple-choice question looks like in SurveyMonkey before you insert your desired information.

You'll see that everything in SurveyMonkey is very easy to modify. To create a question and provide answer choices, just insert the information in the available spaces as shown in Figure 13.5 and click "Save."

This question will ultimately look like that shown in Figure 13.6.

It is also possible to place multiple-choice items horizontally on a page (see Figure 13.7). SurveyMonkey calls this type of question a "matrix/rating scale" question and recommends it when you want to use the same rating scale for multiple questions. Whether you choose vertical or horizontal placement, it's a good idea to label each answer.

Drop-down menus (see Figure 13.8) are often used to record demographic information such as age or country of residence. As SurveyMonkey notes, drop-down menus are useful when you want to save space in a survey. However, they have been found to have higher non-response rates than questions using radio buttons (Healey, 2007).

You can also collect data using an open-ended response format. As we discussed in Chapter 7, in an open-ended survey question, respondents do not have response options to choose from; instead they answer by writing their own response in a "single

2. How would you rate each meal at your university?

	Not at all good	Slightly good	Moderately good	Quite good	Extremely good
Breakfast	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lunch	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dinner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

FIGURE 13.7 A horizontal or matrix/rating scale question in SurveyMonkey.

3. What is your age?



FIGURE 13.8 A sample drop-down menu in *SurveyMonkey*.

4. What is your favorite food item in your university cafeteria?



FIGURE 13.9 An open-ended survey question in *SurveyMonkey*.

text box” (see Figure 13.9). You can choose to limit the length of the response to only a few characters or allow for a much longer essay-like response.

When you have finished your last question, use the “Text” option to provide a debriefing statement. Then click “Done.” Once you have completed preparing your survey, click “Preview & Test” so you can see what it will look like to your respondents. Then you should pilot the survey (as we discussed in Chapter 1) by doing a few practice sessions to make sure your participants will easily understand all the questions. In other words, give the survey to a few people you can question afterward. Then it’s time to recruit participants. You have some choices here. *SurveyMonkey* will assign your survey a link and you can email this link to prospective participants. Alternatively, you can put this link on a blog or website or add it to a Facebook, LinkedIn, or Twitter page.

Once you have finished collecting your data, *SurveyMonkey*’s basic plan allows you to view the first 100 responses for each of your surveys. These data can be viewed individually or in summary form so you can easily see how people overall responded to your questions. Seeing a summary of 100 responses might be all that you need. The basic

SurveyMonkey plan will not allow you to export your data for further analysis (an upgraded plan will). However, since you can view your data, you can transcribe it onto a data sheet and then input the data into a statistical program for further analysis (details regarding how to analyze the data are beyond the scope of this text).

An Online Survey: A Published Example

Let’s now take a look at an example of a research survey that was used to collect data online. For the sake of consistency, the following example utilized *SurveyMonkey*.

But first, I have a confession. I am one of those people who cannot go a day without checking Facebook. I know I’m not alone. According to Facebook, as of July 2015, more than 1.13 billion people were daily Facebook users (Facebook reports second quarter 2016 results, 2016).

Park and Lee (2014) wanted to know how students at their college felt about Facebook. They used a survey to assess college students’ motivations for using Facebook and how this use related to their feelings about campus life. To assess this information, Park and Lee used multiple-choice questions, asking students to choose their level of agreement on a 7-point scale (options ranged from “strongly disagree” to “strongly agree”) with statements such as “I feel out of touch when I haven’t logged onto Facebook for a while” (p. 608).

Park and Lee wanted to know why and how much students on their campus used Facebook, so they selected a random sample of students from their student directory and sent them a link to their *SurveyMonkey* survey. Almost 20% of these students answered their survey (since so many did not respond, a non-response bias may be a concern here). What did Park and Lee find? The students were generally avid Facebook users, spending an average

of over 7 hours per week on the site. Many found it enjoyable as a form of entertainment, and a means of maintaining relationships (“I am using Facebook in order to communicate with friends and family”) and impression management (“I want other users in Facebook to perceive me as likable,” p. 608). On the other hand, the students were generally not using Facebook to stay aware of campus activities, so this motivation did not directly contribute to their satisfaction with campus life. Consider using an online survey to see whether and why students on your campus use Facebook (or Twitter, or SnapChat, or Instagram ...). See the Suggested Activities section for more about this idea.

Creating an Online Experiment

When we conduct an experiment, as you know, we manipulate one or more independent variables and observe the effects of that manipulation on a response measure called the dependent variable. If we are doing a between-subjects experiment, we want to randomly assign participants to different groups. If we are doing a within-subjects experiment, we want to randomly determine the order in which the participants receive the stimuli. Either way, randomization will be needed, so how do we do that online? Unfortunately, the basic version of *SurveyMonkey* is not capable of randomization, but if you upgrade your account, you can use it for this purpose. Because I want to show you how to randomize for free, we’ll talk about a different survey building tool this time.

Qualtrics is a survey builder like *SurveyMonkey*, but its free version has the capability of randomization. In fact, *Qualtrics*’ free version provides access to many of its features, but it allows you to have only one active survey with 100 responses (as opposed to *SurveyMonkey*’s unlimited number of surveys). Still it is a popular choice. In a recent survey of researchers, a majority of the respondents indicated that

they use *Qualtrics* for their online surveys (Gureckis et al., 2016).

Urbaniak and Kilmann’s (2003) experimentation on the “nice guy paradox” is my inspiration for the following experiment (p. 413). The nice guy paradox is the idea that “although women often portray themselves as wanting to date kind, sensitive, and emotionally expressive men ... when actually presented with a choice between such a ‘nice guy’ and an unkind, insensitive, emotionally closed, ‘macho man’ or ‘jerk,’ they invariably reject the nice guy in favor of his more macho competitor” (p. 413). Urbaniak and Kilmann decided to determine whether they could find evidence of this stereotype in the lab (spoiler alert: they generally didn’t). Let’s walk through how to set up a variation of Urbaniak and Kilmann’s experiment as if we were planning to put the experiment online.

This experiment will have one independent variable (level of dating partner’s niceness), and that variable will have two levels (high, low); participants will be randomly assigned to conditions. That’s the experimental design. Now let’s talk about how to set it up.

First you need to register at the *Qualtrics* website; go to www.Qualtrics.com and register for a free

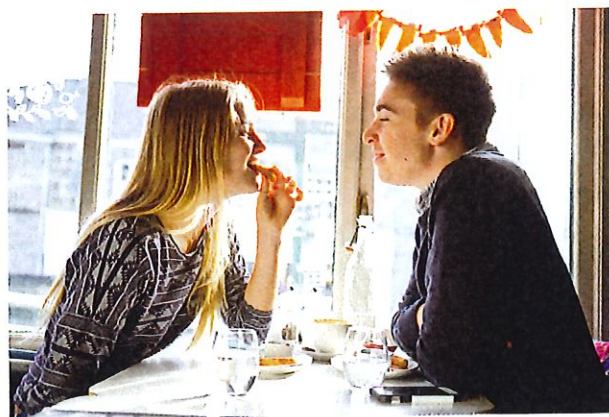


FIGURE 13.10 Do women prefer to date a nice guy or a jerk? Urbaniak and Kilmann (2003) investigated the ‘nice guy paradox.’”

account. Once you have signed up for the account and verified your email address, you can login. After you login, click "Create Project," choose "New Blank Project," then name your project. Then click "Create Project" again. Then you have choices. You can work from an existing survey or from *Qualtrics*' library of survey questions. Since we don't have our own existing survey in *Qualtrics*, we can either create a survey from scratch (like *SurveyMonkey*, *Qualtrics* has many question formats to choose from) or use questions from the *Qualtrics* library. I'm going to do a little of both. Let's go through the following steps:

- Enter the *Qualtrics* survey library by clicking the "Import Questions From" icon.
- Select "*Qualtrics* Library" and then "Survey Library."
- Choose "Higher Education" and then "Informed Consent."
- Click the informed consent text (on the left) and then click "Import 1 Question."

This leads you to a new page with an informed consent form on it. In a moment I'm going to change this informed consent form to reflect the experiment I'm planning, and then I'll be ready to add more information. But first I want to name the section I'm working on; *Qualtrics* does this by allowing you to create "blocks."

Blocks will come in handy later when we need to incorporate random assignment into our *Qualtrics* plan. What are blocks? Well, you can think of blocks thematically. Pages that can be thought of as "belonging together" can generally be placed in one block. So first I'll work on an "informed consent" block. On the upper left of the informed consent form, you'll see a box in which you can enter the words "Informed Consent Block." Now you're ready to make the changes in the informed consent form. Changing the informed consent form is very easy in *Qualtrics* because everything is point and click. For

example, I want to change the introduction to reflect that "The purpose of this study is to collect information regarding women's views of dating. Only women who are 18 years of age or older can participate." Make the other changes to the form as needed (look back at Figure 13.3 for a sample informed consent form).

After the consent form, we need a page break. Click "Add Page Break" on the right-hand side of the screen. Now I'm ready to create a new block. I will click "Add Block" at the bottom of the screen. Click "Block 1" to change the name of this block. Since the next thing participants will see is the instructions, I'll call this next block "Instruction Block."

I will be providing a variation of the instructions given by Urbaniak and Kilmann. I click on the pull-down arrow on the "Create a New Question" button in this Instruction Block and then click the "Descriptive Text" option. I will click in this space and type the following:

On the following page, you will be provided with a scenario in which a woman named Susan is participating in a dating game show. Susan will be presented with the opportunity to date one of the two male contestants. She must choose between them based on their answers to her question. Please read the information provided and answer all the questions that follow.

Now it's time to put in the experimental stimuli. This information is very similar to one of the exchanges used by Urbaniak and Kilmann (p. 416) except, for simplicity sake, my version has only two levels of "niceness" instead of three. I'm going to break my experimental stimuli into several blocks because this will help me when it's time to indicate which conditions should be randomly distributed. I start by clicking "Add Block" on the bottom of the screen. I name this block: "Scenario Block 1." I click on the "Create a New Question" pull-down menu in this

block and choose "Descriptive Text." Then I write the following:

Susan: "Okay, Bachelor #1: What is your definition of a 'Real Man?' And are you one yourself?"

That's all I want in this first scenario block. All my participants will see this information immediately after the instructions. Now I want to create my first block of information about Todd. I will ultimately have two blocks of information pertaining to Todd (nice guy/jerk), and participants will each see only one of these blocks. So I click "Add Block" on the bottom of the screen, name it "Todd 1," and then click on the "Create a New Question" pull-down menu in this block and choose "Descriptive Text." I'll then put the following text in this block.

TODD: "A real man is someone who is in touch with his feelings and those of his partner. Someone who is kind and attentive and doesn't go for all that macho stuff. He's also great in the bedroom and puts his partner's pleasure first. I'd definitely say I'm a real man."

The information above describes a Todd who is a nice guy. But I need my comparison Todd, the jerk. So I click "Add Block," and call it "Todd 2." Then I click on the "Create a New Question" pull-down menu and choose "Descriptive Text." Then I enter the following text in this Todd 2 block.

TODD: "A real man knows what he wants and he knows how to get it. Someone who knows who he is but keeps other people guessing and on their toes – he doesn't go in for all that touchy-feely stuff. He's also great in the bedroom and can tell his partner what he likes. I'd definitively say I'm a real man."

So now I have information about both Todds, the nice guy and the jerk. But I still need to give

participants another bachelor to choose from, someone to compare to Todd. So I click "Add Block" on the bottom of the screen, call it "Scenario Block 2," click on the "Create a New Question" pull-down menu, and choose "Descriptive Text" and enter the following text.

SUSAN: "Bachelor #2, same question."

MICHAEL: "A real man is relaxed. He doesn't let the world get him down. He's confident, solid, and keeps a positive attitude at all times. He's also a great kisser – and I'm definitely one of those!"

I also want to include my dependent variables in this experiment, and I will put them all in the same "dependent variable" block. So I click "Add Block" on the bottom of the screen, call it "Dependent Variable Block" and add in my questions to this block, one at a time. First I want to ask demographic questions. I have decided to use a text entry question to ask respondents what gender they are (I want to use this to double-check that only females have responded). So I will click the "Create a New Question" pull-down menu and choose "Text Entry." I will replace "Click to write the question text" with the words "What is your gender?" Then I will go through the same procedure to create a "text entry" question to ask for their age.

The next question I want to ask is: "Should Susan choose to date Todd or Michael?" The two response options will be Todd and Michael. To do this I will click on the "Create a New Question" pull-down menu and choose "Multiple Choice." I will click in the appropriate spaces to fill in this information. Since I only want two response options for this question, I will click on the third response option and use the pull-down menu to choose "remove choice." Then I want to ask: "Which of the men would you choose to date?" So I choose the "Multiple Choice" question again and fill in the information I need.

Again, the response options will be Todd or Michael so I will delete the third response option.

I have 6 more questions to include, and I want each to be created with 5-point scales. Since *Qualtrics* automatically has placeholders for 3 answer options, I need to add 2 more response options for each question. You can add response options for each question by increasing the number of answer choices on the right-hand side of the screen. These are the questions I want:

- How desirable would Todd be as a marriage partner? (1 = not at all desirable, 2 = a little desirable, 3 = somewhat desirable, 4 = very desirable, 5 = extremely desirable)
- How desirable would Michael be as a marriage partner? (1 = not at all desirable, 2 = a little desirable, 3 = somewhat desirable, 4 = very desirable, 5 = extremely desirable)
- How desirable would Todd be as a one-night-stand? (1 = not at all desirable, 2 = a little desirable, 3 = somewhat desirable, 4 = very desirable, 5 = extremely desirable)
- How desirable would Michael be as a one-night-stand? (1 = not at all desirable, 2 = a little desirable, 3 = somewhat desirable, 4 = very desirable, 5 = extremely desirable)
- How nice is Todd? (1 = not at all nice, 2 = a little nice, 3 = somewhat nice, 4 = very nice, 5 = extremely nice)
- How nice is Michael? (1 = not at all nice, 2 = a little nice, 3 = somewhat nice, 4 = very nice, 5 = extremely nice). (These last two questions are manipulation checks – see Chapter 8).

When you are done putting in your questions, put in a page break by choosing a “page break” option on the right-hand side of the page. The next block I want to include is a debriefing block. Choose “Add Block” on the bottom of the screen and name it “Debriefing Block.” Click the “Create a New

Question” pull-down menu and choose “Descriptive Text.” Place the following text in this block:

The purpose of this study was to determine whether participants would make choices in line with the “nice guy paradox” and reject the nice guy in favor of his more macho competitor. If you have any questions please contact Dr. Wendy Heath at heath@rider.edu.

See Figure 13.11 for an overview of the study.

If you now click on “survey flow” at the top of the *Qualtrics* screen you will see all your blocks listed. You can see my list of blocks in Figure 13.12.

There are a few steps I need to take in “Survey Flow” before this experiment is ready. Recall that at the bottom of the consent form people will be provided an option to consent or not. If they do not consent they need to be “skipped” to the end of the survey. Here’s how we’ll do that.

- Go to the “Informed Consent Block” in “Survey Flow” and click “Add Below.”
- Click “Branch,” then click “Add a Condition.”
- Select the consent question (Q1).
- Select “I do not consent.”
- Click “Okay.”
- Click “Add a New Element Here.”
- Click “End of Survey.”
- Click “Save Flow” to save what you’ve just done.
- Click “Preview Survey” to see what happens when you click “I consent” or “I do not consent.” The former should take you to the instructions. The latter should take you to the end of the survey.

Now that I’ve entered all the information for this experiment, it’s time to tell *Qualtrics* that I want each participant to see information about only one of the Todds and that I want *Qualtrics* to randomly determine which Todd they see. I can arrange for

You will be provided with a scenario in which a woman named Susan is participating in a dating game show. Susan will be presented with the opportunity to date one of the two male contestants. She must choose between them based on their answers to her question. Please read the information and answer all the questions that follow.

Susan: "Ok, Bachelor #1: What is your definition of a "real man?" And are you one yourself?"
(Participants will see one of the next two "Todd" versions.)

Todd: "A real man knows what he wants and he knows how to get it. Someone who knows who he is but keeps other people guessing and on their toes - he doesn't go in for all that touchy-feely stuff.
He's also great in the bedroom and can tell his partner what he likes.
I'd definitely say I'm a real man."

Todd: "A real man is someone who is in touch with his feelings and those of his partner.
Someone who is kind and attentive and doesn't go for all that macho stuff.
He's also great in the bedroom and puts his partner's pleasure first.
I'd definitely say I'm a real man."

Susan: "Bachelor #2, same question."

Michael: "A real man is relaxed. He doesn't let the world get him down.
He's confident, solid, and keeps a positive attitude at all times.
He's also a great kisser-
and I'm definitely one of those!"

1. What is your gender? _____
2. What is your age? _____
3. Should Susan choose to date Todd or Michael? Todd Michael
4. Which of the men would you choose to date, Todd or Michael? Todd Michael
5. How desirable would Todd be as a marriage partner?
(1 = not at all desirable, 2 = a little desirable, 3 = somewhat desirable, 4 = very desirable, 5 = extremely desirable)
6. How desirable would Michael be as a marriage partner?
(1 = not at all desirable, 2 = a little desirable, 3 = somewhat desirable, 4 = very desirable, 5 = extremely desirable)
7. How desirable would Todd be as a one-night-stand?
(1 = not at all desirable, 2 = a little desirable, 3 = somewhat desirable, 4 = very desirable, 5 = extremely desirable)
8. How desirable would Michael be as a one-night-stand?
(1 = not at all desirable, 2 = a little desirable, 3 = somewhat desirable, 4 = very desirable, 5 = extremely desirable)
9. How nice is Todd? (1 = not at all nice, 2 = a little nice, 3 = somewhat nice, 4 = very nice, 5 = extremely nice)
10. How nice is Michael? (1 = not at all nice, 2 = a little nice, 3 = somewhat nice, 4 = very nice, 5 = extremely nice)

Debriefing: The purpose of this study was to determine if participants would make choices in line with the "nice guy paradox", and reject the nice guy in favor of his more macho competitor. If you have any questions please contact Dr. Wendy Heath at heath@rider.edu.

FIGURE 13.11 Overview of the "nice guy paradox" study.

Show Block: Informed Consent Block (2 Questions)	Add Below	Move	Duplicate	Delete
Show Block: Instruction Block (1 Question)	Add Below	Move	Duplicate	Delete
Show Block: Scenario Block 1 (1 Question)	Add Below	Move	Duplicate	Delete
Show Block: Todd 1 (1 Question)	Add Below	Move	Duplicate	Delete
Show Block: Todd 2 (1 Question)	Add Below	Move	Duplicate	Delete
Show Block: Scenario Block 2 (1 Question)	Add Below	Move	Duplicate	Delete
Show Block: Dependent Variable Block (10 Questions)	Add Below	Move	Duplicate	Delete
Show Block: Debriefing Block (1 Question)	Add Below	Move	Duplicate	Delete

FIGURE 13.12 List of survey blocks in a sample *Qualtrics* survey.

this randomization while I'm in the "Survey Flow" view. Here's what I need to do.

- Click on "Survey Flow."
- My two Todd conditions need to come right after Susan's first question. So on the "Scenario Block 1" line I click on "Add Below," and then I will click on "Randomizer." I will replace the "0" in this randomizer box to "1" so the randomizer will "randomly present 1 of the following elements." Since I want true randomization, I elect *not* to check the "evenly present elements" option, because this would just *evenly* assign people to groups.
- Right below the "Randomizer" box, I will choose "Add a New Element Here" and then choose "Embedded Data."
- In the area that says "Enter Embedded Data Field Name Here" write in "Todd." Then click on "Set a Value Now" and type in a "1" to replace the words "Custom Value" (as shown in Figure 13.13).
- Now we will do what is necessary to represent the second Todd condition. Underneath the "Set Embedded Data" box, choose "Add a New Element Here" and then choose "Embedded Data."
- In the area that says "Enter Embedded Data Field Name Here" write in "Todd." Then click on "Set a Value Now" and type in a "2" to replace the words "Custom Value" (as shown in Figure 13.13).
- Now click on "Add a New Element Here" and then click on "Branch." Click anywhere inside the "Branch" box to activate it, and then use your keyboard's down arrow to move the Branch box out of the randomizer (click the down arrow once).
- Click on "Add a Condition" in the Branch box. Use the "Question" pull-down menu to choose "Embedded Data." In the box, type "Todd" and then type a 1 so that this section reads, "If Todd is Equal to 1." Click "OK."
- Activate the "Show Block: Todd 1" block by clicking on it, and then use the up arrow on your keyboard (click once) to move the Todd 1 block right under the Branch box.
- Now we need to do the same thing for the Todd 2 condition. Click on "Add a New Element Here" under the Todd 1 box, and then click

on “Branch.” Click inside the “Branch” box to activate it, and then use your keyboard’s down arrow to move the Branch box out of the randomizer (click the down arrow once).

- Click on “Add a Condition” in the Branch box. Use the “Question” pull-down menu to choose “Embedded Data.” In the box, type “Todd” and then type a 2 so that this section reads, “If Todd is Equal to 2.” Click “OK.”
- Activate the “Show Block: Todd 2” block by clicking on it, and then use the up arrow on your keyboard (click once) to move the Todd 2 block right under the Branch box.
- I have now set up *Qualtrics* to randomly assign one of the two conditions to each participant; this randomizing section looks like that shown

in Figure 13.13. If you have more than two groups in the research you are preparing, you would expand this procedure to include each of the groups you wish to randomly assign. Finally, remember to click “Save Flow” before leaving this screen so this randomizing command is maintained.

Once you’ve done all this, preview your research document by clicking “Preview Survey.” When you are satisfied with your document, it’s time to recruit participants. Click “Distributions.” *Qualtrics* will ask you how you want to distribute the survey. If you wish you can make a selection here, such as email or social media. You can also choose to get an “anonymous link” that you can use later if you wish to send to prospective participants. I will refer to the link

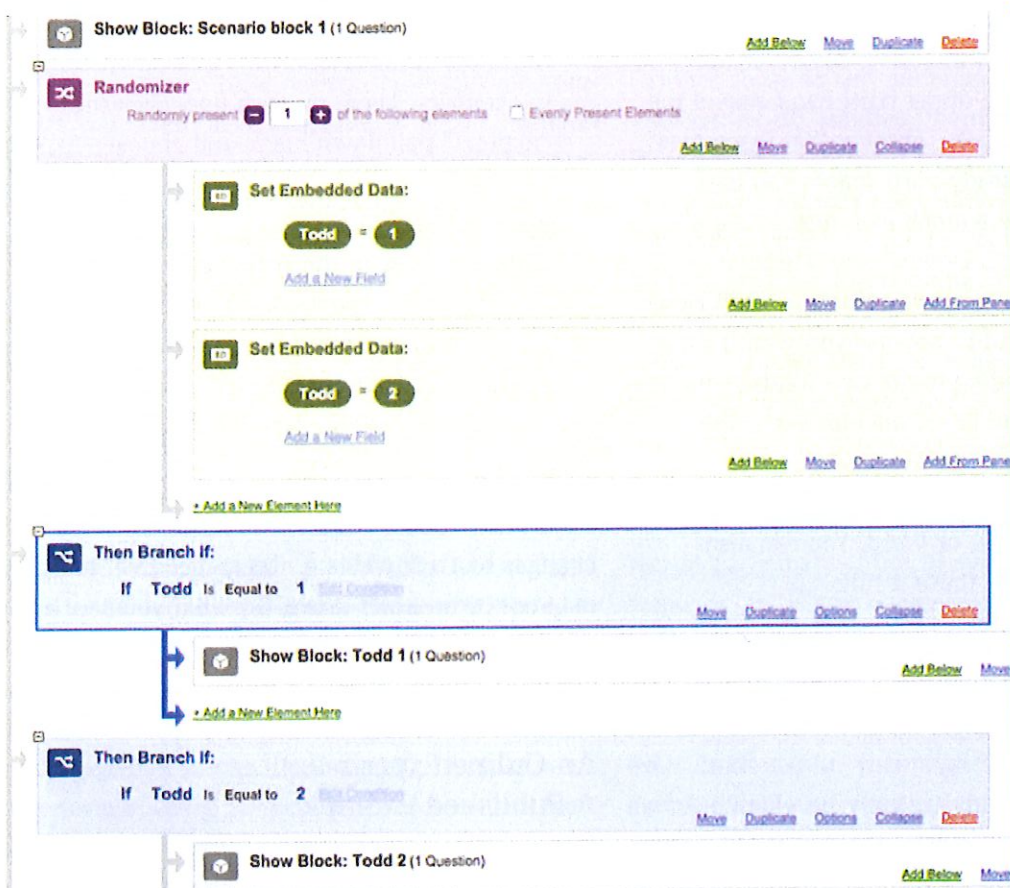


FIGURE 13.13 Randomizing section of a sample *Qualtrics* survey.

later. Let's now talk about what to do once you have collected the data.

When it is time to view your results in *Qualtrics*, follow the steps below.

- Log in to www.Qualtrics.com and click on the project of interest.
- Click the "Reports" tab that is near the top of the screen.
- Choose "Printed Reports."
- Choose "Create New Report" and then click "Create."
- At this point you have choices as to how you want to display your data. I recommend choosing the option on the right, which gives you all available options: title, graph, table, and stats. Click "Generate Report."
- We want to see how those who received information about the two different Todds responded. In the upper right-hand side of the screen, you will see a number that represents the number of study participants you have tested. Click the wrench icon next to it and choose "Edit Drill Down." You will then be asked to choose what you want to "Drill-Down By"; choose "Todd" because you want to split your data according to the two Todds. This will provide you with the results for each type of Todd. Click "Apply to Report."
- Click "Share" to export these results to PDF, Excel, PowerPoint, or Word. You can also choose to "Print" these results.

Note that you cannot download the raw data from *Qualtrics* if you have only a free account. You also cannot analyze the data within *Qualtrics* with a free account. However, many universities have *Qualtrics* licenses and you may be eligible for an account under your university's license, which would allow you to export your data. In any case, it is possible to view the data for analysis in an

outside program like Excel or SPSS. Here's what you need to do.

- Click on the research project you want to work with.
- Pull down the "Tools" menu and choose "Export Survey to Word." Make sure all the options are checked ("Show Question Numbers," "Show Logic," "Show Coded Values," and "Strip HTML Tags from all Questions and Answers"). Click "Export."
- Create a spreadsheet within your statistics software. Create one or more columns for whatever identifying information you have collected (such as IP address). Create a column that will reflect what "Todd" group each respondent received (Todd 1, Todd 2). Then make a column for each question of the survey.
- Go to the "Data & Analysis" pull-down menu in *Qualtrics*. Then, on each line, click the "Actions" pull-down menu and choose "Export" as a PDF.
- Each respondent (and thus each PDF) will make up a row in the spreadsheet. Export a PDF for each respondent. Copy these data onto a data sheet and input the data into a statistical program for further analysis (again, details regarding how to analyze the data are beyond the scope of this text).

Note that *Qualtrics* occasionally makes minor changes to their website, thus what I've described may not be an exact match for what you see. If you need help while in *Qualtrics*, visit the *Qualtrics* "Support" Department to contact *Qualtrics* directly.

An Online Experiment: A Published Example

Let's now go over an example of an experiment that was conducted using *Qualtrics* so you can get more of a feel for what is possible. Have you ever watched

a television program that had a Twitter feed of viewers' comments crawling along the bottom of the screen? Cameron and Geidner (2014) were interested in whether the content of that crawling information affected people's views of what they were watching. Perhaps it's a political debate and viewers will later have to vote for their candidate of choice. Perhaps it's an entertainment program, such as "Dancing with the Stars," and those at home can vote for their favorite dance team. Would the comments in the crawl affect those views? That's what Cameron and Geidner were determined to find out.

For their first experiment, Cameron and Geidner made three different versions of two videos from the television show "American Idol." Each video showed a top-10 but non-winning male idol contestant singing. One version of each video was manipulated to show 70% positive Twitter comments crawling along the bottom of the screen; the remaining comments were neutral or negative. A second version of each video was manipulated to show 70% negative Twitter comments crawling along the bottom of the screen; the remaining comments were neutral or positive. A third version of each video was created to act as a control; no Twitter comments were present. Participants were randomly assigned to conditions.

Cameron and Geidner used *Qualtrics* to create their online experiment (you can use *Qualtrics* to present your participants with video content). They sent undergraduates in journalism courses at their university a letter requesting their participation and included a link to the online experiment. Those who elected to participate were shown online videos of two contestants and were asked to rate both the quality of the singer (1 = very negative, 7 = very positive) and their level of agreement with the statement, "I think [name of performer] could be the winner of *American Idol*" (1 = strongly disagree, 7 = strongly agree).

What did Cameron and Geidner find? In general, those who saw the videos with the positive Twitter

feed had significantly more positive views of the singers and thought it was more likely these singers would win than did those who saw the negative or control videos. These results suggest that broadcasters should be advised that the content of the crawling message may indeed affect the thoughts and behaviors of their viewers, and that these techniques should be used with caution whenever television viewers vote.

How Do I Recruit Participants?

We've now discussed putting both survey and experimental research online. As alluded to above, survey and experiment builders, such as *SurveyMonkey* and *Qualtrics*, generally generate a web link (a URL) that you can make available to prospective survey respondents. Both Park and Lee and Cameron and Geidner chose to test undergraduates at their home universities by sending them the generated link. However, there are times when researchers may wish to test those outside their universities. For example, you may choose to recruit potential respondents through email or social media. You may also choose to post your link on a website that lists available research studies (such as Hanover College's "Psychological Research on the Net" available at <http://psych.hanover.edu/research/exponnet.html>).

If you have funding, you may choose to pay a survey-builder company such as *SurveyMonkey* to recruit participants from its vast database of survey respondents. If you decided to do this, you would be able to target specific types of people by naming the demographic criteria you need (say, females over 30). However, since significant funding can be difficult to obtain, you might consider *Mechanical Turk* (*MTurk*) as a way to obtain large samples from around the world for relatively little money. After an introduction to *MTurk*, I'll show you how to link research studies created on *Qualtrics* to *MTurk*.

The reason I'm concentrating on describing how to link *Qualtrics* to *MTurk* and not describing linking *SurveyMonkey* to *MTurk* is that, as of this writing, *SurveyMonkey* doesn't have an officially sanctioned way of generating the random code needed for *MTurk* as proof of research participation.

Mechanical Turk

In the eighteenth and nineteenth centuries, a human-sized puppet dressed in Turkish robes, an apparent automaton, astounded crowds across Europe as it demonstrated its chess-playing skills, easily beating most opponents (Figure 13.14). It was later revealed that a chess master was hidden in the table beneath, moving the chess pieces with magnets (Folbre, 2013). The automaton was not capable of playing chess at all. This story was the inspiration behind Amazon's *Mechanical Turk* (*MTurk*), a website launched in 2005 to engage large numbers of humans in tasks computers cannot do (Baz, 2014).

Today *MTurk* is known as a flourishing online labor market. Amazon calls those who participate in tasks **Workers** and says there are more than half a

million Workers on *MTurk*, although the number of unique individuals participating in research has been estimated to be far less (Bohannon, 2016). While a majority of them live in the United States or India (Paolacci, Chandler, & Ipeirotis, 2010), their overall diversity is impressive; Workers from as many as 190 countries have been documented (Amazon, n.d.).

Before I go further to explain how *MTurk* works, I want to note that there is an ethical concern regarding *MTurk* and its use of identification numbers to track its Workers. It has recently been revealed (Lease et al. [2013]) that the ID used in the *MTurk* marketplace is also the ID you use as an Amazon customer, so identifying information may be available through this route. In response to this potential problem, Lease et al. suggest that Amazon assign unique ID numbers to *MTurk* Workers that will not also be used at other Amazon sites. Until that occurs, they recommend that researchers replace the *MTurk* Worker IDs with a new set of IDs and eliminate any link between the two. Unfortunately, many researchers are under the impression that *MTurk* Workers are anonymous because explicit identifying information like names is not collected. Now we know that a conscious effort must be made when using *MTurk* to protect online participants' privacy.

How Can I Become an *MTurk* Worker?

Before launching your own study on *MTurk*, you might wish to see how others use *MTurk* to conduct their research. If so, go on www.mturk.com to see what it is like to be an *MTurk* Worker. You first need to register as a Worker and get approved by Amazon (this process takes about 48 hours). Once you have been approved, go to *MTurk* and click "Find HITs now." HITs are Human Intelligence Tasks, and you can search for these by keyword (such as psychology) and amount of pay. You then can complete almost any task that interests you (some require that you get "qualified" first). Once you submit your data

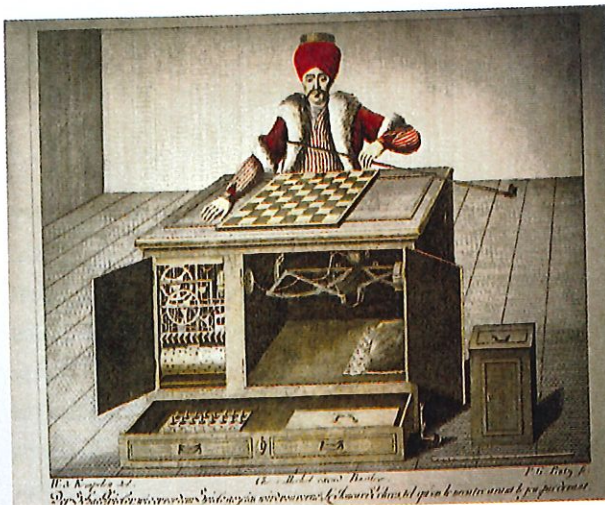


FIGURE 13.14 The Mechanical Turk, a chess-playing automaton.

and your submission has been approved by those offering the task, money is paid into your Amazon payment account. It's that simple!

How Do I Put My Research on MTurk?

Those who list tasks to be performed are called **Requesters**. To list a task on *MTurk*, that is, to upload your survey or experiment, you must first register for an *MTurk* Requester Account (you must have a US billing address). Social science researchers are increasingly using *MTurk* to collect data, so we will go over the process of putting your research study on *MTurk*. We'll start by focusing on how you can link *Qualtrics* to Amazon. There are two major steps you need to take in order to prepare your *Qualtrics* research for *MTurk*: (1) get *Qualtrics* to generate a random number for each participant, (2) link *Qualtrics* to *MTurk*. We'll cover each of these procedures in turn.

Get Qualtrics to Generate a Random Number for Each Participant. In *MTurk*, Workers are paid only for completed work that was done correctly. So researchers need to be able to know which participants finished the work as directed. You can program *Qualtrics* to generate a randomly determined code and then compare it to the list of Worker-entered codes on *MTurk*. If the two codes match, this means the Worker received the code by completing the task (getting to the final page). You can then approve the work and the participant will get paid.

Let's now talk about how to generate a random code in *Qualtrics* for an already-created survey or experiment.

- Go to www.Qualtrics, choose the project you want to link to *MTurk*.
- Scroll down to the "Debriefing Block."
- Click on the words in your Debriefing Block. Add the words "Your participation code is:" to this block.

- Go to "Survey Flow."
- Scroll down to the "Debriefing Block."
- Click "Add Below."
- Click "Embedded Data."
- Replace the words "Enter Embedded Data Field Name Here" with the phrase: ParticipantCode.
- Click "Set a Value Now." We're now going to tell *Qualtrics* that we want a random number between 100,000 and 999,999 to be generated for each participant. Click "Custom Value" and insert the following: `${rand://int/100000:999999}`
- Click anywhere in the embedded data element box to activate it and then hit your keyboard's up arrow once to move the Embedded Data Element box right above the Debriefing block. See Figure 13.15 for a partial view of your Survey Flow.
- Click outside the "Debriefing Block" to deactivate it.
- Click "Save Flow."
- You should now be back in the "Survey" area. Scroll down to the "Debriefing Block."
- Click on your words in the "Debriefing Block."
- Click "Piped Text."
- Click "Embedded Data Field." Replace the words "Embedded Data Field" with the phrase: ParticipantCode
- Make sure that the words "Your participant code is:" come before the random number place holder (the random number place holder looks like: `${e://Field/ParticipantCode}`). You can move the phrase "Your participant code is:" if you need to.
- Click "Insert."
- You have now added a random number generator to *Qualtrics*. Now your participants will each get a unique random number at the end of their session.
- You can click "Preview Survey" and review the survey to ensure that there is a random number generated at the end.

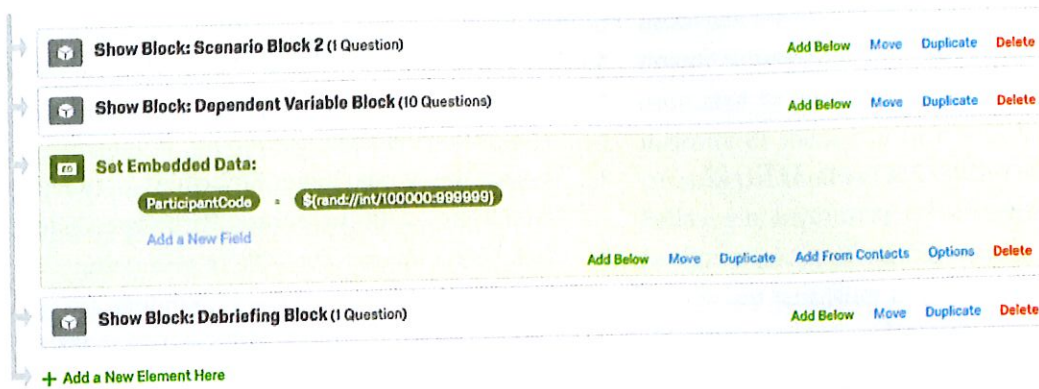


FIGURE 13.15 A partial view of a sample *Qualtrics* survey flow.

- Note that when you host your survey or experiment on a third party site such as *Qualtrics*, you should include a question in your questionnaire that asks for this Worker ID code. This will enable you to match codes from your questionnaire to codes at the *MTurk* site. If you determine that someone didn't complete the task adequately, you can then reject their payment.

Link Qualtrics to MTurk. Recall that when we created the research in *Qualtrics* we ended up generating a web link (a URL) that is basically the Internet address for your study. If you decide that *MTurk* is your participant pool of interest, you will be using this URL in *MTurk*. Let's talk specifically how to set this up.

Go to <https://requester.mturk.com> and get ready to click.

- First click "Create."
- Then sign in to create your project. Now it's time to fill in information regarding your study. Give your project a name; this name is not shown to your workers (I chose "Dating Project"). Give your study a title (say, "Answer a survey about your opinions on dating"), and describe your task ("Give us your opinion about a dating situation"). Be careful not to use terms that could affect participants' responses. For example, I wouldn't want to title my dating study "Would you be willing to date a jerk?" Then put in some keywords (such as "dating," "game show"). Note that Workers often use keywords to find tasks they want to do, so you need to think of keywords that could lead people to your task. See Figure 13.16.
- In the next section, you will indicate the details, such as how much "reward" you intend to pay your Workers (I decided on \$0.25 per task completed), how many Workers you want (say, 50), and how long they have to complete your task (say, 1 hour). You will also need to indicate how long your task will be available to Workers (such as 7 days), and how long you have to review and reject work before it is automatically approved (say, 3 days). See Figure 13.17.
- At this point you are going to set the qualifications for your Workers. Do you want your Workers to be Masters? Master Workers have already shown that they are good at a specific kind of task. If you want only Master Workers to complete your task, you should expect to pay more. If you are not going to require Master Workers, click "no." You can also specify any additional qualifications for your prospective Workers here. You can, for example, specify whether you want Workers who have an approval rate over a specific level. An *MTurk* Worker with a high approval rating

Edit Project

Specify the properties that are common for all of the HITs created using this project.

1 Enter Properties
2 Design Layout
3 Preview and Finish

Project Name: Dating Project This name is not displayed to Workers.

Describe your HIT to Workers

Title
 Answer a survey about your opinions on dating
Describe the task to Workers. Be as specific as possible, e.g. "answer a survey about movies", instead of "short survey", so Workers know what to expect.

Description
 Give us your opinion about a dating situation
Give more detail about this task. This gives Workers a bit more information before they decide to view your HIT.

Keywords
 dating, game show
Provide keywords that will help Workers search for your HITs.

FIGURE 13.16 MTurk sample edit project page.

Setting up your HIT

Reward per assignment
 \$ 0.25 ¢
This is how much a Worker will be paid for completing an assignment. Consider how long it will take a Worker to complete each assignment.

Number of assignments per HIT
 50 ¢
How many unique Workers do you want to work on each HIT?

Time allotted per assignment
 1 ¢ Hours
Maximum time a Worker has to work on a single task. Be generous so that Workers are not rushed.

HIT expires in
 7 ¢ Days
Maximum time your HIT will be available to Workers on Mechanical Turk.

Auto-approve and pay Workers in
 3 ¢ Days
This is the amount of time you have to reject a Worker's assignment after they submit the assignment.

FIGURE 13.17 MTurk sample setting up HIT page.

(such as 95%) is one who has consistently submitted high-quality work.

- Click "Save" to save your preferences.
- Click "Design Layout." At this point you should highlight the instructions and replace them with instructions that make sense given your study. I put in the following: "You will read a scenario about a dating game show. Please read the scenario carefully and answer the questions that follow. At the end of the task, you will receive a code to paste into the box below. Make sure to leave this window open as you complete the survey. When you are finished, you will return to this page to paste the code into the box."
- Go to www.Qualtrics.com. Click on the survey you want to link to *MTurk*. Click "Distributions" then click "Anonymous Link." This will yield your *Qualtrics* URL. Place your *Qualtrics* URL into the *MTurk* "survey link" area and then click "Preview."
- Click "Finish" on the next page, and then click "Publish Batch" on the page that follows. You will then see what your "HIT" or Human Intelligence Task will look like to potential Workers.
- Click "Next." Amazon will then ask for a credit card to cover the cost of your payments to participants as well as your *MTurk* fees (Amazon will do these calculations for you). Provide your credit card information. Click "Purchase & Publish." Your project has been launched!
- Once you have participants, you can review your data from *Qualtrics*.
- Go to your Amazon account, click on the "Manage" tab, compare the code for each participant to the codes shown in *Qualtrics*, and decide whether to approve the work of each participant. If you check "approve," the participant gets paid.

An Alternate Way to Conduct an Online Experiment

I chose to use *Qualtrics* to design a between-subjects online experiment, because it will allow you to randomly assign participants to groups without incurring a cost. And if you use *MTurk* to collect data, it prevents respondents from completing the same task more than once, which is ideal because, in a between-subjects experiment, you do not want the same person in more than one condition. Thus, the approach I've covered so far can work well. However, some researchers have suggested a different approach to conducting between-subjects experimentation in *MTurk* (see Johnson & Borden, 2012).

Instead of listing one link in *MTurk* that contains an instruction for random assignment, you can create different groups (experimental and control groups) that are each given a separate link. In fact, you could create these different groups using *SurveyMonkey* or *Qualtrics* or even use *MTurk*'s templates to create your different groups. Then you would place the multiple links in *MTurk*. You need to make sure you change the HIT project name so you know one group from another (participants do not see these names), but use the same HIT title for each link (participants do see this name). You also need to take an extra step. You need to go over the *MTurk* Worker IDs to ensure that Workers did not participate more than once (and if they did, make sure you accept only the first time they participated, because later participation may be affected by earlier participation).

Why Are *MTurk* Workers Willing to Work for so Little Money?

When I first was introduced to *MTurk*, I was astounded by how little Requesters were willing to pay Workers to complete their tasks. Most were paying mere pennies per task, and rarely was anyone offering more than a dollar. The amount of compensation has been shown to affect participation rate,

but participants have been shown to be willing to complete short tasks for very little money (Buhrmester, Kwang, & Gosling, 2011). For example, Buhrmester et al. asked *MTurk* respondents to reply to two questions (age and gender) in exchange for one cent. They received 500 responses in just a little over a day. Why would people take time out of a presumably busy day to do a task for so little money?

Researchers have considered that very question. Paolacci et al. (2010) found that some respondents were indeed motivated by the money. Interestingly, approximately 14% of those sampled revealed that completing *MTurk* tasks was their primary source of income, and over 61% indicated they were motivated by the additional income that working on *MTurk* tasks provides. On the other hand, a significant percentage of their respondents indicated that they used *MTurk* tasks for entertainment (40.7%) and killing time (32.3%). Almost 70% said working on *MTurk* tasks was a “fruitful way to spend free time” (p. 413). Couple this with the idea that people can elect to do this work whenever they want, and you have a marketplace that works!

How do you decide how much to pay your Workers? One recommendation is to look at what others are paying for similar tasks. Certainly you’ll want to consider your budget too and remember that you will need to both pay your workers and cover your *MTurk* fees. *MTurk* charges 20% of the amount you pay workers, with additional charges if you use Master Workers. Some (for example, Barger, Behrend, Sharek, & Sinar, 2016) have suggested using the current minimum wage to calculate a fair wage for your Workers. For example, currently the federal minimum is \$7.25/hour (approximately \$0.12/min). If your task is estimated to take 10 minutes, you can offer \$1.21 for successful completion of the task, and higher pay rates for more complex tasks or tasks that require specialized skills.

You can ask for your Workers to be qualified in a particular way (for example, you can request that

they be parents). This type of “premium qualification” will cost a one-time additional fee (see <https://requester.mturk.com/pricing>).

How Do the Data from *MTurk* Compare to Data Collected Elsewhere?

Many researchers have sought to determine how participants assessed through *MTurk* differ from those in more traditional samples (such as university students). This is an important question. Psychological science has, at times, been criticized for its heavy reliance on college students for testing. Are *MTurk* samples more diverse, and perhaps more representative of the general population, than are samples of college students? Some researchers have found that *MTurk* samples are more diverse than typical college samples (see for example, Buhrmester et al.), although not everyone has found this level of diversity (see Bohannon, 2016). Paolacci et al. (2010) found that their US sample of *MTurk* Workers was “at least as representative of the U.S. population as traditional subject pools, with gender, race, age and education of Internet samples all matching the population more closely than college undergraduate samples and Internet samples in general” (p. 414).

Researchers have evaluated the quality of data obtained on *MTurk* in a variety of ways, and the general conclusion is favorable. For example, one way to assess attentiveness in a sample is to include attention checks in the survey questions. An **attention check** is a question included in a series of questions to test whether participants are paying attention. Hauser and Schwarz (2016) found that *MTurk* Workers with high approval ratings were more attentive to attention checks than were their resident college students responding online (see Figure 13.18 for an example of an attention check used by Hauser and Schwarz).

Crump, McDonnell, and Gureckis (2013) also examined the quality of *MTurk* data; they looked at a series of classic cognitive tasks to evaluate whether

PERSONALITY TRAITS

For this question, we would like to get a sense of who you are and how you think about yourself. Your personality could predict what kinds of decisions you make. We also want to see if people are reading the questions carefully. To show that you've read this much, please ignore the question about personality items below. Instead, mark the "Other" box and type in "I read the instructions" then click the >> button to progress to the next page of the survey. Thank you very much.

Which of these personality traits best describe you and your personality? (click on all that apply)

☐ Open to new experience

☐ Conscientious

☐ Extraverted

☐ Agreeable

☐ Neurotic

☐ High Self-Esteem

☐ Risk-seeking

☐ Perfectionist

☐ Rigid

☐ Impulsive

☐ Warm

☐ Other



FIGURE 13.18 Example of an attention check used by Hauser and Schwarz (2016). Used with permission of David Hauser (djhauser@umich.edu).

the results obtained with *MTurk* were similar to those obtained in previous research. In most cases, they were. In addition, *MTurk* Workers have shown the same cognitive biases as those in traditional samples – that is, they make the same kinds of errors (Goodman, Cryder, & Cheema, 2013).

Another way researchers have checked the viability of *MTurk* research is by recruiting people from different sources and then comparing the obtained results. For example, Paolacci et al. (2010) recruited participants from (1) *MTurk*, (2) a university, and (3) online discussion boards. The comparison revealed some interesting points. Those recruited from the online sources were older than the college sample. Paolacci et al. also considered the percentage of respondents who started the survey but then dropped out. Over 90% of those from the college sample and from *MTurk* completed the study; only

67% of participants from the online discussion boards did. Moreover, Paolacci et al. concluded that the results obtained using the *MTurk* sample “did not substantially differ” from those obtained with the college sample (p. 416).

Some researchers might be hesitant to test online because it is difficult to know whether the respondents are telling the truth about themselves. This too has been tested in a variety of ways, with good results. For example, Shapiro, Chandler, and Mueller (2013) checked the reported location of respondents (by confirming it with an Internet protocol [IP] address) and found they generally told the truth about where they were. Some might argue that people don't have much motivation to lie about their location. However, note that researchers have also checked for truth telling by looking for consistency in the reporting of

demographics (such as age) over time. Again the results have been reassuring (see Mason & Suri, 2012; Shapiro et al., 2013).

Can Special Populations Be Studied Online?

Some have wondered whether collecting data from specialized populations will also benefit from online data collection. If you have a sample of potential respondents you already know about and can contact (such as a support group at a hospital or members of a Facebook group that targets a specific disorder), you can email them your study web link and they can choose whether to participate in your study. But what if you do not have a ready sample of a special population? What if instead you need to look for people who fit your criteria? Shapiro et al. decided to consider that very question using *MTurk*.

Shapiro et al. collected data from a sample of *MTurk* Workers and determined whether they were viable candidates for the study of various clinical issues (such as depression). To do this, they asked *MTurk* Workers who were US citizens to answer a series of questions that assessed their mental health and their personal experience of clinically relevant events like traumas. Since the requested information was of a sensitive nature, Shapiro et al. were concerned that Workers might be inclined to lie. So they collected data in two waves. A week after the first assessment, they invited the participants (identified only by an ID number) back to answer a second survey with many of the same questions. Shapiro et al. were able to determine whether a participant was likely fabricating information by comparing each person's demographic responses from week one and week two (very few had inconsistent responses).

Shapiro et al. found the prevalence of depression, general anxiety, and exposure to traumatic events to be generally equal to the prevalence previously

found in the general population when tested offline. A substantial number of respondents also reported problems in areas of substance abuse. Overall they indicated feeling relatively more comfortable revealing information about their mental health online than in a face-to-face interview situation.

This data collection technique had additional benefits; it was amazingly quick and relatively inexpensive. The first wave of 530 participants were each paid \$0.75 for the 20-minute task, and the data were collected in only two days! The second wave of participants ($N = 397$) were paid \$0.80 each; these data were collected in five days. There were concerns, however. For example, a surprisingly large number of respondents reported experiencing symptoms that should be extremely rare, raising the possibility that they were falsifying information. Given these concerns, Shapiro et al. suggested ways to address data quality issues. For example, they recommended pre-screening Workers and having only those who meet predefined criteria complete the study. Ultimately Shapiro et al. concluded that *MTurk* was indeed a viable way to access various clinical populations.

Advantages and Disadvantages of Online Research

As a result of reading this chapter you may have a sense of the advantages and disadvantages of online data collection. Let's review these now. One of the advantages of collecting data online is that it can be done relatively quickly. When I was in graduate school, I remember being quite dismayed that it took me 11 months to collect the data for my dissertation. I needed a total of 300 participants but could test, at most, only four at a time. I daydreamed about graduating a year earlier if only I could collect data from larger groups. Imagine what my daydreams would have been like if I had read about a research team collecting data for their study in a matter of hours

(see Emanuel, 2014). We rarely design our studies based on how fast we can collect data, but the world of data collection has changed tremendously in recent years, and collecting data relatively quickly has become a reality.

Another advantage of online testing is the prospect of large samples, which can be especially important for those, such as researchers at small colleges, who do not have easy access to large pools of prospective study participants (Johnson & Borden, 2012). Yet another advantage was revealed by Shapiro et al. Recall that their respondents indicated feeling more comfortable revealing information about their mental health online than in a face-to-face interview. Thus, if you are collecting data of a very personal nature, you may wish to take the online route.

A further advantage of online data collection is that online samples have been found by some to be more diverse than traditional college samples (for example, Gosling, Vazire, Srivastava, & John, 2004). The ability to test a more diverse population can increase the external validity of the work (see, for example, Daftary-Kapur & Greathouse, 2011; Wiener Krauss, & Lieberman, 2011). You may recall from Chapter 7 that psychological research in the world's top journals tends to be based on WEIRD samples (Western, Educated, Industrialized, Rich, and Democratic). As a result of this bias, Henrich et al. (2010) encouraged researchers to conduct research with more diverse populations; the Internet could help make that happen.

There are potential disadvantages to online research. For example, a computer could crash or malfunction while the participant is in the middle of an online session. The researcher loses data and the participant is left hanging, without the benefit of debriefing. If the data collected are of a particularly sensitive nature, or if a deceptive cover story must

be revealed, debriefing is vitally important. In fact, some (such as Buchanan & Williams, 2010) have said that deception should be avoided for online research because of the risk that debriefing might not take place. If the participant has questions to ask or wishes to indicate being unable to complete the study, the hope is that he or she can refer back to the researcher's contact information on the informed consent form to do so. As you can see, this potential snag is uniquely an online problem.

Another problem that can occur with online testing is that you don't really know whether people are misrepresenting who they are (for instance, a minor might represent him- or herself as someone who is at least 18). It can be difficult to spot falsified demographic information. One possible way to deal with this problem is to do as Shapiro et al. did. They attempted to determine whether participants were likely fabricating information by comparing their demographic responses from two online sessions conducted a week apart. The assumption here is that those falsifying information will be unlikely to be consistent in their lies. It isn't a fail-proof method, but it can help. Deceptive participants are often less of an issue in traditional offline samples.

A further challenge is participants who drop out of the study. While dropouts are not unique to online research, they sometimes are more prevalent than in offline testing. There might be a computer crash or other technical problem, or there may be a host of other reasons more directly under the participant's control. He or she may be bored, hungry, or tired and decide to quit, and just closing your browser is easier than getting up and leaving in the presence of the researchers. Online participants who decide to quit during a testing session typically do not get the benefit of debriefing, again truly a concern for those conducting online data collection.