Code of Ethics
Cambridge Journal of AI

1. Introduction

The *Cambridge Journal of AI* is committed to ensuring the protection of dignity, rights, safety, and welfare of readers, authors, peer-reviewers, and editors. All manuscripts will undergo ethical scrutiny and any conflicts of interests between any authors, reviewers, and/or editors should be explicitly stated and will be appropriately addressed. Should readers feel a publication is in breach of our publication ethics, they are encouraged to report the issue to the relevant person(s). Similarly, reviewers and editors should contact the relevant person(s) on the Editorial Board. Importantly, all ethical scrutiny will be undertaken by the Editorial Board and appropriate responses and consequences will follow.

Many of the guidelines outlined may seem to concern primary data collection and research methodologies themselves. Whilst we do not anticipate such original studies to be conducted for this undergraduate journal, authors should be aware of the policies that much of their reading and references must adhere to and thus be cognisant of the similar ethical considerations authors may have to adopt when formulating their own manuscript.

Outline taken from the European Commission's (2018) *Ethics in Social Science and Humanities*. It has been adapted and relevant sections that pertain to the interdisciplinary nature of the journal have been added and adjusted accordingly.

2. General Principles/Underlying Ethical Principles

As a researcher you have an overriding obligation to protect participants' welfare and safety and to ensure they are treated fairly and with respect.

Regarding research participants, their rights are 'anchored in fundamental human rights and the fundamental ethical principles that govern all scientific research. In the context of research funded by the European Commission, the key sources of EU and international law are the ***Charter of Fundamental Rights of the European Union*** and the ***European Convention on Human Rights (ECHR)*** and its Protocols (for other texts). Other important sources are the ***UN Declaration of Human Rights*** and the ***UN Convention on the Rights of Persons with Disabilities (UN CRPD)***. Additional central policies and widely accepted declarations that codify principles of research ethics and ethical treatment of research participants include the ***Nuremberg Code***, the ***Helsinki Declaration***, and the ***Belmont Report***. Although these codes originate in the biomedical field, they encompass the central principles that apply to all human research. In addition, you are obliged to follow the national legislation of the jurisdiction/country where you plan to conduct your research and the overall principles of EU-funded research.' (*Ethics in Social Science and Humanities*, 2018).

The basic ethical principles that have evolved to protect human participants from harm, which have their origin in clinical research, apply to all fields of research in which humans participate by contributing time, effort, insights and personal data for researchers' use. These overarching ethical principles in the context of EU-funded research include:

- 'Respecting human dignity and integrity
- Ensuring honesty and transparency towards research subjects

- Respecting individual autonomy and obtaining free and informed consent (as well as assent whenever relevant)
- Protecting vulnerable individuals
- Ensuring privacy and confidentiality
- Promoting justice and inclusiveness
- Minimising harm and maximising benefit
- Sharing the benefits with disadvantaged populations, especially if the research is being carried out in developing countries
- Respecting and protecting the environment and future generations.'

(The above within this section was taken verbatim from *Ethics in Social Science and Humanities*, 2018).

Human Studies and Subjects

For manuscripts reporting medical studies that involve human participants, a statement identifying the ethics committee that approved the study and confirmation that the study conforms to recognized standards is required, for example: Declaration of Helsinki; US Federal Policy for the Protection of Human Subjects; or European Medicines Agency Guidelines for Good Clinical Practice. It should also state clearly in the text that all persons gave their informed consent prior to their inclusion in the study.

Patient anonymity should be preserved. Photographs need to be cropped sufficiently to prevent human subjects being recognized (or an eye bar should be used). Images and information from individual participants will only be published where the authors have obtained the individual's free prior informed consent. Authors do not need to provide a copy of the consent form to the publisher; however, in signing the author licence to publish, authors are required to confirm that consent has been obtained.

3. Ethical Dimensions of Research Methodology

The *Cambridge Journal of AI* is dedicated to offering a space in which different disciplinary niches may interact, confront, and negotiate with one another. This may cause methodological confrontations that should be thought through before conducting research or compiling literature reviews. The following section provides extensive guidelines on various issues. Whilst most disciplines concur, there are some notable differences. In any case, please note that sections 3.1, 3.2, 3.3, 3.4, 3.5 (Extra comment), 3.6 have been copied verbatim from *Ethics in Social Science and Humanities* (2018) and adapted where applicable to the *Cambridge Journal of AI*. Sections 3.7 and 3.8 were added to accommodate for research involving animals and human populations, respectively.

3.1. Use of deception

Use of deception in research means that researchers deliberately lie or trick the participants in the research setting so that the true purpose of the study remains unknown to them (until it is revealed in a debriefing once participation is finished). Researchers include deception in the design of the study if disclosing its real purpose would lead participants to modify their behaviour, thereby distorting the research objective.

Use of deception as [a research method] has been subject to controversy and debate. It violates the principle of informed consent and, it has been argued, can harm participants, researchers, research professions and society overall (Israel, 2015, p. 96; referring to Hegtvedt, 2007). Nevertheless, learned societies for social research argue that there are exceptional, justified uses of deception, as in cases where the study addresses important matters and is expected to reveal something of social significance, which cannot be discovered in any other way.

In general, strong justification must always be provided for having recourse to deception, and any study relying on deception must be so designed as to protect participants' dignity and autonomy, despite the method used.

Information for participants may be withheld from them only when the need to preserve the integrity of the research outweighs the participants' interests, or if it is shown to be in the public interest. If information has been withheld from participants, they will be appropriately informed *after* their participation in such a manner and to such an extent that, to their judgement, the informed consent remains intact. Uses of deception are limited and a study must not rely on deception unless the use of such techniques can be justified by the likelihood that the study will have a significant scientific or applied value, and there is no other way to collect the data.

In the case of procedures that can cause **physical** or **mental harm**, information must not be withheld, and no deception must be used (Code of Conduct: Code of Ethics for Research in the Social and Behavioural Sciences involving Human Participants, 2018). Risk management and harm alleviation strategies must be in place.

SUMMARY:
If your research design includes deception,

- Provide strong justification for the choice of method by showing the importance of the research objective and demonstrating that your research cannot be conducted in any other way;
- Describe how you will debrief your participants and retrospectively obtain their informed consent;
- Show that the use of deception will not harm your participants socially, emotionally, or psychologically and that revealing the real nature of the research will not lead to any discomfort, anger, or objections on their part; and finally
- Obtain local ethics committee approval for your study before it gets underway.

3.2. Covert research

Another method that goes against the requirements of informed consent and that can invade participants' privacy is covert research. This type of secret or disguised research is rare and should be the exception rather than the rule (Swedish Research Council, 2017). Like deception, covert research requires strong justification and a demonstration of clear benefits of the chosen method over any other approach. Matters of social significance must be addressed in the research. Covert research should be avoided in principle, unless it is the only method by which information can be gathered, and/or when access to the usual sources of information is obstructed by those in power (International Sociological Association, 2001).

Circumstances that *may* lend support to using covert methods include settings where research participants change their behaviour because they know they are being studied (British Sociological Association, 2017).

Participant or non-participant observation in non-public spaces or experimental manipulation of research participants without their knowledge should be resorted to only where it is impossible to use other methods to obtain essential data (ibid.). Informed consent should be sought after the event wherever possible. Here the risk researchers face is, of course, that some participants may not give their consent retrospectively, which would mean that some or all of the data collected could not be used (ibid.).

- Covert research may be used in settings that pose no particular risk to participants or researchers if the anonymity of those being observed is safeguarded. Observing fully public settings may therefore not require consent. Such research must be conducted with respect for privacy:
- No personal data are collected (data are fully anonymised at the point and time of collection)
- Data are collected unobtrusively and in accordance with local cultural values, and data are collected only in situations where people being studied can reasonably expect to be observed by strangers (*Code of Ethics for Research in the Social and Behavioural Sciences involving Human Participants*, 2018)

Researchers, however, enter risky terrain if they intend to observe illegal activities where covert investigations by appropriate authorities may already be under way (as when drug cartels or human trafficking are under investigation or paramilitary groups, terrorists or organised gangs are under surveillance). By accident, a researcher may become a witness of or even an indirect accomplice to criminal activity and may eventually be involved in obstructing justice if they fail to report illegal activities to authorities.

SUMMARY:
If you plan to engage in covert research

- Consult the legal department and the data protection officer (DPO) at your host institution to find out about the legal basis of your research and whether your research design poses any risk of breaking the law;
- Abroad, ensure that you obtain local ethics approval from your host country as well as make sure the methodology you employ is compatible with the local legislation;
- Remember that if you are working in non-EU countries, the proposed research must be legal at least in one EU member state;
- Keep in mind that there are positive disclosure obligations in many EU member states that you must be aware of if you intend to conduct research involving terrorism or other criminal activities, for example;
- Remember that safeguarding the anonymity of research participants is central. Ideally, where informed consent has not been obtained prior to research, it should be obtained afterwards.

3.3. Internet research and social media data in research

[The journal recommends authors to read Townsend and Wallace's (2016) document, "Social Media Research: A Guide to Ethics". This document includes flowcharts that cover issues including legal, privacy, risk, reuse, and publication.]

The internet has been described as a social phenomenon, a tool and also a (field) site for research (Markham & Buchanan, 2012).

When processing large amounts of data in your research, bear in mind that all big data research on social, medical, psychological, and economic phenomena engages with human subjects; all these data are people. As a researcher you have the ethical responsibility to minimise potential harm to them (Zook et al., 2017).

Social media have been characterised as web-based and mobile-based internet applications that allow the creation, access and exchange of user-generated content that is ubiquitously accessible. Analysing social media data, in particular Twitter feeds for sentiment analysis, has become a major research and business activity, given the easy availability of web-based application programming interfaces (APIs) provided by Twitter, Facebook and News services. There has been explosive growth in data services and software tools for scraping and sentiment analysis and in social media analytics platforms (Batrinca & Treleaven, 2015). In turn, the use of such tools in social science research has become increasingly widespread.

A number of issues have been raised in research that is internet-mediated and/or uses social media data. These relate, among others, to:

- Whether all data that are available are also public and whether it is fair to use them in research
- Meeting conditions of free and voluntary informed consent in the context of social media research
- Anonymity
- Risk of harm through tracing or exposing the social media user's identity and profile
- Uncertainty about whether some users being studied are children or belong to other vulnerable groups (Townsend & Wallace, 2016)

In using social media data in your research, bear in mind that even data sets comprising thousands of tweets involve human beings who could be directly or indirectly affected by research. There is considerable evidence that even anonymised data sets may make individuals identifiable if they contain enough personal information (Markham & Buchanan, 2012). Research with anonymised data sets may cause harm to a group through, for instance, discrimination against or stigmatisation of entire populations. Consider the *'mosaic effect', if you plan to combine large amounts of data from various sources that appear not to be attributable to particular individuals in isolation. While they may look relatively harmless in their own right, there is a chance that they may cause a breach of privacy when combined* (Pozen, 2015). *Through availability of government data sets and their machine readability the effect is also relevant in social research, as there is a risk that disparate threads can be easily combined in a way that yields private information or information that could be harmful to individuals if placed in a new context* (Mazmanian, 2014). *Linking diverse sources of social media data can produce the same effect.*

If, on assessing the risks, you anticipate any risk of harm to individuals whose data you are using, you must:

- Paraphrase all data that will be republished (to prevent others being led to the individual's online profile)
- Seek informed consent from people whose data you intend to use in its original form in research outputs, or

- Consider a more traditional research approach that better ensures consent and confidentiality (Townsend & Wallace, 2016)

Remember that just because data is publicly accessible, that does not mean that it can be processed by anyone for any purpose. When ascertaining whether data is open for use or is to be considered private, bear in mind the online environment where it is posted and the reasonable expectations of privacy which the user may have (Kuyumdzhieva, 2018). Password-protected profiles and closed group discussions are obviously intended by their users to be private.

When processing social media platform data:
- Make sure you are sensitive to the issues raised
- Comply with the EU General Data Protection Regulation (GDPR)
- Consult your host institution's data protection officer and/or ethics advisor, and
- Find out if you need to obtain ethical approval for collecting data.

For more information, please refer to the document Ethics and Data Protection (Section: The use of previously collected data ('secondary use').

SUMMARY:
Consider the following if you plan to use social media in your research:
- Remember that the data you process is about real people.
- Consult the relevant terms and conditions of the platforms you will be using to obtain your data.
- Appreciate that open source does not mean that it is open for use.
- Ascertain whether the data you intend to access is really public (open platforms vs password-protected fora; if the forum is closed, contact the site or group administrator). Seemingly public data may not be available for research.
- Take all relevant precautions to avoid collecting data from children or vulnerable adults through social media and online questionnaires without appropriate authorisations.
- Consider the potential sensitivity of the data and whether users could be harmed if their data are exposed to new audiences. Sensitive data postings relate to criminal offences, use of illegal drugs, financial problems, mental issues and suicidal feelings, extramarital sexual activity, controversial political opinions and activism.
- Closed groups and fora: if there is an expectation of privacy, seek permission from users to use the data and obtain their informed consent.
- Consider the user's reasonable expectation of privacy.
- For all details, consult the document Ethics and Data Protection.

3.4. Research participation

No-one is obliged to participate in research. You need to justify why human participation in your planned work is necessary in the first place. Anyone who considers participating in your research must have a fair chance to judge whether it is worthwhile taking the time and making the effort to share information with you. Usually this is safeguarded through participants giving their informed consent to participation as part of negotiating the terms of the relationship with the research team. Your research involves human participants if you are recruiting them or actively involving or influencing, manipulating or directing them in any way in your research activities. This means you must seek informed consent and/or implement appropriate safeguards.

3.5. Vulnerable participants

If you involve vulnerable participants, you must provide justification for doing so. The obvious question to address is: can the research results be obtained by involving another, less vulnerable, group? Explain how you ensure that the individuals you involve will not be stigmatised, re-traumatised or otherwise harmed through their participation in your research.

Note that some groups are always vulnerable. These include children, people with cognitive impairments, and those who are unable to give informed consent. Other vulnerability is likely to be context-dependent. This means you and your fellow-researchers need to give some thought to whether a particular group is vulnerable, and for what reason.

In general, groups considered vulnerable because of their circumstances may include:

- Children
- Refugees
- Irregular migrants
- Sex workers
- People with cognitive impairments
- Dissidents
- Traumatised people at risk of re-traumatisation (e.g. people from conflict areas, victims of crime and/or violence); and
- People in dependent relationships with the researcher or the research team (e.g., students doing course work with researchers).

Make sure you do not exacerbate people's vulnerability through your research or research participation. In some countries you may need to show evidence of competence and certification in order to work with children and vulnerable adults.

If you plan to involve refugees in your research, please refer to the Guidance note—Research on refugees, asylum seekers & migrants.

Individuals who cannot consent to research participation are sometimes needed as research participants. Check national laws on research involvement of people who cannot consent, as they are likely to differ from country to country.

SUMMARY:
If you plan to involve vulnerable individuals in research, describe the risk of exposure to harm to participants (e.g., social, psychological, physical, reputational, economic, or emotional):

- Be clear about the possible benefits and/or the lack of benefits of research participation: avoid raising unfounded expectations.
- Make sure people can opt of research, e.g., when involving students. If participation is seen as part of course work, meaningful alternatives must be offered. Do not involve participants who are in any way dependent on you or your staff.
- If participation in research has the potential to re-traumatise people, take steps to minimise the risk and ensure that your team includes people with appropriate expertise and skills.
- If there is a risk of stigmatisation, take active steps to minimise this risk.
- If there is a risk that the research may make participants vulnerable to physical or psychological abuse, take active steps to minimise such risks.

3.6. Children in research

Due justification must be provided for involving children in research. In addition, you must obtain their assent and the informed consent of their parents or guardians. When involving young children in research, you must monitor their assent for any verbal or non-verbal clues that they may actually disagree or wish to stop participating.

The age at which children can give their informed consent to research participation varies from country to country. You must abide by the relevant laws of the country where you collect the data. See the documents *Ethics and Data Protection* for additional information.

Depending on national laws, you may require official vetting and authorisation to work with children.

Depending on national/regional/local laws, conducting research in kindergartens and schools may require special authorisation from municipal social services, boards of education, or similar.

3.7. Human population research

The following section is a collection of relevant sections from *Nature*'s editorial policies (*Research Ethics*, 2022), copied verbatim.

For studies involving humans categorized by race, ethnicity, national or social origin, sex, gender identity, sexual orientation, religion, political or other beliefs, age, disease, (dis)ability, socio-economic status, or other socially constructed or socially relevant groupings, authors should:

- Explicitly describe their methods of categorising human populations
- Define categories in as much detail as the study protocol allows
- Justify their choices of definitions and categories, including for example whether any rules of categorization were required by their funding agency
- Explain whether (and if so, how) they controlled for confounding variables in their analyses [5] [verbatim from Nature[5]]

We require that all content submitted for publication be respectful of the dignity and rights of individuals and human groups. Researchers are asked to carefully consider the potential implications (including inadvertent consequences) of research on human groups defined by attributes of race, ethnicity, national or social origin, sex, gender identity, sexual orientation, religion, political or other beliefs, age, disease, (dis)ability or other status, to be reflective of their authorial perspective if not part of the group under study, and contextualise their findings to minimize as much as possible potential misuse or risks of harm to the studied groups in the public sphere. [5] [verbatim from Nature[5]]

Authors should use inclusive, respectful, non-stigmatizing language in their submitted manuscripts. Authors should ensure that writing is free from stereotypes or cultural assumptions. We recommend avoiding the use of descriptors that refer to attributes such as race, ethnicity, national or social origin, sex, gender identity, sexual orientation, religion, political or other beliefs, age, disease, (dis)ability or other group descriptors unless they are relevant. We advise that authors writing in English follow the guidance on bias-free language

provided by the American Psychological Association when preparing their manuscripts for submission.

Regardless of content type (research, review or opinion) and, for research, regardless of whether a research project was reviewed and approved by an appropriate institutional ethics committee, editors reserve the right to request modifications to (or correct or otherwise amend post-publication), and in severe cases refuse publication of (or retract post-publication):

- Content that is premised upon the assumption of inherent biological, social, or cultural superiority or inferiority of one human group over another based on race, ethnicity, national or social origin, sex, gender identity, sexual orientation, religion, political or other beliefs, age, disease, (dis)ability, or other socially constructed or socially relevant groupings (hereafter referred to as socially constructed or socially relevant human groupings).
- Content that undermines—or could reasonably be perceived to undermine—the rights and dignities of an individual or human group on the basis of socially constructed or socially relevant human groupings.
- Content that includes text or images that directly or indirectly disparage a person or group on the basis of socially constructed or socially relevant human groupings.
- Submissions that embody singular, privileged perspectives, which are exclusionary of a diversity of voices in relation to socially constructed or socially relevant human groupings, and which purport such perspectives to be generalisable and/or assumed.

For Clinical trials

- All interventional trials must be registered before enrolment of the first participant. Trial registration records must be available in a primary register of the WHO International Clinical Trials Registry Platform (ICTRP). The trial number must be clearly indicated in the abstract and methods section of the manuscript. (These points were adapted from *Nature's Research Ethics*, 2022)
- Clinical trial reports must adhere to the relevant reporting guidelines for their study design, such as CONSORT for phase II and phase III randomised controlled trials, TREND for non-randomized trials, and other specialised guidelines as appropriate. (adapted from PLoS's *Human Subjects Research*).

4. Informed Consent

The following was taken verbatim from *Ethics in Social Science and Humanities* (2018). Whilst it outlines the procedures and ethics concerning informed consent within the social sciences and humanities fields, these should necessarily be extended to other fields in which human participants are utilised.

Most social science research endeavours are such that human participation requires evidence of the voluntary, free, and informed consent of those who contribute their time, insights, effort and data for the use of researchers. Informed consent, whether in writing (as is most usual) or given orally, is thus the default option. Obtaining informed consent, however, does not in itself guarantee ethical research. In some research settings, this very act and the aim of safeguarding participants' rights and well-being in the research setting may place them at risk of harm in their social context (rather than affording them protection).

There may also be situations in which standard procedures for obtaining written informed consent are culturally or contextually inappropriate to the participants. In such cases, explain how you plan to obtain and document consent by other means (e.g. orally).

If you have concerns that obtaining written informed consent from participants could expose them to harm, consider other ways for them to document their agreement to participate. These options can be explored together with the prospective participants. In such cases, you must justify your decision and your alternative procedure for obtaining consent in:

- Your ethics self-assessment **[in your cover letter or ethics statement elsewhere in the manuscript]**
- Your application for ethics approval.

When preparing information sheets and consent forms, the following checklist may be helpful:

- Give participants a clear explanation of the aims, overall purpose, methods and application of the research.
- Explain that participation is voluntary.
- Remind participants that they have a right to withdraw their consent at any time without any consequences.
- Explain the degree of benefit, risks, burden or discomfort involved in participation.
- Give an estimate of the time and effort expected of participants.
- Explain precautions to ensure participants' safety and provide information on insurance, if there is any.
- Explain who is funding the research and for what purpose.
- Disclose who will benefit from the research.
- Give a firm commitment to protecting respondents' anonymity and privacy (provided that this can genuinely be guaranteed).
- Make a clear commitment to treating personal and sensitive information confidentially.
- Reassure participants that there are secure procedures for analysing any data gathered.
- Explain clearly who will have access to any data that participants provide.
- Consider any unintended/unexpected/incidental findings and explain how you intend to deal with such findings.
- Explain briefly where research findings will be published.
- Offer to provide respondents with further information about research if they ask for it.
- Give the name and contact details of the contact person who can answer any queries participants may have.
- Clarify possible uses to which data may be put in future (if this is envisaged) and clarify whether participants will be asked for consent again if this is the case. Cover any issues relating to copyright of data and other materials used in the research.

(Modified list based on a checklist in Paul Ransome's *Ethics & Values in Social Research*, 2013, p. 43).

Whenever you are collecting personal data directly from research participants, you must seek their informed consent using a procedure that meets the minimum standards of the GDPR.[1]

[1] For research involving clinical trials, the processing of data should also comply with the requirements established in the Regulation (EU) No 536/2014 of the European Parliament and of the Council of 16 April 2014 on clinical trials on medicinal products for human use, and repealing Directive 2001/20/EC.

This requires consent to be given by a clear affirmative act establishing a freely given, specific, informed and unambiguous indication of the data subject's agreement to the processing of personal data relating to them (see further Article 7, GDPR and 'Guidelines on Consent under Regulation 2016/679', European Commission Article 29 Working Party, adopted on 28 November 2017). This may take the form of a written statement, which may be collected by electronic means, or of an oral statement. For additional details, see the documents Ethics and Data Protection.

5. Findings Outside the Scope of the Research

The following section was taken verbatim from *Ethics in Social Science and Humanities* (2018).

Social science and humanities research relies on methods that may unintentionally produce findings outside the scope of the original research questions. Fieldwork, observations and interviews can yield information that goes beyond the scope of the research design, thus presenting the researcher with a dilemma: whether to preserve confidentiality or to disclose the information to relevant authorities or services.

Unintended/unexpected/incidental findings may include indications of criminal activity, human trafficking, abuse, domestic violence or bullying. Researchers must inform the participants, or their guardians or other responsible people, of their intentions and reasons for disclosure, provided that doing so does not undermine the act of disclosure. A characteristic of incidental/unexpected findings is that they require the researcher to take some form of action.

As a rule, criminal activity witnessed or uncovered in the course of research must be reported to the responsible and appropriate authorities, even if this means overriding commitments to participants to maintain confidentiality and anonymity. There may be a legal obligation to report criminal activity. In some research settings (for example when working with refugees), it may be more appropriate to contact relevant NGOs or agencies with appropriate expertise rather than the authorities.

For guidance on research involving refugees, see the Guidance note – Research on refugees, asylum seekers & migrants

SUMMARY:

- Plan ahead of drafting a policy for dealing with unintended, unexpected, or incidental findings that are not harmless.
- Inform participants about the limits of the confidentiality that you can offer (the information sheet should cover incidental findings policy). See the Guidance Note on Informed Consent (Sutrop & Florea, 2010)
- Be aware of the legal context in which you conduct your research and consult your host institution's legal department (see also covert research, above) to ensure that your research design is within legal limits.
- Include in your work plan a structure for discussing unexpected or incidental findings within your consortium.

6. Data Protection and Privacy

Editors and reviewers will have access to various manuscripts with which they are working on. In no instance should anyone distribute any material from manuscripts they have access to. Moreover, in no case is it acceptable for the editor or reviewer to approach the author regarding their work, their manuscript, or further inquiries about the author unless explicitly outlined in the peer-review and editing process. For example, an author should never be approached by an editor or reviewer who wishes to gain co-authorship of the manuscript in review, nor invite them for collaborative work on their own manuscript. This violates the reviewer- and editor-author confidential relationship and would instantiate an immediate conflict of interest.

The following section was taken verbatim from *Ethics in Social Science and Humanities* (2018).

The main risk faced by [any] research participant is disclosure of identity and insufficient protection of their private information, associated with discrimination and stigmatisation.

Safeguarding privacy and appropriate measures for processing, handling, and storing data are thus central at all stages of research and beyond.

Data protection is both an integral issue for research ethics in Europe and a fundamental human right. It is closely linked to human dignity and the principle that everyone should be valued and respected. If this principle is to guide the development of today's 'information societies', it must be rigorously applied by the research community.

The right to data protection is guaranteed by the **EU Charter of Fundamental Rights** and the **Treaty on the Functioning of the European Union**. It gives effect to the right to privacy by providing individuals with autonomy and control over the way information about them is collected and used (Article 8, EU Charter of Fundamental Rights). In research settings, data protection creates obligations on researchers to provide research subjects with detailed information about what will happen to the personal data that they collect from them. It also requires the organisations processing the data to ensure it is properly protected, 'minimised' and destroyed when no longer needed.

All individual EU-funded research projects that process personal data must comply with:

- EU and national data protection laws
- Ethical considerations
- The values and principles underpinning the EU.

Particular attention should be paid to research involving profiling, automated decision-making, data mining, big-data analytics and artificial intelligence, as these may pose higher risks to the rights and freedoms of data subjects. The increasing impact of these and other forms of ICT on social and material life is reflected in the letter and spirit of the EU GDPR (EU Regulation 2016/679).

Now that large-scale data collection enabled by internet-mediated research and mobile devices is a reality, the onus is still on researchers and the research data infrastructure at their host institutes to discharge their ethical responsibilities.

For further details of data protection, see the document Ethics and Data Protection.

6.1. Image use

(*Research Ethics*, 2022): 'When publishing identifiable images from human research participants, authors must include a statement in the published paper affirming that they have obtained informed consent for publication of the images. All reasonable measures must be taken to protect patient anonymity. Black bars over the eyes are not acceptable means of anonymisation. In certain cases, we may insist upon obtaining evidence of informed consent from authors. Images without appropriate consent will be removed from publication.'

All human remains should be displayed, labelled, and described in a respectful manner. All human remains and images of human remains must be obtained in a legal manner. The following was taken verbatim from BABAO Code of Practice (2019): Where appropriate, descendants should be consulted regarding the management of remains. Images of biological remains should not be published without consultation with the curating institution or relevant stakeholder.

7. Sites of Research

The following section was taken verbatim from *Ethics in Social Science and Humanities* (2018).

Knowledge and understanding based on [any] research has the potential to improve people's lives, both in diverse communities within the EU and in non-EU countries. Research is thus necessary and it is often conducted in contexts and geographical areas where the conditions for research work may be risky as regards the safety of participants and researchers themselves.

If your research site is located in an area that poses relatively high risks to you or your participants, provide clear strategies for keeping your research participants/informants, your research staff and yourself safe. A risk assessment needs to be made in which you should include details of safety measures you intend to take, including training for staff and insurance cover.

SUMMARY:
When conducting research outside the EU:

- Your research must comply with the rules governing EU-funded research and the host country's laws
- Consult and notify relevant bodies in the country where you are to conduct your research;
- Apply for formal ethics approval for your research if this is required by national law. Any research you intend to conduct outside the EU must be permissible and legal in at least one EU country.

Research in regions of higher risk
List of overall considerations to apply to research projects in resource poor countries:

- Make sure your research is responsive to the needs of the country where it is carried out (e.g., the study has value for the welfare of the intended participants, their community, and/or their country). This issue is of critical relevance for emerging and developing countries.
- Where applicable, apply for local authorisation for conducting your research.
- Be sensitive to local conditions. Explain how your research proposal fits into local customs and practices.

- Show how the results of your research can be applied in low and/or lower middle-income countries.
- Show how you are helping build local capacities by conducting research in resource poor countries and how benefits will be shared.
- If appropriate, state that you are planning to discuss in advance the planned research and dissemination of the results with relevant parties in the community.
- Make sure that your research complies with the rules for EU-funded research and ethics requirements and that it also abides by relevant local, national, international, and EU laws and guidelines.
- Confirm that the research you plan to conduct outside the EU is legal in at least one EU country.
- Find out how to obtain ethics approval in your host country, so that the ethical acceptability of your research is appropriately assessed against customs and traditions at your study site.
- Consider the safety of participants and staff, especially if you plan to address sensitive topics (e.g., political views, sexual orientation, religion, trade union membership) or involve marginalised groups. Provide a risk analysis and mitigation strategy.
- Research in conflict areas can be justified. If you intend to collect data in a troubled region, devise a strategy for keeping researchers, informants and their associates safe.

7.1. Risks and harm

The following section was taken verbatim from *Ethics in Social Science and Humanities* (2018).

The likely risks and harms in social sciences and humanities (SSH) research may differ from those in clinical research. It is important to understand their nature and likelihood in order to set up appropriate collaboration with participants and measures for their protection. As a rule, the potential harm associated with participation in social science research is multifaceted. Addressing such harm appropriately requires care.

Participants in social science studies are seldom exposed to physical harm, although they may sometimes experience transient psychological discomfort or even harm as a result of the research activity itself (see *Guidance Note*, 2010). Research may be disruptive and damaging to research participants as individuals or to whole communities or categories of people, such as those with HIV infection. Risks can be non- material, including 'risk to a participant's personal social standing, privacy, personal values and beliefs, their links to family and the wider community, and their position within occupational settings, as well as the adverse effects of revealing information that relates to illegal, sexual or deviant behaviour.' (*ESRC Framework for Research Ethics*, 2015)

One of the main risks faced by a SSH research participant, then, is disclosure of identity and insufficient protection of their private information, leading to discrimination and stigmatisation. Safeguarding privacy and appropriate measures for processing, handling, and storing data are thus central at all stages of research and beyond. When engaging in large-scale data collection enabled by internet-mediated research and mobile devices, the onus is still on researchers and the research data infrastructure at their host institutes to discharge their ethical responsibilities.

Participation in research involving risks that have not been appropriately managed may cause harm of various kinds: emotional, psychological, economic, reputational, and legal (See Guidance Note, 2010; Sieber's *Risk and Harm*, 2004). Such damage can, at worst, be longstanding and even irreparable.

In assessing risks, bear in mind that some groups are more vulnerable if the confidential private information they provide is linked with them or traced back to them.

They include: victims and witnesses of violence, in particular domestic violence; sex workers; in some contexts, members of minority; irregular migrants; refugees; LGBTQIA+ persons; patients; disabled people; HIV-positive people.

When planning research in a cultural context different from your own, carefully assess the risks facing a potential research participant (and yourself).

Research ethics issues in SSH research are diverse and sometimes very complex. The risks are varied and need to be systematically addressed according to the research and ethics issues associated with each project. The responsibilities incumbent on the research teams to identify and prevent potential harm can be significant.

7.2. Risk assessment

The following section was taken verbatim from *Ethics in Social Science and Humanities* (2018).

The notion of minimal risk is used to denote research in which the probability and magnitude of harm or discomfort anticipated are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests. Research ethics committees (RECs) sometimes use the threshold of minimal risk as a criterion for requiring a full ethics review.

The following list provides examples of research that entail more than minimal risk according to the Economic and Social Research Council (ESRC):

- Research involving potentially vulnerable groups and people unable to consent;
- Research involving sensitive topics and those which might cause psychological stress, anxiety or humiliation;
- Research involving potentially sensitive topics, such as participants' sexual behaviour; illegal or political behaviour; experience of violence, abuse or exploitation; mental health; participants' personal or family lives; or their gender or ethnic status. Elite interviews [interviews where an interview partner is chosen on the basis of their position or status, not randomly] may also fall into this category.
- Individuals or groups in cases where a gatekeeper is normally required to give permission for initial or continued access to participants. This includes research involving gatekeepers such as adult professionals (e.g. those working with children or the elderly), or research in communities (within or outside the EU) where access to research participants is not possible without the permission of another adult, such as another family member (e.g. the parent or husband of the participant) or a community leader, and research where participants are in a dependent relationship with the gatekeeper (e.g. employees recruited through their workplace). Permission for access

to other groups, for example participants in a long term cohort study, may also need to be requested from a data producer who controls access to the group.
- Research involving justified deception without participants' valid and informed consent at the time the research is carried out;
- Intrusive interventions or data collection methods, such as the administration of substances; vigorous physical exercise; or techniques where participants are persuaded to reveal information which they would not otherwise disclose in the course of everyday life. Also research which would or might induce psychological stress, anxiety or humiliation, or cause more than minimal distress.
- Research where the safety of the researcher may be in question;
- Research involving respondents through the internet, in particular where visual images are used, and where sensitive issues are discussed or where participants and other individuals may be identifiable in the visual images used or generated.
- Social media and participants recruited or identified through the internet, especially if the understanding of privacy in these settings is contentious when sensitive issues are discussed—for example in 'closed' discussion groups where there is potential for quotes to be identifiable, and including those where visual images are used.
- Any research where biological samples are collected and/or medical imaging technologies are used as part of SSH research.

SUMMARY:
- Provide a clear and adequate assessment of risks in your ethics self-assessment, stating explicitly what kinds of harm might occur and the likelihood of participants experiencing such harm. Be explicit about how you intend to manage risks and mitigate harm. Provide sufficient detail in your risk assessment and justify the choices made.
- Remember that any involvement or intervention may involve a risk to the participant and that the onus is on you to establish there is no risk, that the risk is minimal and justifiable, and that appropriate risk management structures are in place.

7.3. Checklist for higher-risk social sciences and humanities research

The following section was taken verbatim from *Ethics in Social Science and Humanities* (2018).

Use the table below to check whether your planned work could potentially involve a higher than minimal risk/increased sensitivity.

Participants	Children, vulnerable groups (e.g., persons unable to consent, minorities, marginalised people, migrants, refugees, victims of abuse and violence).
Sites of research	Conflict regions, sites of historical value to indigenous people, troubled neighbourhoods, non-EU countries or regions within them where the economic, political, environmental and health conditions may pose risks.
Sensitive areas of research	Risk of exposure to harm to participants; potentially sensitive topics, such as participants' sexual behaviour; illegal or political activities; experience of violence, abuse, or exploitation; mental health; participants' personal or family lives; or their gender or ethnic status. Research into criminal activity.
Methodology	Deception, covert research, invasive methods (fMRI for children) as part of interdisciplinary research, profiling and web-crawling.

Data processing, sensitive data	Data collection and processing to be implemented—risk of traceability and re-identification through small groups of participants, linking of large amounts of data from different sources; uncertainty whether children are participating; sensitive data.
Consequences of research	Potential for misuse of findings [see section 8]

If your work involves any of the above, you must:

- Provide a clear justification in your ethics self-assessment [whether in the cover letter or elsewhere in the manuscript] for choosing an approach that involves higher risk;
- Explain why alternative approaches are not possible (if they are not);
- Identify the risks, and show how you plan to mitigate and manage the risk (risk mitigation plan).

8. Misuse of Research

The following section was taken verbatim from *Ethics in Social Science and Humanities* (2018).

Some research involves materials, methods or technologies or generates knowledge that could be used for unethical ends. Although such research is usually carried out with benign intentions, it has the potential to harm humans, animals or the environment, or society.

Although the risk of misuse of research can never be eliminated, it can be minimised by identifying risks in good time and taking the right precautions.

Professional codes remind social scientists of their responsibility to protect the interests and welfare of groups and individuals with whom and on whom they work, or who are involved in their research efforts. Social scientists must be accurate and truthful when sharing their analyses and reporting their findings. They also need to consider the effects of their involvements and the consequences of their work or its misuse for those they study and other interested parties.

When designing a proposal, consider not only the immediate aims and intended applications of the activities you plan, but also whether your research could serve unethical purposes. An example of this would be a study involving a minority or vulnerable groups or research which develops social, behavioural or genetic profiling technologies that could be misused to stigmatise, discriminate against, harass or intimidate people.

Questions to identify potential misuse include:

- Could the materials/method/technologies and knowledge concerned harm people, animals, or the environment if modified or enhanced?
- What would happen if they ended up in the wrong hands, e.g., among criminals or terrorists or were used to curtail human rights or civil liberties?
- Could they serve any purposes other than the intended ones? If so, would that be unethical?

Research which could have an impact on human rights concerns includes research on surveillance technologies, new data gathering and data merging technologies (e.g. in the

context of big data). However, social research that could lead to discrimination or stigmatisation is also relevant. Risk mitigation measures may include:

- Human rights impact assessment, involving human rights experts in your research
- Training personnel and/or technological safeguards
- Caution when publishing or otherwise disseminating results (e.g., through privacy by design)
- Adapting the research design (e.g., using dummy data).
- See here.

SUMMARY:
If you are planning research that may give rise to concerns about misuse about potential misuse, in preparing your proposal [in your cover letter or elsewhere in the manuscript]:

- Provide a risk assessment [...], detailing the risks and how they will be mitigated in order to prevent misuse
- Provide a risk mitigation strategy
- If required, attach copies of authorisations, security clearances and ethics approval
- Describe in the risk table in the management section what action you would take if the national authorities did not grant authorisation.

9. Protected Characteristics

9.1. Race, ethnicity, and racism

In line with *Nature's* editorial policies (*Research Ethics*, 2022), at the base of our ethical policies regarding race and ethnicity lies the fact that race and ethnicity are socio-political constructs. Humans do not have biological races, at least based on modern biological criteria for the identification of geographical races or subspecies. Studies that use the constructs of race and/or ethnicity should explicitly motivate their use. Race/ethnicity should not be used as proxies for other variables – for example, socioeconomic status or income. For studies involving data collected from human participants, researchers should explain:

- Who provided the classification terms (the participants, the researchers or third parties);
- What the classification terms are; and
- How racial/ethnic identity was determined (by the participants, the researchers, or third parties).

(*Research Ethics*, 2022): 'Biomedical studies should not conflate genetic ancestry (a biological construct) and race/ethnicity (sociopolitical constructs): although race/ethnicity are important constructs for the study of disparities in health outcomes and health care, empirically established genetic ancestry is the appropriate construct for the study of the biological aetiology of diseases or differences in treatment response. If race/ethnicity are used in the context of disease aetiology due to the unavailability of genetic ancestry data, this should be done with caution and clarification.

Racism is scientifically unfounded and ethically untenable. Editors reserve the right to request modifications to (or correct or otherwise amend post-publication), and in severe cases refuse publication of (or retract post-publication), racist content. Editors use the guiding criteria I-IV set out in the section Research on human populations (see above) to identify content that potentially undermines the equal dignity and rights of humans of all races/ethnicities.'

9.2. Sex, gender, and sexual orientation

Here are some working definitions that have been adapted from the SAGER guidelines among other sources, taken verbatim (ibid.):

- **Sex** – refers to currently understood biological differences between females and males, including chromosomes, sex organs, and endogenous hormonal profiles. Sex is usually categorized as female or male, although there is variation in the biological attributes that constitute sex.
- **Gender** – refers to socially constructed and enacted roles and behaviours which occur in a historical and cultural context and vary across societies and over time. Gender is usually incorrectly conceptualised as a binary (man / woman or feminine/masculine) factor. In reality, there is a spectrum of gender identities and expressions defining how individuals identify themselves and express their gender.
- **Gender identity** – an individual's conception of self as being a man, woman, masculine, feminine, nonbinary, ambivalent, etc., based in part on physical, psychological and social factors. It is the internal experience of a gender role. There is a broad range of gender identities including, but not limited to, transgender, gender-queer, gender-fluid, non-binary, gender-variant, genderless, agender, nongender, bi-gender, trans man, trans woman, trans masculine, trans feminine and cisgender.
- **Gender presentation** – how a person publicly expresses or presents their gender identity. This can include behaviour and outward appearance such as dress, hair, make-up, body language and voice. A person's chosen name and pronouns are also common ways of expressing gender. Others perceive a person's gender through these attributes. Another term is "gender expression."

Particular care should be taken when discussing issues of sex and gender with children. Authors should thoroughly consider whether older and potentially outdated literature really means 'gender' or 'sex', as often older literature may utilise these terms interchangeably.

Nature (*verbatim* ibid.) also notes the following:
"Gender" refers to a set of cultural norms and expectations and not a "biologically defined variable". Such norms are not fixed but evolve across time and space. As such, definitions will require frequent revisiting, as the exercise of defining gender (and sexuality) is under constant flux and evolution, as is the area of study in itself.

Sexist, misogynistic and/or anti-LGBTQ+ content is ethically objectionable. Regardless of content type (research, review or opinion) and, for research, regardless of whether a research project was reviewed and approved by appropriate ethics specialists, editors may raise with the authors concerns regarding potentially sexist, misogynistic, and/or anti-LGBTQ+ assumptions, implications or speech in their submission or request modifications to (or correct or otherwise amend post-publication), and in severe cases refuse publication of (or retract post-publication) sexist, misogynistic, and/or anti-LGBTQ+ content, using the guiding criteria I-IV in the section *Research on human populations* (see above).

10. Ethics Approval in Social Science and Humanities Research

The following section was taken verbatim from *Ethics in Social Science and Humanities* (2018).

If your institutional/national framework makes no provision for a research ethics committee which you can approach to obtain authorisation or approval for the SSH research you intend to perform, you can consider the following options.

An ethics opinion may be given, for example, by:

- The coordinator's institutional research ethics committee
- The institutional research ethics committee of another research partner, or
- A relevant authority in the country (if applicable), which may give its approval.

If it is not possible to obtain ethics approval, explain why not (your explanation must be backed up by documentary evidence) and show clearly how you will make sure your research meets all ethical and legal requirements.

As a researcher, you must act ethically, regardless of whether you obtain ethics approval. You are responsible for ensuring that any research you conduct protects the physical, social and psychological well-being of research participants, regardless of the type of approval procedure your research undergoes.

11. Use of Data, Code, and Figures for Review and Publishing

Figures and data wanting to be published as part of the main article must be clearly indicated, given a figure legend according to standard scientific convention, and appropriately referred to in the text. These figures and data should represent summary statistics and trends relevant to the investigation at hand and proposed title – additional data should be supplied separately in the supplementary materials. The editorial team and board is responsible for decisions on what constitutes relevant data to include in these figures, and may request modification or correction from the author in this regard. For more details, see information for authors.

12. Content Warnings

The following content warning guidelines are based on research conducted at the University of Michigan, namely, *PLOS ONE*'s (2022) research article 'Typology of content warnings and trigger warnings: Systematic review'. Content warnings are used to provide information about sensitive content in the article so that others can make informed decisions about whether to read an article or not. These are not designed to censor or restrict the content in an article (though articles approaching sensitive content should strictly follow the ethical guidelines described in this document). Instead, these are intended to caution readers who may be sensitive to particular material as to relieve unnecessary stress and anxiety. These will also be useful for the reviewers, editors, managing editor and editor-in-chief who may be potentially reading the article.

Authors should carefully consider the content of their manuscript and compile a comprehensive list of potential content warnings. These will be reviewed by those reading the manuscript at the journal, and may be expanded or contracted.

Below is a list of example content warnings. This is by no means a complete or comprehensive list, merely a starting point for authors to reflect upon their work.

Violence	Sexual References	Discrimination/Stigma
Eugenics	Death	Mental Health
Substance Abuse	Physical/mental abuse	Racism
Sexism/misogyny	Ableism	Anti LGBTQ+ notions
Animal cruelty	Dissection	Pregnancy/Childbirth

Religious slurs	Blood	Dysphoria

13. Management of Ethics Issues

The following section was taken verbatim from *Ethics in Social Science and Humanities* (2018).

If your work raises ethics issues, particularly if more than a minimal risk or increased sensitivity are at stake, make sure you set up adequate ethics monitoring structures. These must be clearly identifiable in your work plan and your ethics self-assessment. Make sure that ethical considerations are integrated into the project from the outset, so that they are part of every relevant interaction and will continue to be addressed even after your research has been completed.

Link your self-assessment to your work plan and demonstrate how you integrate research ethics into your work and how you facilitate the identification and discussion of ethical concerns. For example

- Indicate where ethical issues are addressed in specific tasks in relevant work packages
- Include an ethics deliverable, and
- Define ethics-related milestones where relevant.

Allocate ethics resources in your description of your work and the budget. Bear in mind that you are the main person responsible for handling ethics issues in your project. You must therefore avoid handing over the task (and responsibility) of addressing ethics to anyone else, especially anyone outside your consortium.

If you decide to seek further guidance from an independent ethics advisor (or an ethics advisory board) with relevant experience in research ethics in the area of your research, give them meaningful opportunities to interact in your project by providing sufficient resources (including budget and meeting time). Keep the advisor and/or advisory board abreast of your work and your reporting schedule and make sure they are fully integrated into your project, so you can include their reports and advice in your periodic reports.

14. Other Issues

For the social sciences and humanities, multidisciplinarity and interdisciplinarity research is common and indeed an exciting opportunity that the Journal hopes to encourage. However, the following should be observed.

The following section was taken verbatim from *Ethics in Social Science and Humanities* (2018).

[Social science and humanities (SSH)] research methods are often used as part of multidisciplinary or interdisciplinary research, for example, in technology innovation, human computer interaction research and robotics. When using SSH methods in such research, SSH studies—like any other SSH research—should be conducted using the best available knowledge in the field. Social researchers and research assistants hired to conduct interviews and perform other tasks bringing them into direct contact with participants are required to be competent to carry out SSH research (Ransome, __, pp. 32-33, 41). Respondents and participants have the right to expect competent SSH researchers as collaboration partners.

If your project's main focus is not on SSH, but you plan to use SSH methods and involve participants, you are encouraged to involve people with sufficient SSH expertise and experience in the relevant work to conduct responsible and competent social science research.

In some study designs, physical interventions in research participants are integrated into interdisciplinary SSH research. If a study affects subjects' physical integrity, this part of the research must also comply with the guidelines governing medical research.

15. References and Links

AAA Statement on Ethics - Learn and Teach. (2012). American Anthropological Association. https://www.americananthro.org/LearnAndTeach/Content.aspx?ItemNumber=22869

Animal Research. (2022). PLOS. https://journals.plos.org/climate/s/animal-research

Author Guidelines. (2021, February). Wiley Online Library, Evolutionary Anthropology. https://onlinelibrary.wiley.com/page/journal/15206505/homepage/forauthors.html

BAOBAO. (2019). "BAOBAO Code of Practice." *British Association of Biological Anthropology and Osteoarchaeology.* https://www.babao.org.uk/assets/Uploads/BABAO-Code-of-Practice-2019.pdf

Batrinca, B., & Treleaven, P. C. (2015). Social media analytics: a survey of techniques, tools and platforms. *AI & Soc 30*, 89–116.

The British Psychological Society. (2014). *Code of Human Research Ethics*. https://www.bps.org.uk/sites/beta.bps.org.uk/files/Policy%20-%20Files/BPS%20Code%20of%20Human%20Research%20Ethics.pdf

British Psychological Society. (2017). *Ethics Guidelines for Internet-mediated Research*. INF206/04.2017. www.bps.org.uk/publications/policy-and-guidelines/research-guidelines-policy-documents/re searchguidelines-poli

British Sociological Association. (2017). *Statement of Ethical Practice*. https://www.britsoc.co.uk/media/24310/bsa_statement_of_ethical_practice.pdf

Charles, A., Hare-Duke, L., Nudds, H., Franklin, D., Llewellyn-Beardsley, J., et al. (2022). Typology of content warnings and trigger warnings: Systematic review. *PLOS ONE 17*(5): e0266722. https://doi.org/10.1371/journal.pone.0266722

Charter of Fundamental Rights of the European Union (2000). http://www.europarl.europa.eu/charter/pdf/text_en.pdf

Code of Ethics for Research in the Social and Behavioural Sciences involving Human Participants. (2018) As accepted by the Deans of Social Sciences in the Netherlands, 23 May 2018. https://www.utwente.nl/en/bms/research/forms-and-downloads/code-of-ethics-for-research-in -the-social-and-behavioural-sciences-dsw.pdf

ESRC Framework for Research Ethics. Updated January 2015. http://www.esrc.ac.uk/files/funding/guidance-for-applicants/esrc-framework-for-research-ethics-2015/

Ethics in Social Science and Humanities. (2018). European Commission. https://ec.europa.eu/info/sites/default/files/6._h2020_ethics-soc-science-humanities_en.pdf

European Charter for Researchers. (2000). https://euraxess.ec.europa.eu/jobs/charter/european-charter

Global Code of Conduct for Research in Resource-Poor Settings. Available at: http://www.globalcodeofconduct.org/wp-content/uploads/2018/05/Global-Code-of-Conduct-B rochure.pdf

Guillemin, M. & Gillam, L. (2004). Ethics, Reflexivity, and "Ethically important moments" in Research. *Qualitative Inquiry 10*, 261-280.

Horizon 2020 Programme. (February, 2018). Guidance. How to complete your ethics self-assessment, 5(3), 3. Available at: http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/ethics/h2020_hi_ethics-self-assess_en.pdf

Human Subjects Research (N.D). PLoS. Retrieved June 26, 2022, from https://journals.plos.org/plosbiology/s/human-subjects-research

International Sociological Association. (2001). *Code of Ethics*. Approved by the ISA Executive Committee, Autumn 2001. Available at: https://www.isa-sociology.org/en/about-isa/code-of-ethics/

Iphofen, R. (2009). *Ethical Decision-Making in Social Research. A Practical Guide*. London: Palgrave Macmillan.

Israel, M. (2015). *Research Ethics and Integrity for Social Scientists: Beyond Regulatory Compliance.* London: SAGE Publications Ltd.

Kuyumdzhieva, A. (2018). Data Ethics and Ethics Review Process. Ethics compliance under GDPR. Presentation. March 2018, Brussels.

Markham, A. & Buchanan, E. (2012). *Ethical Decision-Making and Internet Research: Recommendations from the AoIR Working Committee* (Version 2.0). http://www.aoir.org./reports/ethics.pdf

Mazmanian, A. (2014). *The mosaic effect and big data. The Business of Federal Technology.* 13 May 2014. https://fcw.com/articles/2014/05/13/fose-mosaic.aspx

PLOS ONE: accelerating the publication of peer-reviewed science. (2011). Plos.org. https://journals.plos.org/plosone/s/submission-guidelines

Pozen, D. E. (2005). The Mosaic Theory, National Security, and the Freedom of Information Act. *The Yale Law Journal 115*(3), 628-679. https://www.yalelawjournal.org/note/the-mosaic-theory-national-security-and-the-freedom-of-i nformation-act

Ransome, P. (2013). *Ethics & Values in Social Research*. Palgrave Macmillan. *Research Ethics.* (2022). Nature. https://www.nature.com/nature/editorial-policies/ethics-and-biosecurity

Sutrop, M., & Florea, C. (2010). *The Guidance Note for Researchers and Evaluators of Social Sciences and Humanities*. http://ec.europa.eu/research/participants/data/ref/fp7/89867/social-sciences-humanities_en.p df

Swedish Research Council. (2017). *Good Research Practice*. https://www.vr.se/english/analysis-and-assignments/we-analyse-and-evaluate/all-publication s/publications/2017-08-31-good-research-practice.html

Townsend, L. & Wallace, C. (2016). *Social Media Research: A Guide to Ethics*. University of Aberdeen. (ESRC Grant Number ES/M001628/1) https://www.gla.ac.uk/media/media_487729_en.pdf

UNESCO. *Code of conduct social science research*. http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/SHS/pdf/Soc_Sci_Code.pdf

Webster, M. M., & Rutz, C. (2020). How STRANGE are your study animals? *Nature, 582*(7812), 337–340. https://doi.org/10.1038/d41586-020-01751-5.

World Medical Association. (2018, July 9). *The World Medical Association-WMA Declaration of Helsinki – Ethical Principles for Medical Research Involving Human Subjects.* Wma.net; WMA - The World Medical Association-WMA Declaration of Helsinki – Ethical Principles for Medical Research Involving Human Subjects. https://www.wma.net/policies-post/wma-declaration-of-helsinki-ethical-principles-for-medical- research-involving-human-subjects/

Zook, M., Barocas, S., Boyd, D., Crawford, K., Keller, E., Gangadharan, S. P., et al. (2017). Ten simple rules for responsible big data research. *PLoS Comput Biol 13*(3), 1-10. http://journals.plos.org/ploscompbiol/article/file?id=10.1371/journal.pcbi.1005399&type=pri nt able