Appendix F. Psychology and Social Sciences Modules

Psychological and Social Sciences

Introduction
Welcome to the Psychological and Social Sciences portion of the Research Integrity in International Collaborative Contexts course. Please read this brief background as to the importance of this topic before exploring the four areas of content.

Collaborative Research

Conflicts of Interest

Publication Practices and Responsible Authorship

Data Management: Access, Sharing, and Exchange

Additional Resources
Introduction to the Psychological and Social Sciences Module

Introduction

There is renewed interest in the social sciences concerning ethical research, especially in the area of international research collaborations. With advances in Internet-based research applications, social media, and sophisticated data collection methods, the opportunities for international collaboration are increasing accessible. Recent reports confirm that international collaboration in psychology has increased in the last three decades (Kliegl & Bates, 2011). However, this trend introduces a variety of ethical issues.

In 2011, a prominent Dutch social psychologist gained international attention when it was discovered that he engaged in fraudulent research that not only spanned a decade of work, but affected dozens of graduate students and international collaborators, and led to a great deal of negative commentary about the state of research in psychology. Although this might be perceived as an extreme case of fraud, empirical studies suggest that academic misconduct, or questionable research practices, in psychology (John, Loewenstein, & Prelec, 2012; Simmons, Nelson, & Simonshon, 2012) and other fields are unfortunately very high (Fang, Steen, & Casadevall, 2012; Rhoades & Eisenberger, 2002) and observed at varying degrees in developed and developing nations (Ana, Koehlmoos, Smith, & Yan, 2013). Subsequent public and professional questioning of the methods, ethics, and importance of psychological research has increased the need for proper and thorough training in research integrity.

The publicity surrounding this case prompted communications between national leadership for more transparent, team-oriented, and interdisciplinary research partnerships. Innovative changes in how research is conducted and disseminated are now prominently featured among the field’s top professional organizations, including the Association for Psychological Science’s new guidelines for open and replicable research (Association for Psychological Science, 2013). The Association for Psychological Science (APS) implemented a new publication model in their flagship journal, Psychological Science, that encourages scientists to publically post research study proposals with hypotheses, invitations for independent replication by other labs, and public access to data and programming code. According to APS, this new model provides numerous benefits that will ultimately reduce the reasons for and instances of misconduct, including the ability to publish regardless of the outcome, more transparency about methodology and sharing intellectual resources, and engaging multiple labs, which would encourage international collaboration. These changes would also assist researchers involved with psychological research to move toward best practices of reporting statistical conclusions that avert the shortcomings of traditional null-hypothesis significance testing and overreliance on p values (e.g., effect sizes).
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The Importance of Case Studies
Violations to academic research integrity are easily condemned after the fact, yet the people are often operating without enough information, making assumptions about their own and others' behaviors, and are guided by motives of self-protection and self-enhancement, leading to serious errors in their research.

To provide real-life examples of violations of academic integrity in psychological research, the modules include a few well-known and recent cases. The modules highlight the level of academic integrity that is violated and how it was discovered, consequences of this behavior for psychological and social sciences more generally, and suggestions to remedy future cases. By reading about real-world cases, you will see the complexity of collaborative international research, and how cultural and social differences may increase the already complex research relationship.
Collaborative Research

Goals of the Collaborative Research Content/Sub-Module
After reviewing the information in this section, you should be able to:

- Contrast the new emphases of "team science" and "translational science"
- Contrast the skills needed in these approaches with the more traditional individualistic models of research
- Understand the Informed Consent and Participant Privacy and Confidentiality forms/guidelines and the skills needed for successful implementation of these guidelines when engaging in international collaboration
- Understand the recommended guidelines for psychologists working internationally and where to find international ethical codes

At the end of the module, you will review a case study and complete an exercise to demonstrate your understanding of this material.

Collaborative Research in the Social Sciences
Research often requires working collaboratively across different cultures, languages, and theoretical frameworks in an international setting. Collaborative research is becoming increasingly more common in social sciences. International collaborative research in the social sciences will most likely benefit from the inclusion of multiple partners especially from the region/location/population being studied to allow for a more comprehensive understanding of the cultural and local issues that may impact the research questions as well as the findings.

Team Science
An important development in health sciences research, including psychology and many other social sciences, is the "team science" approach to research. Team science is defined as large-scale, team-based research that addresses complex and multi-faceted problems that require cross-disciplinary collaboration (Disis & Slattery, 2010). Team science initiatives promote collaborative and cross-disciplinary approaches to answering research questions about particular phenomena. This approach is highly endorsed by funding agencies, including the National Institutes of Health (NIH), the National Cancer Institute (NCI), and the National Science Foundation (NSF) (Bennett, Gadlin, & Levine-Finley, 2010). Universities and funding agencies must identify key research areas that are mutually beneficial to all involved parties and then pursue them using the team science approach.

Cross-disciplinary collaboration requires working with researchers across different disciplines to meet research goals. There are three levels of cross-disciplinary science (Rosenfield, 1992):

1. Multi-disciplinary
2. Inter-disciplinary
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3. Trans-Disciplinary

Multi-disciplinary science involves researchers working in parallel or sequentially to address a common problem, while inter-disciplinary science describes researchers from different disciplines working jointly, but from discipline-specific perspectives to address a common problem. Trans-disciplinary science involves researchers from different disciplines working together using a shared conceptual framework drawn from disciplinary-specific theories, concepts, and approaches to address common problems.

To be successful with the trans-disciplinary approach in an international setting, researchers must respectfully address and resolve ideas, help translate when there are differences in concepts, methodologies, and frameworks, speak candidly and sensitively with members from different cultural backgrounds, and embrace the importance of different opinions, ideas, and experiences to achieve important scientific discoveries.

A team science approach is especially relevant in research that is concerned with mental health care issues, including comparative-effectiveness research, health disparities research, and other psychologically-related research investigating human well-being and functioning.

Translational Research

Team science is often discussed within the context of translational research. Translational research refers to a set of stages associated with moving research discoveries toward improved human health (Michigan Institute for Clinical & Health Research, 2014). There are four stages associated with translational research which include:

- **Stage 1** links basic scientific discovery to clinical insights and yields potential for intervention
- **Stage 2** links clinical insights into implications for practice by testing new interventions (i.e., treatment of psychological issues) under controlled environments
- **Stage 3** explores ways of applying recommendations or guidelines in general practice and provides knowledge about how interventions work in real-world settings
- **Stage 4** studies the factors and interventions that influence the health of populations and seeks to improve global health.

Combining Team and Translational Science: The Benefits

The intersection between team science and translational science combines engineering and the physical, natural, and life sciences with social and health sciences. In areas of health and medicine, research involving multi-disciplinary and cross-cultural teams often increases the rate of success and the speed of translation of applicable findings from the laboratory to the general public. Developing a skillset that combines team, translational, and individualized scientific approaches with an understanding of complex cultural contexts and differences allows researchers to cross cultural and international boundaries.
Research Ethics and Integrity in Psychology

Psychologists and social scientists must develop skills and the awareness to navigate research situations where expectations about data sharing, authorship, and research guidelines and ethics may differ across countries and cultural settings. Research integrity in collaborative and international settings require effective oral and written communication to avoid and resolve potential conflicts.

Psychologists engaging in psychological research are required to adhere to several ethical principles and practices. The ethical practices are outlined by the American Psychological Association (APA) and should be well understood by all psychology graduate students and faculty. Social scientists in other disciplines should consult their respective national organizations' ethical codes for guidelines and rules specific to their discipline. These ethical principles do not change when engaging in cross-cultural and international research, but the principles should be adhered to in a culturally sensitive manner that addresses social and cultural differences. Researchers can avoid and resolve ethical dilemmas by understanding their ethical obligations and the resources available to them. Two important resources for psychologists are:

1. **The Belmont Report**: Released by the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research in 1979, the report provides the ethical framework and regulations for research involving human participants. This report serves as the basis for human participant protection legislation.
2. The **APA Ethical Code** offers general principles and specific guidelines for research in Psychology.

**Additional Codes of Ethics and Guidelines**

- American Psychiatric Association Code of Ethics
- American Medical Association Code of Medical Ethics
- Public Health Leadership Society Principles of the Ethical Practice of Public Health
- Declaration of Helsinki (DoH)
- International Federation of Social Workers Statement of Ethical Principles (IFSW)
- World Health Organization Ethics (WHO)

Confidentiality and Privacy and Informed Consent are both important aspects of conducting ethical research.

**Confidentiality and Privacy**

All researchers must adhere to the participants' rights to confidentiality and privacy. Privacy protection differ according to the research population under study (American Psychological Association, 2000). In cross-cultural collaborations, researchers must discuss participant confidentiality and privacy with cultural sensitivity while addressing differing cultural perspectives. Researchers must consider that what works in one research setting may not be appropriate in another, different research setting. When working with individuals from different countries or cultures, researchers must understand the cultural and social context to address privacy and confidentiality. This may require consultation with group leaders or other researchers familiar with that population and their culture.

During cross-cultural research, remember to:
1. **Discuss the limits of confidentiality:** Discuss with collaborators and cultural leaders specific plans about how participant data will be gathered and used (e.g., interviews, case studies, photos, whether audio and video equipment will be used, etc.) and provide this information to the participants.

2. **Know the law:** Familiarize yourself with any state, federal, national, regional, and international laws from all participating countries that apply to your research and data collection. In the United States, The Education Act of 1994 prohibits asking children about religion, sex or family life without parental permission (U.S. Food and Drug Administration, 2009). While most states in the USA only require licensed psychologists to comply with mandatory reporting laws, some laws also require researchers to report abuse and neglect. Researchers must plan for situations in which they may learn of such reportable offenses and how they must be reported. Generally, research psychologists can consult with a clinician or their institution's legal department to decide the best course of action. Be sure to consider the cross-cultural implications of these strategies (see Leach & Oakland, 2010, for a cross-cultural perspective).

3. **Take practical security measures:** Regardless of where the data is collected, always ensure confidential records are stored in a secure area with limited access and consider removing any identifying information. Be aware of situations where confidentiality could inadvertently be breached, such as having confidential conversations in a non-soundproof room or including participants' names on bills paid by accounting departments. Consider carefully how different practices at different institutions or countries could impact these security measures.

4. **Think about data sharing before the research begins:** If data will be shared among different researchers in different countries or institutions, this information should be included in the participant consent process. In some cases, participants may need to grant permission for their data to be shared with researchers working in other countries or for other national or international institutions or agencies. Researchers should use established guidelines and techniques to protect confidentiality, including coding data to hide identities, when sharing data.

5. **Understand the limits of the Internet:** Conducting research online is appealing because it offers the chance to collect data from around the world. Researchers should discuss issues of confidentiality with their research collaborators when collecting, storing, and sharing data across the World Wide Web. Different countries may have different requirements of researchers collecting data via the Internet and rules for exchanging confidential information electronically.

### Informed Consent

In cross-cultural research collaborations, data collection may occur in one or more settings. The **Informed Consent** process involves three key features: (1) disclosing to potential research subjects information needed to make an informed decision; (2) facilitating the understanding of what has been disclosed; and (3) promoting the voluntariness of the decision about whether or not to participate in the research. Informed consent must be legally effective and prospectively obtained (Health and Human Services, 2014).

According to the APA, Informed Consent is one of the most important aspects of conducting research, and yet in cross-cultural collaborations not all researchers have direct oversight or knowledge of how these procedures are followed (See Human Subject Research and Developing Countries: Beneficence...
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and Protection of Human Rights by Julia Brylinski). One important ethical consideration when engaging in cross-cultural collaborative research is to familiarize yourself with informed consent practices in your country and those of your collaborators and then communicate these practices to your collaborators.

The consent process ensures that individuals are voluntarily participating in the research with full knowledge of the relevant risks and benefits. Federal standards dictate that participants must have access to all information that might reasonably influence their willingness to participate in a written or spoken language that they can understand and comprehend. How potential research participants understand and comprehend the nature of the research project may vary depending on cultural norms and practices.

By way of review, the APA Ethical Code requires that psychologists who conduct research should inform participants about:

1. Purpose of the research, expected duration and procedures
2. Participants' rights to decline to participate and to withdraw from the research once it has started, as well as the anticipated consequences of doing so
3. Reasonably foreseeable factors that may influence their willingness to participate, such as potential risks, discomfort, or adverse effects
4. Any prospective research benefits
5. Limits of confidentiality, such as data coding, disposal, sharing and archiving, and instances when confidentiality must be broken
6. Incentives for participation
7. Contact information for any questions or concerns of the participants
8. Discuss the likelihood, magnitude, and duration of harm or benefit of participation, emphasizing that involvement is voluntary and discussing treatment alternatives, if relevant to the research
9. For studies of experimental treatment research, participants must be informed about the experimental nature of the treatment, services that will or will not be available to the control groups, how participants will be assigned to treatments and control groups, available treatment alternatives, and compensation or monetary costs of participation
10. If research participants or clients are not competent to evaluate the risks and benefits of participation themselves—for example, minors or people with cognitive disabilities—then the person who is granting permission must have access to that same information

Informed Consent is not required in only two situations (APA Ethics Code)

1. When permitted by law or federal or institutional regulations, or
2. When the research would not reasonably be expected to distress or harm participants and involves one of the following:
   a. The study of normal educational practices, curricula, or classroom management methods conducted in educational settings
   b. Anonymous questionnaires, naturalistic observations, or archival research for which disclosure of responses would not place participants at risk of criminal or civil liability or damage their financial standing, employability or reputation, and for which confidentiality is protected
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c. The study of factors related to job or organization effectiveness conducted in organizational settings for which there is no risk to participants' employability, and confidentiality is protected

If psychologists are precluded from obtaining full consent at the beginning—for example, if the protocol includes deception, recording spontaneous behavior, or the use of a confederate—they should offer a full debriefing after the data collection and provide people with an opportunity to reiterate their consent.

Psychologists should make reasonable efforts to avoid offering "excessive or inappropriate financial or other inducements for research participation when such inducements are likely to coerce participation" (American Psychological Association, 2014).

Informed Consent: Issues in cross-cultural research

Challenges may arise when gathering informed consent from participants in countries outside the United States. Since it is important to achieve sampling equivalence, what can researchers do to increase the informed consent from international participants? The cross-cultural psychologist David Matsumoto highlights the problem:

"In the United States, it is impossible to conduct research involving human participants without first receiving approval from an institutional review board (IRB), and most IRB guidelines require that researchers obtain consent from the participants before collecting data. These procedures, however, do not exist in most countries outside the United States. In fact, in most places outside the United States, not only is submitting a research proposal for review unnecessary but obtaining consent from human participants is unnecessary, as well. This raises ethical dilemmas for researchers: Do we obtain consent from participants in cultures in which it is not necessary to obtain consent, or even frowned upon? Will all participants understand the concept of "consent" in the same way? What does "consent" mean in different cultures and who is authorized to give and obtain "consent"? Furthermore, if we do obtain consent from our participants, how do we obtain it? Many participants in many cultures will likely view consent documents with skepticism or fear. Will they understand such a process and feel comfortable about giving consent?" (Matsumoto & Jones, 2010, pp. 329-330).

Matsumoto and Jones also provide a few suggestions:

"Regardless of whether obtaining consent is necessary or not, we believe that researchers should always strive to ensure that (a) informed consent is obtained and understood by the participant, (b) invasion of privacy is minimized, and (c) consent will be obtained only in a manner that minimizes coercion or undue influence. How can this process be done in a culturally competent manner? In our experience, many of the same consent procedures can be used around the world, if delivered in a skillful and culturally competent manner by the research team. This manner involves the truthful and honest description of the procedures of the study, its risks and benefits, combined with a genuine interest in the participant and his/her welfare. If written consent is required, forms need to be translated in a competent and culturally appropriate manner. Involving cultural informants as collaborators or experimenters can help ensure that researchers are making the most diligent of efforts in this difficult ethical area of research" (Matsumoto & Jones, 2010, pp. 328).
Guidelines for Psychologists Working Internationally

Leach & Oakland (2010) argue that a common ethical dilemma exists for psychologists that work in foreign countries because those countries do not have ethical codes that govern psychologists' work. These authors provide guidelines to help psychologists working under such conditions. Psychological ethic codes developed by more than 50 different countries are different in their structure, content, and the degree to which standards are emphasized. These ethical codes also differ with regard to their enforceability (e.g., "standards" are more likely to be enforced as compared to "guidelines").

The authors also note in their paper that psychologists working outside their home country of the United States must be mindful of cultural differences, including language, religion, cultural and social values, prevailing racial/ethnic, economic, and social conditions, professional and gender role expectations, and the knowledge of the discipline and practices in psychology (Leach and Oakland, 2010).

Suggestions for working in another country include (Leach and Oakland, 2010):

1. Before working in a host country, acquire knowledge about the country. Consult Wikipedia and travel books for a country description. The U.S. Department of State also provides descriptions of many countries (U.S. Department of State, n.d.). The Central Intelligence Agency provides information about countries, including those in which travel and work may be more dangerous (Central Intelligence Agency, n.d.).

2. With this background information, psychologists can acquire knowledge about the nature of psychological practices in the host country.
   a. The Handbook of International Psychology (Stevens & Wedding, 2004) provides a review of the status of psychology in 27 countries.
   b. International psychology is discussed in International Psychology: Views from Around the World (Sexton & Hogan, 1992).
   c. The Handbook of International School Psychology (Jimerson, Oakland, & Farrell, 2007) provides an introduction to school psychology in 44 countries.

3. Psychologists should adhere to ethical codes established by national professional associations in their native country and the host country. Conduct an Internet search using the name of the professional association in the host country. Download and study the ethical code from the host country if one exists.

4. Psychologists who learn that psychological practices in the host country are not governed by an ethical code should still maintain their obligation to act ethically. The relevance of their national professional association's ethical code should be discussed with their collaborators.

5. Psychologists should review ethical codes from the International Test Commission (International Test Commission, 2008), the International Classification of Functioning, Disability and Health (World Health Organization, 2014), as well as the Universal Declaration of Ethical Principles for Psychologists (International Union of Psychological Science, 2013) for their relevance. The scope of the latter document is broader and thus possibly more relevant than the other resources.

6. A country's moral principles and values help form the foundation for the profession's ethical code, and researchers should elicit information about prevailing moral principles and values important to the host country and that guide the work of psychologists there. This discussion
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may include a review of the relevance of The Universal Declaration of Human Rights (United Nations, 2014).

7. Psychologists working in a host country may be asked to provide services that are higher than those of their hosts and colleagues yet beyond their areas of competence. Psychologists should respectively decline such requests when the work lies outside their area of expertise and competence. Those engaged in research are advised to consult Byrne, Oakland, Leong, van de Vijver, Hambleton, Cheung, & Bartram (2009) for a review of methodological and ethical aspects important to cross-national research and to determine their level of competence to engage in such work.

8. Psychologists should adhere to legal codes that govern their personal and professional behaviors. Summaries of these codes for each country are not available. Thus, psychologists are encouraged to consult with knowledgeable colleagues on these issues before arriving in the host country. Remain mindful of the provisions of the Universal Copyright Convention (UNESCO, 2014) and the Berne Convention (World Intellectual Property Organization, n.d.), as well as other international laws and treaties.

Case Study

Dr. Johnson, an associate professor of psychology at Northern Arizona University, has published an article in which he proposed that perceived mattering to same-sex friends explains the relationship between friendship quality and happiness. She supported her model in an American sample and will test the generalizability of her model in a cross-cultural study. Specifically, she will test her model in Malaysia and Ghana. She learns through e-mail exchanges with her colleagues and collaborators that there is no IRB-equivalent institutions in these nations and informed consents are not deemed as necessary. What should Dr. Johnson do and how could she proceed with her study?

Exercise

What should you do when working in a host country that does not have an ethical code? (Refer to the guidelines in Leach and Oakland, 2010).
Conflicts of Interest

Goals
After reviewing the information in this section, you should be able to:

- Understand the definition of conflict of interest and the different types
- Understand the importance of conflict of interest and how it might hinder scientific progress and harm objectivity
- Explain ways to address conflict of interest

At the end of the module, you will review two case studies and complete an exercise to demonstrate your understanding of this material.

Conflicts of Interest in the Social Sciences
Conflicts of interest are of concern in the social sciences. The public and consumers of research have the right to expect that research findings are not influenced by conflict of interest of the researcher or the methods used in the study. Social science research is also susceptible to hidden or uncovered conflicts of interest, including biases, which can further complicate the interpretation of results. It is necessary to understand how conflicts of interest could impact the research project and the results reported. This section will discuss the types of conflicts of interests that are endemic to social sciences, especially in international research, and how they can best be avoided.

Conflict of Interest
Imagine the following scenario:

You are the director of the International Student and Scholar Center at a university and are looking for a training program for your employees to promote their intercultural communication skills. In your search, you discover a recent paper comparing the short- and long-term effectiveness of three intercultural sensitivity and communication training programs. The authors reported findings claiming that one program was more effective than the others. You decided to contact the company and use university resources to purchase a training program for your employees. You were not very pleased with the immediate or later intercultural skills displayed by your employees. A few years later, you learned that the authors of the paper received funding from the owners of the training program and have been providing consulting services to the training program. You also learned that the authors withheld a few studies that failed to support their original conclusion regarding the superiority of this program over others. Would you feel deceived? Would this influence your trust of the field in general? How confident will you be when choosing a new training program for your employees?

The general issue surrounding the case above is conflict of interest. Scientists are responsible for maintaining objectivity in their research. However, various types and levels of conflict of interest might
decrease objectivity in scientific inquiry. There are serious consequences when conflicts of interest are not fully disclosed and addressed.

Conflict of Interest: What is it?
There are several definitions of conflict of interest. The American Psychological Association (APA) defines conflict of interest as, “... when a researcher has to contend with two or more competing concerns, such as honestly reporting research results versus making a profit, achieving publication or retaining outside funding” (American Psychological Association, 2014). Thompson (1993) highlights the dynamic influence between two types of interest, "... a set of conditions in which professional judgment concerning a primary interest (such as a patient's welfare or the validity of research) tends to be unduly influenced by a secondary interest (such as financial gain)."

There are two general types of conflict of interest: financial and nonfinancial (Antonuccio, Danton, & McClanahan, 2003; Greenwald, Poehlman, Uhlmann, & Banaji, 2009; Levinsky, 2002). Financial conflicts of interest include cases in which a researcher serves as a consultant for a company or receives funding from the industry to conduct research. Nonfinancial conflicts of interest include cases where a researcher’s political, religious, or theoretical beliefs influence publishing or funding decisions. Although both of types are serious, major funding organizations and other scholarly research focus primarily on financial conflicts of interest.

All conflicts of interests “are not inherently negative” (American Psychological Association, 2014). It is acceptable, and at times encouraged, by universities to develop entrepreneurial allegiances with different types of industry. The Bayh-Dole Act (1980) facilitated this process and also resulted in serious concerns regarding conflict of interest. There were several attempts to regulate the Bayh-Dole Act process, including:

- American Psychological Association: Conflict of Interests and Commitments
- National Institutes of Health: Financial Conflict of Interest Policy
- National Institutes of Health: Objectivity in Research

How conflicts of interest are handled is far more important than the conflict itself.

Guidelines
Institutions, government agencies, and funding agencies all have guidelines for identifying and disclosing conflicts of interest. Always review your professional association’s and conflict of interest regulations or guidelines before beginning research. Here are a few examples of guidelines:

Conflict of Interest Guidelines
- NIH Conflicts of Interest
- Ethical Guidelines for Managing Conflicts of Interest in Health Services Research
- ABOR Conflict of Interest Policy
- WMA Statement on Conflict of Interest
- GRU Individual Conflict of interest Policy
Is Conflict of Interest Really a Serious Concern?

A conflict of interest is a serious concern if it is not properly addressed and mediated. Here are a few examples that received national and international attention:

- **FDA Panels**
- **The case of Dr. P. Trey Sunderland**
- **Pfizer accused of testing new drug without ethical approval**
- **Examples of biased reporting in clinical research**

After reading these examples, do you think conflict of interest is a serious concern in social science research?

Addressing Conflicts of Interest

Since conflict of interest is a serious issue that could harm public trust in science and hinder scientific progress, it is essential to address this issue at various levels. Antonuccio et al. (2003) describes the need to address this problem in psychology and provides an important list of guidelines. Greenwald (2009) provided valuable suggestions to the scientific community on the importance of different roles of researchers, editors, and reviewers. In addition to federal guidelines and regulations, many publishers and journals in different fields require a Declaration of Conflict of Interest Form to be signed by researchers (Ancker and Flanagan, 2007). For instance, APA journals require authors whose manuscripts have been accepted for publication to sign a full Disclosure of Interests document (American Psychological Association, 2014).

Case Studies

**Case Study #1**

You are celebrating your publication in a top journal in which you cross-culturally validated the effectiveness of a lie detection training program with various experiments in the U.S. and in France. A few months later, you learn that your collaborators in France were approached by the owner of the training program and received funding to conduct these experiments. You also discover that your collaborators did not inform you about the null findings they obtained in a few experiments. What do you do?

**Case Study #2**

Imagine that you are invited to a review a manuscript submitted for publication in a scientific journal. Although this is a blind review where the author identity is removed, you realize that it is written by one of your colleagues. As you read the paper, you have concerns about the study design. The findings reported in the manuscript might be very helpful, if published, to strengthen the rationale for your grant proposal. What do you do?
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Exercise
Find "Full Disclosure of Interests" documents from different journals and from different fields and compare them using the following criteria:

- Is there a definition of conflict of interest?
- Are there any examples?
- Do they address financial and non-financial types of conflicts?
Publication Practices and Responsible Authorship

Goals
After reviewing the information in this section, you should be able to:

- Define plagiarism and explain how it may be viewed within different research cultures
- Identify potential differences in national or cultural norms regarding authorship
- Understand the underlying causes for authorship misconduct, including fraud or suspected fraud
- Make recommendations for best practices in authorship
- Understand recent trends and new guidelines regarding authorship

At the end of the module, you will review a case study and complete an exercise to demonstrate your understanding of this material.

Publication Practices and Responsible Authorship in the Social Sciences
Publication practices and assigning authorship in the social sciences can be fraught with problems if they are not addressed openly and fully at the outset of a collaborative research project. These issues become increasingly more complex in international contexts where multiple researchers and thus authors with different cultural and social practices contribute to the research and publication process. This section will cover topics related to publication practices and responsible authorship in international contexts and how they can best be addressed when assigning authorship reflective of their contributions.

Plagiarism
Plagiarism is a form of misconduct and well-known to U.S. students and researchers in the social sciences. Plagiarism is the appropriation of another person’s ideas, processes, results, or words without giving appropriate credit (Steneck, 2007).

When engaging in collaborative research with international colleagues, all parties should explain and discuss that constitutes plagiarism in each country. In a recent review of 2,047 biomedical and life science research publications through May of 2012, nearly two thirds of all retractions were because of misconduct, including fraud or suspected fraud (Fang, Steen, & Casadevall, 2012). Plagiarism and duplicate publication exists in countries that do not have long research histories (e.g., China, India, and Turkey), and such misconduct is often found in low-impact journals. One reason for these types of misconduct may come from the pressure to publish in English journals. Please review the plagiarism case of the Turkish physicists below:
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- Turkish Physicists Face Accusations of Plagiarism
- Bechhoefer’s Response

Ana, Koehlmoos, Smith, and Yan (2013) examined cases where Brazilian researchers regarded copying text as not very serious and because of the difficulty of writing in English scientific journals. Another form of misconduct comes in the form of "self-plagiarism," or the covert reuse of already published data or one's own portion of text that has already been published (Roig 2010).

Please review the NAU Student Handbook and the Academic Integrity Policy for more information on how NAU defines and deals with plagiarism.

Video Resources
- A Primer on Plagiarism

Responsible Authorship and Author Order

Common issues of authorship that arise in research publications include determining the order authors’ names and the significance of the different contributions to the publication. These issues are increasingly complex in team science when there many authors and a division of responsibility exists. Although there is widespread agreement within the American Psychological Association Ethical Code that authorship order should be awarded on the basis of intellectual contribution, graduate students in psychology may have difficulties addressing this topic with research faculty and advisors (Bartle, Fink, & Hayes, 2000). The activities considered most worthy of author credit include developing the idea for the study and writing the paper, followed by designing the study and analyzing the data. Data collection and entry are viewed as relatively unimportant and more worthy of a footnote.

Osborne & Holland (2009) present an overview of a survey on how authorship and authorship order is determined in scientific publications. As research becomes more complex and interdisciplinary with multiple authors and the “team science” approach, specific authorship guidelines and procedures are necessary. International collaborations add a level of complexity with different cultural norms and practices surrounding these issues.

Status and power, two important variables in all cultures, can play a large role in determining authorship and order. Authorship is often given to individuals because of their position or title, although they did not contribute to the research, while students who did contribute to the research do not receive credit because of their position. In the U.S., the common practice is not to account for seniority when establishing authorship, but in some international countries, authorship addresses seniority, with those in higher positions within agencies and institution receiving first authorship without contributing to the research or publication. In psychology and other social sciences, first authorship is often seen as more prestigious, while in other disciplines authorship is listed alphabetically, which can disadvantage researchers with names at the end of the alphabet, as articles with more than 5 authors are truncated for publication.

In their review, Osborne & Holland (2009) summarize a "substantial" contribution, which could include some combination of one or more of the following:

1. Conception or design
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2. Data collection and processing
3. Analysis and interpretation of the data, and/or
4. Writing substantial sections of the paper

Research Study Contracts
To avoid authorship issues, researchers should discuss how contributions to the research and publication will be addressed in authorship of the submitted publication prior to starting the research project. In student-faculty collaborations, the faculty member is responsible for initiating the authorship conversation, but the student should address the topic if the faculty advisor does not. A research study contract can clarify roles and responsibilities in research. The research study contract includes a list of all of the tasks included in a research project, including literature review, hypothesis generation, research design, Institutional Review Board paperwork and approval, data collection, data analysis, and writing. Researchers then use a checklist to facilitate a discussion of each task and who is responsible for each task. Other examples of forms used to establish author order and research responsibilities include:

- Point and Methods Assignment for Activities Associated with Research Manuscript/Poster
- Contract Regarding Publication Intent

Although you may create a research study contract and determine authorship early in the research, remember there are legitimate reasons why authorship might change throughout the project. Collaborators have ongoing discussions about the project and the research contract should aspects of the project change. For example, a student who agreed to be second author may take the lead on a substantial paper revision and his/her contributions may warrant first-authorship. Alternatively, if a member of the team drops out, assignments might shift and a new discussion about responsibility and authorship is necessary.

International Collaboration and Authorship
When conducting research with international or interdisciplinary collaborators, it is important to consider that different cultures and disciplines may have different authorship guidelines. Researchers should review their professional organizations’ recommendations and guidelines regarding responsible authorship and publication practices. Psychologists should review the American Psychologists Association's recommendations. When reviewing the guidelines and recommendations, consider how these practices may be affected by physical distance and cultural differences when collaborating with international partners.

The following real-life example from an American psychologist will help you better understand the importance of the authorship issue.

The Growing Problem of Plagiarism and a Possible Solution
Increasingly, the problem of plagiarism is seen as complex and not merely the result of poor ethics, but rather because of cultural and training differences in the use of others’ intellectual ideas. Furthermore,
plagiarism, or at least the Western conceptualizations of plagiarism, is increasing, and researchers and students from non-Western cultures are often depicted as "perpetrators" of a "crime against the academic community of enlightened academic scholars" (Leask, 2007). Leask argues that rather than seeing plagiarism as a war that needs to be won, Westerners should try to understand plagiarism as culturally-constructed and through recognizing these cultural differences and concepts of plagiarism, plagiarism can be reduced.

Case Studies

Please read the following examples taken from a real-world example and consider how you might address plagiarism that might be the result of different expectations and standards regarding plagiarism.

Example 1
A research psychologist from a U.S. university was editing a volume of research articles on a particular topic. The editor solicited and received chapters from researchers from around the world. From one set of authors, the editor received a manuscript that contained many examples of plagiarism.

If you were the editor, what would your response be? What steps would you take and why?

Example 2
Adam Sloan is a graduate student who received a scholarship to travel to a South American country to conduct a research study examining the association between self-esteem, same-sex friendship, and academic achievement in elementary school children. Adam operating out of a well-known university’s Psychology Department, a department known to have highly productive researchers. Adam was paired with a newly hired assistant professor from that university, Juan, who was under considerable pressure to conduct research and publish. Adam and Juan quickly hit it off and decided that they would mutually benefit from working on a study together. Given Adam’s unfamiliarity with the language and culture, he believed there would be many advantages to collaborating with Juan. Juan would be responsible for finding and working with local school administrators and helping with questionnaire translation while Adam, as the principal investigator, would be responsible for the study design, materials, and implementation.

The study was completed, data collected, and Adam returned to the United States to finish writing the manuscript and submit it for publication. Adam and Juan worked together for another year on the paper, communicating through email and by phone. They stored different versions of the paper in a web-based folder that both Adam and Juan had access to. Adam submitted the paper, with himself as first author and Juan as second author. The paper was eventually published.

About two years later, Adam was asked to review a theoretical paper for another journal on the importance of self-esteem and same-sex friendships in elementary school children. Adam was unpleasantly surprised to read the paper for review contained so many of his ideas from his own earlier work, and several of the paragraphs appeared to be exact copies of the paper he had just published with Juan. Further, these theoretical paragraphs were about Adam’s main research area and reflected Adam’s ideas, yet there was no reference to Adam or his previously published work on the topic. It appeared that whoever wrote the article was presenting Adam’s ideas as his or her own. Adam had
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even coined the term in his earlier work to describe one of the key sets of relationships that predicted academic success in students and the unknown author used the term liberally throughout his paper and in the title of the paper.

Given what you've read and learned in this module, what factors may have led to this situation? In retrospect, could Adam have done anything to prevent this type of plagiarism from occurring? Are there any steps that Adam should take as a reviewer?

**Exercise**

In response to a hypothetical research situation, construct a letter clarifying authorship and publication expectations in a culturally sensitive manner. Describe the steps a researcher would take to insure responsible authorship order in a situation where there are multiple authors.
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Data Management: Access, Sharing, and Exchange

Goals
After reviewing the information in this section, you should be able to:

- Understand the basics elements of data management and the growing challenges of big data in data management and archiving
- Describe issues surrounding data ownership and possible solutions
- Recognize how international collaborations factor into data ownership and management

At the end of the module, you will review a case study and complete an exercise to demonstrate your understanding of this material.

Data Management in the Social Sciences
In the psychological and social sciences, issues of data management (data acquisition, protection, archiving, and sharing) are increasingly important. Innovative ways to manage data advance the reliability, reproducibility, and validity of empirical research to align research values with academic scholarship. Examples of scholarly data management include systematic disclosure of methods and results, pre-analysis plans, and open access data and materials.

Large databases containing publicly accessible data are now available and in use by individuals who played no role in collecting the data. Researchers can post large data sets online, widely disseminating the data without the traditional peer-review or quality control procedures used by large, public databases. This rapid dissemination provides tremendous opportunities for scientific advancement, but new mechanisms for ensuring data quality remain necessary.

International differences in data collection and management policies can complicate data management, particularly in the era of "big data," and the opportunities it presents for synthesis and understanding across international boundaries. Big data refers to any collection of data sets so large and complex that it becomes difficult to process using on-hand data management tools or traditional data processing applications.

Data Management Plan: Collecting, Recording, and Maintaining Data
When collecting and recording data, the researcher is responsible for establishing a data management plan that protects the research participants and ensures the data will not be used in an unauthorized manner. Researchers should determine how funding sources, employment agreements, and agreements with collaborators affect the different stages of data management, including ownership,
storage, and sharing the data. This includes establishing by whom and how the data will be stored, preserved, shared, or disposed of in the long term. Researchers should also consider any possible uses of collected data and materials when obtaining permission and consent from research participants.

Considerations when creating a data management plan (UCONN, 2014):

- **Data description**
  - What kind of data will be produced?
  - Is it live or ready to be archived?
  - What file formats will be used?

- **Metadata**
  - How will you describe the data to make it discoverable?
  - What documentation is needed to make the data useable?
  - What metadata standards will you use?

- **Access and Reuse**
  - Have you established a timeline for when the data will be available?
  - Are there confidentiality issues?
  - Do any regulations apply to the data (for example HIPAA)?
  - Should the data be restricted or embargoed for intellectual property reasons?
  - Do you have the right to share the data if it is not produced by you?
  - Are there any copyrighted materials associated with the data?
  - Will the data be licensed?
  - Who will be able to access the data?
  - Who may be interested in your data in the future and what might it be used for?
  - Are there any reasons not to allow re-use?

- **Archiving and Preservation**
  - How long should your data be kept?
  - Have you identified a repository or archive in which to deposit your data?
  - How will the data be prepared for long term preservation (if needed.)
  - Will funding or other institutional commitments be required for preservation?
  - What are the procedures for your intended long term data location for preservation and backup?
  - How will documentation and curation responsibilities be transferred from one entity to another?

- **Transition or Termination of the Data Collection**
  - How long will your data be active?
  - Who will manage it?
  - Do you have a retention schedule or a schedule to destroy your data at some point?
  - Is there a need to migrate or transition your data to another media or structure in the future?
  - Will data be destroyed after a specific time period? If so:
    - Are there ethical or legal obligations for the secure removal of data after a specific time period?
    - How do you plan to destroy the data?

Social science researchers must also inform their participants of the data management plan, including the collection, use, archival, and possible exchange or sharing of the research records. Open
communication concerning the use and possible reuse and exchange of the data contributes to a good relationship with the research participants.

While developing your data management plan, be sure to discuss plagiarism, fabrication, falsification, and misrepresentation of the information or its sources with your colleagues. Always ensure the confidentiality, protection, and security of all notes, recordings, samples, and other primary data during the collection and maintenance of data. Remember, data and its analysis is subject to interpretation, and this interpretation may vary between researchers, across disciplines, or in international contexts. Data is always susceptible to differing and unintended uses.

Additional Resources
- Data Management And Sharing FAQs
- Create and Manage Data
- Why Create a Data Management Plan?
- Writing a Data Management Plan

Video Resources
- Ethics and Integrity in Data Use and Management

What is Metadata? How Should You Archiving Your Data?

Metadata is data about data. Structural metadata is information about the design and specification of data structures and is often termed “data about the containers of data.” Descriptive metadata is about individual instances of application data, the content data.

Data should be retained for years after collection and analysis, and all collaborators must agree on the terms of data management during all stages of the research process. Advances in technology ensure that the data remains accessible in the future through careful archiving of the data and the methodological details to collect and analyze the data. Archiving data requires the data itself (primary data), as well as information about the data (metadata or secondary data), be stored in a format that is accessible and will not degrade the quality of the data over time. Michener, Brunt, Helly, Kirchner, & Stafford (1997) describe what metadata for an experiment should be included:

1. Data set descriptors (i.e., abstract, key words)
2. Research origin descriptors (i.e., Investigators involved, funding sources, objectives, methods, experimental design)
3. Data set status and accessibility (i.e., date of last modifications, data use restrictions)
4. Data structure (i.e., file type, description of response variables, data type)
5. Supplemental descriptors (i.e., data forms, quality control procedures, publications)
6. Location(s) of physical specimens.

Large amounts of data now exists in digital form. Software changes dramatically over the years, sometimes rendering data stored in an older format inaccessible in a newer format. Public data
repositories can solve accessibility problems, but researchers must know how to effectively manage and store data.

Data Sharing
The recent increases in our ability to generate large amounts of data in the psychological and social sciences leads to greater expectations for data dissemination and sharing, particularly for research that is publicly funded by the National Science Foundation (NSF) or other agencies. For example, NSF's data dissemination and sharing policies, shown below, encourage sharing data.

From the NSF Award and Administration Guide (2013):
“Dissemination and Sharing of Research Results”

a. Investigators are expected to promptly prepare and submit for publication, with authorship that accurately reflects the contributions of those involved, all significant findings from work conducted under NSF grants. Grantees are expected to permit and encourage such publication by those actually performing that work, unless a grantee intends to publish or disseminate such findings itself.

b. Investigators are expected to share with other researchers, at no more than incremental cost and within a reasonable time, the primary data, samples, physical collections and other supporting materials created or gathered in the course of work under NSF grants. Grantees are expected to encourage and facilitate such sharing. Privileged or confidential information should be released only in a form that protects the privacy of individuals and subjects involved. General adjustments and, where essential, exceptions to this sharing expectation may be specified by the funding NSF Program or Division/Office for a particular field or discipline to safeguard the rights of individuals and subjects, the validity of results, or the integrity of collections or to accommodate the legitimate interest of investigators. A grantee or investigator also may request a particular adjustment or exception from the cognizant NSF Program Officer.

c. Investigators and grantees are encouraged to share software and inventions created under the grant or otherwise make them or their products widely available and usable.

d. NSF normally allows grantees to retain principal legal rights to intellectual property developed under NSF grants to provide incentives for development and dissemination of inventions, software and publications that can enhance their usefulness, accessibility and upkeep. Such incentives do not, however, reduce the responsibility that investigators and organizations have as members of the scientific and engineering community, to make results, data and collections available to other researchers.

e. NSF program management will implement these policies for dissemination and sharing of research results, in ways appropriate to field and circumstances, through the proposal review process; through award negotiations and conditions; and through appropriate support and incentives for data cleanup, documentation, dissemination, storage and the like.”

The National Institutes of Health has similar guidelines but specifies a timeline for sharing data in relation to initial publication of research results (National Institutes of Health, 2007). Many journals also require that raw data used in published graphs, tables, etc., be publicly available.
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Similar policies exist internationally, but they vary widely from country to country, with some countries having no formal policies. Before traveling to another country or collaborating with a foreign researcher, it is always wise to review their policies for data management. If the international policies differ from your institution's or funding agency's guidelines, establish a plan for the collection, analysis, publication, and storage of the data in collaboration with your other researchers involved. Remember, it is important to ensure that the plan does not violate any country's policies and adequately considers everyone's concerns and research needs.

Although many scientists embrace the idea of data sharing, there is some resistance. Scientists object to the time and financial cost associated with sharing data, as well as sharing data they may want to publish in the future. Funding agencies and scientific journals are beginning to address these concerns.

In international collaborations, tensions may arise when data sharing is required by the funding agencies of some collaborating countries but not all. The Ethics of Data Sharing and Reuse in Biology (Duke & Porter, 2013) reviews data sharing issues and considers the ethics involved in data reuse, outlining the types of acknowledgment data providers should receive for their contributions.

THE PROBLEM: Data Collection, Storage, and Sharing, and Researcher Responsibility

Watch this video describing data management and the data sharing nightmare.

Can you determine all of the data management errors made by the brown bear? Although humorous, the video highlights serious issues that arise in this area of data collection, sharing, and ethical responsibility in research.

THE SOLUTION: Open Science Framework

Researchers need to a way to store data that protects the integrity of the data and confidentiality of the participants, as well as a way to share this data with collaborators and the public. One possible solution to this dilemma of collection, storage, and sharing is the Open Science Framework.

The Open Science Framework (OSF) supports the entire research lifecycle: planning, execution, reporting, archiving, and discovery. This revolutionary software is meant to aid researchers in all of the issues of data management and sharing.

Case Study

Two faculty members at American University A are working with faculty members at Argentina University, Portugal University, and French University. The research project is a psychology informatics project, which will create large amounts of data that will need to be collected, stored, and shared between the research parties.

The majority of the data collection and analysis will be done by graduate students at the respective universities. The two American faculty members are the PIs on the project, which is funded by an
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international agency that stipulates the data must be shared with the public within 12 months of publication.

Exercise
Consider the following questions and write a short paper that will you will use for discussion in the in-person section of this training.

1. What should the researchers consider in their data management plan?
2. Who owns the data?
3. What are some possibilities for storing the data so it will be accessible to all of the researchers?
4. What should the researchers do before sharing the data with the public? Do you have any suggestions for how they could publically share the data?
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Additional Resources

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General
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