

WHERE TO START WITH ETHOLOGY RESEARCH: A STUDENT-CENTERED PRIMER WITH EXAMPLES

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ABSTRACT

Instructing students on how to conduct direct observations for the purposes of performing human ethology research can be challenging, given that they may not have any prior training. Here I review an undergraduate course on human ethology, where students carry-out independent projects to test a hypothesis using observational units. I first briefly describe the course, then present three different ways that one may find research ideas (surveys, media, and casual observation), and then present details on the actual assignment I distribute to students. The goal of this paper is to provide support for instructors who are considering adding an observational component to a class, or who may propose a human ethology course at their institution.

Keywords: *Observation, instructional support, student evaluation, human ethology.*

Human ethology is *not* one of the routine topics that is taught at Canadian universities. Indeed, my university seems to be one of the last remaining strongholds for human ethological research. Most university departments have instead elected to move toward offering courses on evolutionary psychology, behavioral ecology, or similar, which rarely allow students to perform direct observation on humans to address a question that has both an ultimate and proximate foundation (Tinbergen, 1963; see also Barrett & Stulp, 2013; Bateson & Laland, 2013). Here I briefly describe the course composition, some of the ways that students may generate ethological research ideas, and the approach I specifically use to guide students to complete an evaluated observational assignment.

ABOUT THE HUMAN ETHOLOGY UNIVERSITY COURSE

I have taught the only course in my psychology department that pertains to direct observation for the past decade. Thus, my students typically have no prior experience in performing objective, real-time observational research. The class is composed of 30 to 50 senior level undergraduates, with approximately one third possessing some background in university-level biology. Most, but not all, of the students are part of the honor's program, and the course counts toward a 'science' credit for their psychology major.

There are two assignments in the course. The goal of the first assignment is to train the student to perform simple observations that are free of interpretation or judgment. This assignment (described in more detail later) is distributed early in the course to allow a month for students to notice situations that might be used to address a general research topic given to them (e.g., personal space). The students generate behavioral units that they can easily observe and document. The second assignment builds on the first, such that students then use the behavioral units they have constructed in the first assignment to address a hypothesis that has implications for both proximate and ultimate causation.

The first half of the course is devoted to theory, learning about relevant biological principles, as well as important historical figures in human ethology and their research. The bulk of the class time is spent talking about Lorenz's and Tinbergen's theories. Every class begins with a discussion of the assignment, with the goal of helping students see how the theories covered in the lectures tie into the ways they are performing their research. The second half of the course delves more deeply into human observational research findings with the assigned readings being primarily articles that have been published in this *Human Ethology Bulletin* over the last few years. Class discussions aim to help students connect their own research to the readings. It is important to note that for the second assignment students must submit a research paper that is in the form of an empirical journal article, or a conference poster that would be suitable for them to present at a meeting of the *International Society for Human Ethology*. They are provided with examples from posters that I have photographed or handouts from past conferences. Some students (usually one every two years) do take the final leap and attend the society conferences, while most opt to present the posters at an annual in-house psychology conference.

One issue that deserves attention is whether the instructor needs to receive approval from an institutional ethics review board prior to the students performing their research. Universities vary in how they interpret national ethics policies. At my institution, as long as one does not interfere, manipulate, or collect identifying information on participants and relies strictly on observations from the public sphere, there is no requirement for board approval. Hill and Monahan (2012) have written about ethics approval for human ethology studies performed in public settings. Each researcher needs to check with their institution, and it is critical to note that national regulations differ remarkably from country to country.

HOW TO GENERATE RESEARCH IDEAS

Unlike faculty who immerse themselves in the relevant literature for a given topic, students are often presented with the most debilitating obstacle to performing direct observational studies of human behavior: knowing where to start. Indeed, techniques for generating new research ideas are not well studied (e.g., Roberts, 2004). Here, surveys, television and other media, as well as anecdotal observation are presented as three viable starting points to performing successful research.

Although it might seem paradoxical, one useful place to begin to generate questions for direct observation of human behavior is to use surveys. Surveys have the benefit of being convenient, fast, cheap, and easy to distribute. However, for the reasons mentioned by other authors in this volume (Oberzaucher, 2017), asking people to report on their own behavior is likely to be highly misleading.

Ahmad and Fisher (2010) surveyed men's perception of women's flirting with the goal of determining how accurate men were at decoding women's signaling behavior. They used a list of 15 nonverbal female flirting behaviors from Moore (1985), and asked men how indicative each behavior was at signaling women's desire for a sexual encounter. Then, they directly observed 50 women's flirting behavior at nightclubs and recorded whether they left with the man with whom they flirted. They found that women were more likely to leave with the man when they exhibited behaviors that men reported as signaling sexual desire. Therefore, Ahmad and Fisher were able to add the observational finding that women sending certain signals had an increased likelihood of leaving with the target man, which added value to the expressed subjective meaning of these signals as determined by the survey findings. From the students' point of view, the survey findings would be a stimulus to observational research questions.

Surveys can also lead to exploring topics and methods that might not otherwise be immediately apparent. For example, Blennerhassett and Fisher (2011) examined what women talk about in bathrooms, with the added twist of exploring whether conversations differ in establishments that are oriented toward a heterosexual or homosexual clientele. They based their work on survey findings from Fisher and Cox (2011), who documented the various ways that women self-promote, or derogate and manipulate other women for the purposes of mating competition. Their aim was to observe women using these behaviors in real life, but also investigate whether they differed according to the presumed sexual orientation of the subject. They discovered that watching these behaviors was problematic because subjects would act differently if they realized they were being observed. Moreover, it was challenging to accurately determine the cause or the reason for some of the behaviors. For example, it was not possible to conclude that when a woman repositioned her hair, it was to improve her appearance versus a postural echo of her friend. Therefore, they decided to observe behaviors, as well as listen to what women talked about in bathrooms, in the hopes of gaining clearer insight into the motives behind the behavior. They further explored whether the behaviors and topics of discussion varied according to the presumed sexual orientation of the clientele. Their results showed that self-promotion via grooming was the most common behavior, in line with the survey results. They unexpectedly documented the second most common behavior being counselling of other women, which they defined as women entering bathroom stalls together and speaking about

situations where they needed advice, followed by acts of indirect aggression, such as derogation of other women. Considering differences due to type of clientele, they discovered that women in the homosexual bars were more likely to compliment other women, and to make announcements regarding their own relationship status of being single, possibly to make potential mates aware of their availability.

Other potential source of inspiration, in addition to surveys, is television, films, or social media. These cultural products reveal human nature, and reflect our interests, cognitions, and emotions (see Fisher & Salmon, 2012). Take for example a news story about men purchasing lingerie from a store, which anecdotally raises the issue of whether men make their purchases as quickly as possible (Lutz, 2014). Similar stories have been revealed on social media for several years. After reading a story like the one cited, Moule and Fisher (2014) used classical ethological approach-avoidance theory to posit that men are visually interested in lingerie (and hence pulled by approach motivation) but refrain from physical contact due to social norms (avoidance motivation). They observed men's behavior when shopping in lingerie stores and compared it to women's clothing stores, when part of a heterosexual couple. Their behavioral catalogue was based on initial observations during a pilot phase, but also on existing literature about approach-avoidance behavior in other domains, such as door knocking.

A final starting point is to simply use everyday observations which are refined and operationalized around theory. For instance, everyone uses bathrooms on a daily basis. However, there is very little research on bathroom behavior, presumably because bodily functions are rather unsavory to explore empirically. Cormier and colleagues (2017) started their project by noticing that people's behavior in bathrooms seemed to differ according to whether there was a line or not of waiting individuals. One of the team members recalled an earlier paper in which researchers examined how long it took subjects to leave a parking space, depending on whether someone was waiting or not for the spot. Those findings suggested that parking spaces are akin to small territories and people take longer to vacate when there is someone waiting. Therefore, Cormier et al. hypothesized that women would take longer in bathroom stalls when there was someone waiting, as opposed to no line. They tested this idea in their university, as well as in a large local public market. Their findings showed that at the university, women took longer in the stalls when there was no one waiting, counter to their hypothesis, but that there was no difference at the public market. They explain this finding as resting on the fact that the university community is small, and the effects are at least partially due to potential familiarity among the subjects.

THE FIRST ASSIGNMENT FOR STUDENTS

I have developed the first assignment for the human ethology course over several years of trial-and-error. This assignment is distributed to students approximately on the third week of the term, which necessitates that it begins with simple definitions and clear instructions. Students must complete this assignment, worth 12% of the final grade, to submit the second assignment, worth 18% of the final grade. There is pressure to select a meaningful topic, given the second assignment builds upon the success of the first assignment. Moreover, I have found that providing a loose general topic is key;

territoriality and/or personal space tend to be the easiest for students to examine, yet lead to a multitude of specific research topics. The assignment outline is as follows.

What is an ethogram? An ethogram (also called “Behavioral Inventory”) is a catalogue of behavior, where acts are grouped together according to similarity in performance. For example, one might list all the behaviors involving eye movement together, or perhaps movements with objects, or nonverbal body movements. An ethogram provides a way for ethologists to talk about behaviors without implying a meaning. For example, when I say, “the woman looked in love” what does that precisely mean? If instead I say, “the woman made prolonged eye contact greater than 45 seconds with the man she was sitting with, slowly put her hand on top of his hand and let it remain there for 6 minutes while they engaged in conversation with direct eye contact exceeding 10 second intervals, and touched her lips to his lips for 25 seconds before leaving the vicinity” the reader knows with certainty what the behavior actually was, and can decide if that is truly “looking in love.” If many individuals use the same “units” of behavior, they can make systematic comparisons.

For this assignment, you will be observing personal space or territoriality. You will be observing real people (and maybe artefacts of real people) in the world. Before attempting to code behavior for this assignment, you are strongly advised to practice by doing a few practice runs before doing so. Be inventive about getting this practice – use television shows, for example, or other nonintrusive means.

How to watch people. Although there is merit to studying one person for a long duration, as you will be able to then understand how behaviors become a sequence, that is not our goal. Our aim is to be able to generalize about some of the behaviors people perform, which means the best approach is to watch several individuals for a short period of time. There are a variety of ways in which you can watch behavior. For this assignment, I would like you to do what’s called “focal point sampling.” You may wish to do some extra reading (e.g., from other books, google) in which case it is also called “focal sampling,” “focal animal sampling,” and sometimes, “behavior sampling.” You must submit evidence of observing five people for this assignment.

Focal approach. With this method, you locate a single individual and follow her/his behavior for a standard time (or as long as possible up to that time). If a focal individual moves out of your view, then you start a new sequence of observations on a new focal individual. Selecting the focal animal can be systematic (e.g., you might just follow young animals, or only women or have predetermined the sequence of individuals, e.g. by alphabetical order of names) or randomized (e.g., select a random number from a table, then follow the nth individual encountered). It is key that you do it for a set amount of time and then move on to the next individual. It is not continuous observation.

During a focal study, you should record the following data as they occur:

- the context (e.g., date, time, location, weather, habitat, social context)
- the focal individual’s ID (if you can identify them uniquely, or just by #1, #2, etc)

- the sequence of behaviors
- the duration of behaviors (using a stopwatch)
- the immediate consequences (e.g., responses of other individuals, end of the task, etc.)

What you have to do is a two-step process. You need to determine what behaviors you are looking for and break these down into units. Then, you have to measure how often, in what order, and when people use these behaviors. This assignment is more challenging than it may appear, so be prepared to have some false starts before you get the kind of data that you want for the assignment.

Some notes about ethograms. Distinguish between what you see and what you interpret as consequences of the behavior. This step is tricky, as you will likely have assumptions about causal connections that follow from behavior. Define behaviors in terms of the person's actions, and not the perceived function. For example, if a squirrel buries an acorn, it should be described as digging, placing an acorn in the hole, and covering. It should not be described as "storing food." The latter is a perceived function - it may be very reasonable as a hypothesis, but it is an interpretation rather than a direct observation. One of the hardest lessons of human ethology (and animal behavior) is learning to avoid projection (either of adaptive function or anthropomorphism).

Note the context in which behaviors are performed. Both a mechanistic and adaptive approach require information about context. "Context" includes location (habitat type, proximity of major features of the habitat), other organisms (same or different species), physical conditions (time/temperature/light), previous behavior, and individual characteristics (male/female, nutritional state, reproductive state, size).

What to do with this assignment. You are to watch five or six people perform the same type of interpersonal activity, and create an ethogram of that activity. Ideally, you will practice a few times first by doing this for someone on television or a movie where you can rewind several times, and even slow it down if necessary. However, for your assignment, you must observe people in real-time in their natural environments. When you select a behavior, you want to make sure that it has several parts. Note that you might need to take notes and carefully observe various people perform the behavior for 15-30 minutes before you see something that you can document.

I am expecting no less than 12 units of behavior, and no more than 15 units of behavior. After you have selected your behavior(s), you need to break it down into action units and make a list. These units should be clear descriptions of the action that is performed. You should also keep track of how long each unit approximately lasts - although this is optional. In the end, you should submit a short description of what you did. Explain the behavior in an everyday way (e.g., as though you were telling your grandmother), and then describe how you collected your data. The data itself must be presented in two ways:

- 1) a verbal description of what each unit is
- 2) a table that outlines how frequently each subject performed each unit, with durations provided.

The above is a paraphrase of instructions to students. It should be noted that I often provide examples of ethograms from the literature to illustrate how the various components work together to arrive at meaningful research. Student feedback suggests that Moule and Fisher (2014) is helpful in particular; this article actually was an assignment initially submitted for this course and modified with increased data collection and analysis.

DISCUSSION

Instructing students on to how to perform direct observational research on humans using an ethological framework is relatively easy in my experience, provided one provides solid ideas of where to begin and clear instructions on how to perform actual observations. I have outlined three potential starting points in this paper: using surveys, media, and everyday observations. Informal feedback suggests that most students entered psychology in particular because they enjoyed “watching people” but after years of undergraduate training, they feel watching people is not highly important or scientific. Using one of these three starting points may serve as a way to reignite their interest and encourage them to become more of a “curious naturalist” (Tinbergen, 1984). I then provided the details on an assignment that I distribute to students, for which they must create units of behavior that are then analyzed. There are presumably numerous ways that one could approach instructing students to create accurate observations, and the suggestions here are only one such approach. In an era when human ethology is often excluded from curriculum, workshops and articles based on such workshops are greatly needed. My hope is that the material I have covered provides some guidance to instructors who seek ways to encourage their students to perform human ethological research. It is key that those who teach human ethology support other instructors who are considering adding an observational component to a class, or who may want to propose a human ethology course at their institution.

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