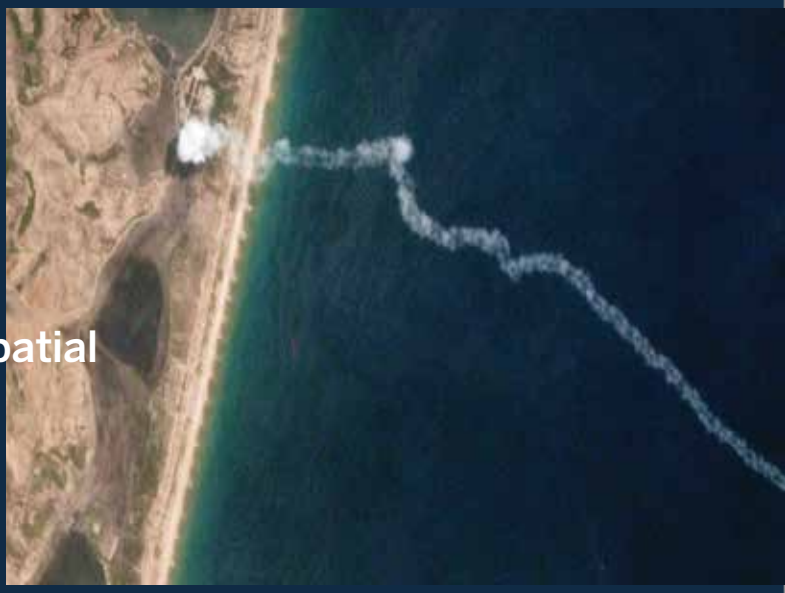
Stanley Center
FOR PEACE AND SECURITY

OPEN NUCLEAR NETWORK
a programme of One Earth Future

NUCLEAR POLICY
READOUT & RECOMMENDATIONS

The Gray Spectrum

Ethical Decision Making with Geospatial and Open Source Analysis



July 2019 | Boulder, Colorado
Organizers: Ben Loehrke, Laura Rockwood, Melissa Hanham, and Luisa Kenausis

Geospatial and open source analysts face decisions in their work that can directly or indirectly cause harm to individuals, organizations, institutions, and society. Though analysts may try to do the right thing, such ethically informed decisions can be complex. This is particularly true for analysts working on issues related to nuclear nonproliferation or international security, whose decisions on whether to publish certain findings could have far-reaching consequences. These experts may not have access to ethical guidance and resources that can improve decision making, enhance the professionalism of their craft, deter unethical behavior, or provide support systems for difficult decisions.[1]

This community of analysts has risen quickly to become a trusted source for journalists and valuable contributors to the public policy conversation on nonproliferation. While the capabilities of organizations and individual analysts continue to improve, the environment in which these analysts operate is becoming more contested. Large shifts in the media ecosystem have displaced traditional gatekeepers in journalism, lowered barriers to entry for analysts, and changed where and how people get their news. This disruption has hit traditional newsrooms hardest.[2] Misinformation, disinformation, and other assaults on objective reporting are thriving. Trust is becoming a scarce and volatile commodity. Sound ethical practices, in addition to being the right thing to do, could help analysts reinforce their professionalism and credibility.

In July 2019, the Stanley Center for Peace and Security and the Open Nuclear Network (ONN) program of One Earth Future Foundation convened a workshop with nonproliferation experts, open source intelligence analysts, journalists, and stakeholders from satellite imagery firms. The workshop asked participants to explore ethical challenges with their work, identify needed resources, and consider options for enhancing the ethical practices of geospatial and open source analysis communities.

This paper brings forward observations from that workshop. It describes ethical challenges that stakeholders from relevant communities face. It concludes with a list of needs participants identified, along with possible strategies for promoting sustaining behaviors that could enhance the ethical conduct of the community of nonproliferation analysts working with geospatial and open source data. This paper aims to start a conversation, get more stakeholders involved, and expedite the work of individuals and organizations collaborating on enhanced ethical practices in the field.

Photo above: Exhaust plume from a North Korean short-range ballistic missile test. Photo: May 4, 2019, Planet Labs Inc., CC-BY-NC-SA.

Weighing Social Good and Possible Harm

Analysts working with geospatial and open source data have capabilities that not long ago were exclusive to states.[3] A community of open source analysts can craft intelligence products, break news, add evidence to reporting, give insight where governments cannot, and provide accurate information to publics on issues critical to peace and security. This gives individuals in this community considerable power and relative autonomy to exert influence on public policy. Fortunately, the effects of this community's work have been strongly positive. The community provides quality and timely information to journalists, decision makers, and publics. The result is a more dynamic, more participatory, and better-informed public policy conversation.

Analysts can also abuse their influence—unintentionally, out of inexperience, or with nefarious intent—in ways that risk ethical harm. Analysts may publish sloppy analysis, misinformation, or disinformation. Analysts can cause harm by infringing on individuals' reasonable expectations of privacy. They can also publish information that intensifies problems for international security. In a prescient 1987 report, the US Congress Office of Technology Assessment identified ways that organizations using commercial satellite imagery could complicate national security and foreign policy by:

- Disseminating information on active military operations.
- Revealing information considered sensitive by foreign governments, prompting retaliation from that government.
- Revealing facts about an unfolding crisis, thereby making such a crisis more difficult for decision makers.
- Providing intelligence to third parties.
- Misinterpreting data in such a way as to precipitate a crisis.[4]

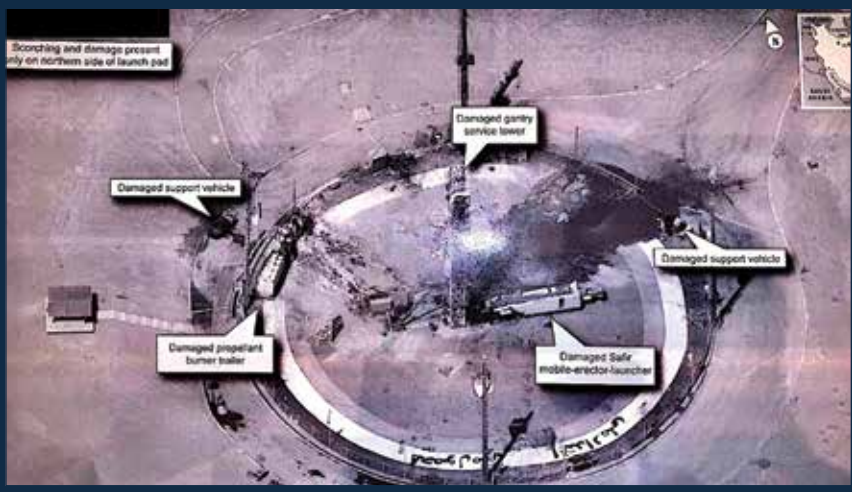
Of course, ethics in practice are rarely black and white. A single action can provide a social good and risk ethical harm. Balancing the possible ethical consequences of their work is a dilemma for analysts working with geospatial data and open source intelligence (OSINT). Participants at the workshop shared stories of their own dilemmas on whether to publish certain analyses. One analyst had to weigh obligations to help people in harm's way against the risks of adding to panic (see "Ethical Dilemma: Fukushima" below). Others had to weigh the analytical value of an analysis against the possibility that its publication could help a proliferator troubleshoot its nuclear program. Analysts also shared dilemmas about analyses that, if published, could have revealed sensitive information about troop location or movements.

Ethical dilemmas like these are a part of the day-to-day work of geospatial and OSINT analysts. While participants in the workshop suggested that awareness of ethical dilemmas is growing, the community of analysts working on nonproliferation has not yet had a focused conversation on why ethics are important or possible goals for enhancing ethical practices. Few guidelines and resources are available to them that could move those conversations forward.

Accountability and Its Challenges

One essential aim in journalism ethics is accountability.[5] Given the power of the press, it is important for journalists to take responsibility for their individual work. This principle is part of the foundation of ethical journalism.[6]

Commercial satellite image shows smoke rising from an explosion at the Imam Khomeini Space Center in Iran. August 29, 2019. Photo: © Planet Labs Inc. CC-BY-NC-SA.



Higher quality image, possibly from classified US sources, of the accident at the Imam Khomeini Space Center site that President Donald Trump tweeted on August 30, 2019. Photo: President Donald Trump/Twitter.

Geospatial analysts ought to share that aim. Given the risks of harm with geospatial analyses, stakeholders in the public have the right to hold analysts to account for their work. Accountability means "that one can be constrained to reveal what one has done and why one has done it; thus, the action and the reasons for it are open to a critique by strangers who have few inhibitions about demanding justification and reasonable grounds."[7]

The challenge is that analysts must be able to discuss their work and explain how they approached an ethical decision. That requires analysts to anticipate and be responsive to possible ethical dilemmas. Without training, practice, and support with ethical decision making, it can be difficult for individuals to meet that standard. The majority of participants in the workshop reported that they regularly consider the ethical implications of their work and demonstrate sound ethical decision making. Yet participants also noted that they and their organizations generally lack ethics training. Most participants learned ethics through independent study, and many were not aware of any resources available to them on ethical decision making.

This lack of resources affects the geospatial and OSINT community as a whole. When faced with unfamiliar or complex issues, analysts seem to be navigating ethical dilemmas without much guidance, experience, or peer support. Some individuals might rise to the challenge, find the resources they need, and demonstrate accountability to their ethical practices. Others might not be able to, even if that means falling short of their own expectations with ethics.

Tools for Ethical Decision Making

The field of applied ethics offers a few basic tools that can help professionals and organizations develop their ethical practices. The workshop provided participants with brief overviews of several tools: decision-making frameworks, codes of conduct, and discourse.

Decision-Making Frameworks

Making good ethical decisions takes practice.

Ethical decision-making frameworks can build structure into practice and, over time, help make ethics second nature for professionals. Frameworks provide a method for interrogating ethical dilemmas, deciding upon courses of action, and explaining those decisions to others.[8] The Markkula Framework for Ethical Decision Making offers one such resource.[9] The framework, shown in the box on the next page, asks individuals to consider five approaches to ethical standards.[10] It then guides individuals through a 10-step process.

This framework can be used during actual decisions or practiced through discussion of case studies. Participants in the workshop familiarized themselves with the framework by applying it to real ethical dilemmas shared by colleagues, including the Fukushima example at the right.

Ethical Dilemma: Fukushima

Forty-eight hours after the tsunami that crippled the Fukushima Daiichi nuclear plant on March 11, 2011, an analyst in the open source community acquired a satellite image of the reactors. It was immediately clear to her that the damage to the reactors and potential for radiation exposure to local residents were far more severe than the Japanese government's 25-km evacuation zone would imply.

This analyst felt compelled to do something that could give populations affected by the disaster a better chance to protect themselves from radiation exposure. The analyst also believed she might be the only one with the image.

Should she have published the image or not, and why?

Publishing could help get information to residents and provoke the government to better protect those at greatest risk to radiation exposure. Yet publishing might also risk amplifying chaos and hindering first responders. Not publishing could preserve room for the government and first responders to act, though doing nothing would make her feel as if she was failing to meet an ethical obligation to help those in need.

This analyst had few resources to guide her ethical decision making and only four hours to decide. She opted to not publish the information but instead disseminate it to contacts in several governments and nongovernmental organizations.

Commercial satellite image showing damage to the Fukushima Diichi Power Plant. Japan, March 16, 2011. Photo: © 2011 Digital Globe, Inc.

Markkula Framework for Ethical Decision Making

Recognize an Ethical Issue

1. Could this decision or situation be damaging to someone or to some group? Does this decision involve a choice between a good and bad alternative, or perhaps between two "goods" or between two "bads"?
2. Is this issue about more than what is legal or what is most efficient? If so, how?

Get the Facts

3. What are the relevant facts of the case? What facts are not known? Can I learn more about the situation? Do I know enough to make a decision?
4. What individuals and groups have an important stake in the outcome? Are some concerns more important? Why?
5. What are the options for acting? Have all the relevant persons and groups been consulted? Have I identified creative options?

Evaluate Alternative Actions

6. Evaluate the options by asking the following questions:
   - Which option will produce the most good and do the least harm? (The Utilitarian Approach)
   - Which option best respects the rights of all who have a stake? (The Rights Approach)
   - Which option treats people equally or proportionately? (The Justice Approach)
   - Which option best serves the community as a whole, not just some members? (The Common Good Approach)
   - Which option leads me to act as the sort of person I want to be? (The Virtue Approach)

Make a Decision and Test It

7. Considering all these approaches, which option best addresses the situation?
8. If I told someone I respect—or told a television audience—which option I have chosen, what would they say?

Act and Reflect on the Outcome

9. How can my decision be implemented with the greatest care and attention to the concerns of all stakeholders?
10. How did my decision turn out and what have I learned from this specific situation?

Codes of Conduct

Many professions—including medicine, journalism, and science—have adopted ethical codes of conduct. They are also pervasive in business communities as part of efforts toward corporate social responsibility. It might be worth considering a code of conduct for professionals using geospatial data and OSINT for nonproliferation analysis.

Codes of conduct can serve a number of functions. Codes can:

- Give moral guidance to professionals.
- Help the public hold professionals accountable to their pronounced values.
- Strengthen group identity and common purpose behind ethical practices.
- Enhance public trust in a profession.
- Gatekeep the profession by creating a barrier to entry.
- Deter unethical behavior.
- Serve as a support system that can be leaned on when resisting improper demands.
- Serve as a basis for adjudicating disputes among professionals.[11]

Participants in the workshop frequently raised the possibility of creating, adapting, or adopting a code of conduct that could serve those functions for their community of analysts. Codes exist from communities facing similar challenges, including those from the Society of Professional Journalists and for geographic information system (GIS) professionals (see appendix).

Any code of conduct addressing the ethics of geospatial and OSINT analysis would need to be sensitive to the diversity of stakeholders. Workshop participants noted that development of a code would need to incorporate input from stakeholders with different perspectives and experiences. A code should be international in scope, not dominated by stakeholders from any one country, and consider the national cultures of its stakeholders. While a code can be used to distinguish trained analysts from others, its development and application should be more open than exclusionary. It should not become a purely top-down or elitist exercise.

A code of conduct cannot be an end in itself. Workshop participants voiced concerns that some codes serve

as little more than branding exercises. Despite the popularity of codes, there is little evidence that they improve ethical practices.[12] Codes need to be integrated into broader efforts in the professional community supporting them, including providing ethics education to individuals, continuing dialogue among professionals on the application of the code, incentivizing adherence to a code, and enforcing the code with those who transgress it. ONN is committing to put a code of conduct in place for its employees that will be tied to their employment.

Discourse and Moral Reasoning

Ethics are also a social process. Stakeholders develop norms and coordinate ethical practices in part by talking, arguing in the open, and arriving at mutual understandings of the way things ought to be—senses of shared virtues, principles, and ideas of what is good and just. Such dialogic approaches to ethics at their best can produce more durable outcomes and promote solidarity within a community of practice. For these approaches to work, however, participants need to be able to think through moral dilemmas, justify the ethics of their actions, and clearly and persuasively argue their case in a reasoned, public discourse.

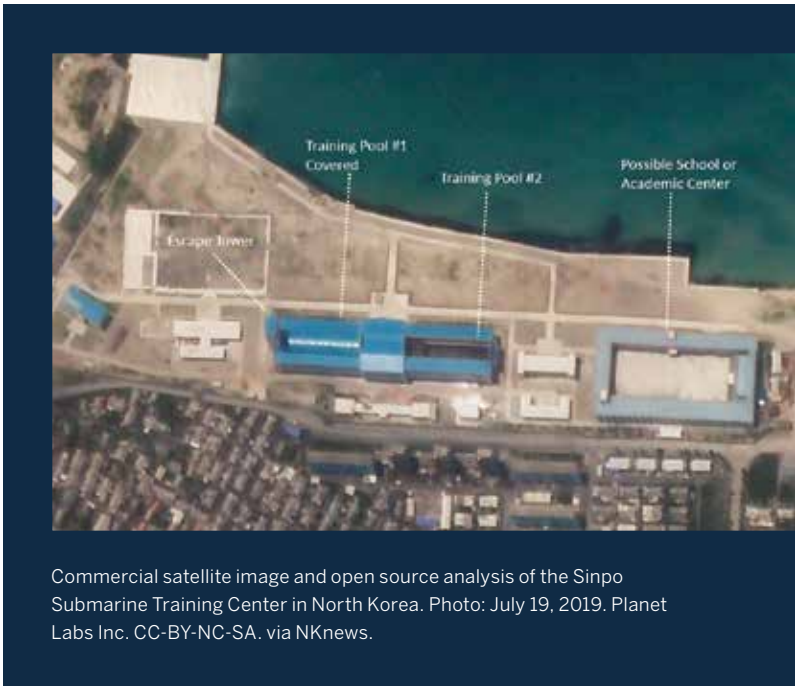
At this early stage, stakeholders in the community of analysts using geospatial and OSINT data may not yet have had initial discussions with each other to develop those shared understandings. They also may not have practice participating in those discussions. Even journalists, in a profession known for high moral reasoning skills, might need to find new places to exercise the skills that newsrooms once imparted.[13] And it is unclear where stakeholders might find forums in which to constructively engage this conversation.

This points to a gap in ethical training and resources for this community. To discuss shared approaches and navigate ethical dilemmas, individuals need to develop capacities for ethical reasoning, moral reflection, and explanation. But most stakeholders in this community have not had been trained to do so and might lack the resources and incentives to train themselves.

Frameworks and codes can help bridge that gap. They give structure to ethical decision making, give professionals standards to which they can point, and provide reference points for how to justify ethical practices. But for them to work effectively, there may need to be a broader effort at ethics education with stakeholders in the community.

Paths Forward for the Nonproliferation Community

Participants in the workshop were overwhelmingly interested in coordinating with peers and colleagues to enhance the ethical practices of the community of analysts using geospatial data and OSINT. The demand is there. But the challenge is defining what specific resources are most needed and how to establish sustainable behaviors among community stakeholders.



Commercial satellite image and open source analysis of the Sinpo Submarine Training Center in North Korea. Photo: July 19, 2019. Planet Labs Inc. CC-BY-NC-SA. via NKnews.

The workshop asked participants to explore what the community needs and strategies for how to fill those needs. Below is a summary of observations from that exercise and the ideas that participants generated.

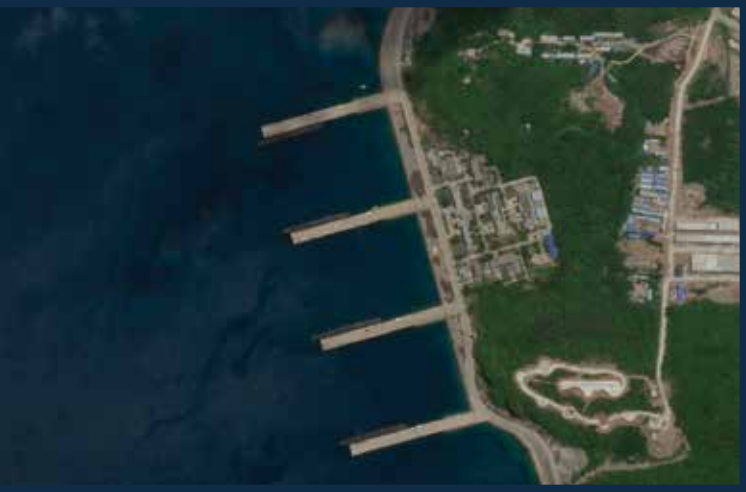
Education

To a survey question asking participants how they would rate the resources available to them for supporting ethical decision making with geospatial data, the overwhelming response was, "I am not aware of any such resources."

This points to a system-wide problem. Awareness of ethical dilemmas and ethical reasoning skills are essential for sustained ethical practices. Yet professionals in the field haven't had training to develop those skills, educators do not have easy access to materials to provide training, students entering the field might not have this as part of coursework, and the cycle continues as those students become professionals.

Participants identified several approaches that could make it easier for professionals, educators, and students to improve ethics education for the field overall:

- **Start a body of literature.** While many professional fields have had rich discussions on applied ethics, there has not yet been a discussion in the literature on the ethics of using geospatial and OSINT data in international security contexts. As a starting point, authors could consider characterizing the ethical challenges and risks associated with such analyses and create case studies—both positive and negative—on real ethical dilemmas. In developing this literature, community stakeholders should consider how to coordinate their research.



Commercial satellite image of four Chinese Jin-class (Type 094) SSBN at Longpo Naval Base on Hainan Island. Photo: June 2, 2017, Planet Labs Inc. CC-BY-NC-SA.

- **Develop curricula.** Model curricula could help scale up ethics education for the field. Though there is coursework within the academic community on exploiting open source data, there is no formalized curricula on analyzing satellite imagery for security-related events and activity. Building up curricula, syllabi, and coursework could catalyze broader, open discourse and advancements in the field while establishing an inherent platform for ethics education. Educators could develop ethics-specific coursework or modules, as similar projects have done in courses on broader geographic information systems (GIS).[14] This effort could also create a library of resources for the community, including an "Applied Ethics 101" section and resources in multiple languages.

- **Provide Training.** Many stakeholders in this field have not had professional training on ethics. This includes analysts themselves, as well as the organizations that employ them and journalists who often cite them. There is a need to improve ethics awareness and reasoning skills among those stakeholders. Options for such ethics trainings could include professional development opportunities, professional certifications, workshops, dilemma-based table-top exercises, and webinars. Other trainings could help journalists and aspiring analysts share understandings about geospatial and OSINT methods, their limits, and responsible uses of such analyses. Trained individuals could even serve as mentors or "ethics champions" to help promote ethical practices in the community.

Code of Ethics

A code of ethics for practitioners and students using geospatial and OSINT data could serve important functions for the community, including giving moral guidance to practitioners, enhancing public trust in their work, and deterring unethical behavior. Participants in the workshop saw a significant value in developing such a code and offered ideas for potential approaches with a code of ethics.

A code of ethics can take many forms but needs to serve as a statement of principles with guidelines or a checklist that adherents can follow. Existing codes of conduct from journalism or GIS professionals (see appendix) are useful examples that could be borrowed from when developing such a code.

The process of developing a code of ethics and sustaining a conversation around it can be more important than the code itself. That process is an opportunity to have a community-wide discussion that raises awareness, promotes dialogue, and elevates the community's shared values. Workshop participants offered several suggestions that might help design that process:

- A code could be drafted by a diverse group of community members who have been trained on ethics, including some journalists.

- Such a code could be integrated back into training programs and curricula.

- Individuals and organizations who sign up to the code and/or get training on the code could promote that fact in their professional biographies or include an ethics seal of approval on their publications.

- Those who draft the code could form an ethics committee, with bylaws and regular meetings, available to promote and refine the code.

- An organization could be established to maintain such a code and facilitate a membership network that adheres to the code. Board members and executives could be voted on by the members. Membership could be multilevel, free to individuals but supported by dues-paying organizations.

- The organization can also be tasked with enforcing the code or rescinding membership for those who do not uphold the code.

For a systematic approach, several participants at the workshop sketched out a support program for trained analysts. In this example, funders could support an ethics training program and signal preference to grant applicants with trained analysts. This would encourage analysts to apply to the training program, for their employers to seek trained analysts, and for those involved to support others getting training.

Peer Support

An immediate place to start enhancing ethical practices within the community is among peers. Workshop participants shared stories of real life ethical dilemmas from their analytical work in which they often navigated ethical challenges independently and with no immediate support network to help. Participants also described a need to continually improve the quality of analyses

and a culture of accountability where analysts acknowledge and fix errors and call out bad practice.

A peer review process could help with ethical practices and promote a culture of accountability. Participants in the workshop suggested creation of a peer review network that can circulate, review, and weigh whether to support the analytical products of participants in the network. Such a network could include ethical reviews or red team analyses of a publication. The network could operate with regional working groups and create an infrastructure of Slack workspaces, WhatsApp groups, listservs, or hotlines. While participants discussed how peer reviews could improve the quality of analyses, they also noted difficulties with implementation, including the effort required to build trust within such a network and the tensions between the time required for reviews and the pressure to publish timely information.

There is also a need to create more engagement between experts and journalists. Given the importance of those relationships in the community, a constructive dialogue on analytical and ethical practices between analysts and journalists might help the work of both. To make those connections easier, a list of trained experts and skilled journalists—including editors and points of contact at journalism societies—could be circulated within stakeholder communities.

Part of promoting accountability with analysts is having a means to dispassionately call out bad ethical or analytical practices. Participants suggested that a peer network could create an ombudsman within the community. As a neutral arbiter, such an ombudsman could investigate claims of analytical or ethical malpractice, resolve disputes, and identify systematic shortcomings within the community. Another approach to promoting accountability participants suggested is to have dedicated fact checkers or response teams that can rebut or refute shoddy analysis, misinformation, or disinformation.

Stakeholder Support

The participants recognized that a failure or lapse in judgement by one analyst in this community would affect the perception of the craft as a whole. However, the conversation on ethical practices with geospatial data and OSINT needs to expand beyond the analysts themselves. Participants in the workshop noted that other stakeholders—governments, commercial providers, funders, organizations, management teams, etc.—should contribute to the discussion on ethics in the community and reinforce sustaining behaviors. In fact, there may be some perverse incentives in the community to publish analyses quickly rather than after thorough review and quality control. Initial steps for gaining the involvement of such stakeholders could include having a focused discussion on ethics at major international conferences. Analysts in this community could also seek advice from and coordinate with organizations in adjacent fields with similar goals, like the Poynter Institute or the US Geospatial Intelligence Foundation.

Commercial satellite image of the Stena Impero—a British oil tanker seized by Iran on July 19, 2019—in the Port of Bandar Abbas. Photo: July 20, 2019. Planet Labs Inc. CC-BY-NC-SA.

Conclusion

Analysts working with geospatial and OSINT for nonproliferation should work to enhance their ethical practices out of moral obligation. It's the right thing to do. But there are broader benefits. By coordinating with each other to enhance the community's ethical practices overall, analysts could go further and enhance the professionalism of their craft, improve the sustainability and stature of their community, and demonstrate their trustworthiness.

The workshop has already had the impact of ONN deciding to design its new organization around ethical open source analysis. New analysts will be trained in best practices, and continuing analysts will have opportunities to refresh their practice. In addition, ONN will tie employment with adherence to a code of conduct on ethical research practices.

The conversation on how to coordinate on ethical practices is beginning, in part thanks to individual participants in the workshop. Hopefully, these observations from the workshop will help more stakeholders in this community explore ethical challenges with their work, identify needed resources, and consider options for how to enhance the ethical practices of geospatial and open source analysis communities.

This Readout and Recommendations summarizes the primary findings of the workshop as interpreted by the organizers. It should not be assumed that every participant subscribes to all of its recommendations, observations, and conclusions.

Appendix: Example Codes of Ethics

Society of Professional Journalists Code of Ethics[15]

Preamble

Members of the Society of Professional Journalists believe that public enlightenment is the forerunner of justice and the foundation of democracy. Ethical journalism strives to ensure the free exchange of information that is accurate, fair and thorough. An ethical journalist acts with integrity.

The Society declares these four principles as the foundation of ethical journalism and encourages their use in its practice by all people in all media.

Seek Truth and Report It

Ethical journalism should be accurate and fair. Journalists should be honest and courageous in gathering, reporting and interpreting information.

Journalists should:

- Take responsibility for the accuracy of their work. Verify information before releasing it. Use original sources whenever possible.
- Remember that neither speed nor format excuses inaccuracy.
- Provide context. Take special care not to misrepresent or oversimplify in promoting, previewing or summarizing a story.
- Gather, update and correct information throughout the life of a news story.
- Be cautious when making promises, but keep the promises they make.
- Identify sources clearly. The public is entitled to as much information as possible to judge the reliability and motivations of sources.
- Consider sources' motives before promising anonymity. Reserve anonymity for sources who may face danger, retribution or other harm, and have information that cannot be obtained elsewhere. Explain why anonymity was granted.
- Diligently seek subjects of news coverage to allow them to respond to criticism or allegations of wrongdoing.
- Avoid undercover or other surreptitious methods of gathering information unless traditional, open methods will not yield information vital to the public.
- Be vigilant and courageous about holding those with power accountable. Give voice to the voiceless.
- Support the open and civil exchange of views, even views they find repugnant.
- Recognize a special obligation to serve as watchdogs over public affairs and government. Seek to ensure that the public's business is conducted in the open, and that public records are open to all.
- Provide access to source material when it is relevant and appropriate.
- Boldly tell the story of the diversity and magnitude of the human experience. Seek sources whose voices we seldom hear.
- Avoid stereotyping. Journalists should examine the ways their values and experiences may shape their reporting.
- Label advocacy and commentary.
- Never deliberately distort facts or context, including visual information. Clearly label illustrations and re-enactments.
- Never plagiarize. Always attribute.

Minimize Harm

Ethical journalism treats sources, subjects, colleagues and members of the public as human beings deserving of respect.

Journalists should:

- Balance the public's need for information against potential harm or discomfort. Pursuit of the news is not a license for arrogance or undue intrusiveness.
- Show compassion for those who may be affected by news coverage. Use heightened sensitivity when dealing with juveniles, victims of sex crimes, and sources or subjects who are inexperienced or unable to give consent. Consider cultural differences in approach and treatment.
- Recognize that legal access to information differs from an ethical justification to publish or broadcast.
- Realize that private people have a greater right to control information about themselves than public figures and others who seek power, influence or attention. Weigh the consequences of publishing or broadcasting personal information.
- Avoid pandering to lurid curiosity, even if others do.
- Balance a suspect's right to a fair trial with the public's right to know. Consider the implications of identifying criminal suspects before they face legal charges.
- Consider the long-term implications of the extended reach and permanence of publication. Provide updated and more complete information as appropriate.

Act Independently

The highest and primary obligation of ethical journalism is to serve the public.

Journalists should:

- Avoid conflicts of interest, real or perceived. Disclose unavoidable conflicts.
- Refuse gifts, favors, fees, free travel and special treatment, and avoid political and other outside activities that may compromise integrity or impartiality, or may damage credibility.
- Be wary of sources offering information for favors or money; do not pay for access to news. Identify content provided by outside sources, whether paid or not.
- Deny favored treatment to advertisers, donors or any other special interests, and resist internal and external pressure to influence coverage.
- Distinguish news from advertising and shun hybrids that blur the lines between the two. Prominently label sponsored content.

Be Accountable and Transparent

Ethical journalism means taking responsibility for one's work and explaining one's decisions to the public.

Journalists should:

- Explain ethical choices and processes to audiences. Encourage a civil dialogue with the public about journalistic practices, coverage and news content.
- Respond quickly to questions about accuracy, clarity and fairness.
- Acknowledge mistakes and correct them promptly and prominently. Explain corrections and clarifications carefully and clearly.
- Expose unethical conduct in journalism, including within their organizations.
- Abide by the same high standards they expect of others.

Jhe SPJ Code of Ethics is a statement of abiding principles supported by additional explanations and position papers that address changing journalistic practices. It is not a set of rules, rather a guide that encourages all who engage in journalism to take responsibility for the information they provide, regardless of medium. The code should be read as a whole; individual principles should not be taken out of context. It is not, nor can it be under the First Amendment, legally enforceable.

Sigma Delta Chi's first Code of Ethics was borrowed from the American Society of Newspaper Editors in 1926. In 1973, Sigma Delta Chi wrote its own code, which was revised in 1984, 1987, 1996 and 2014.

A GIS Code of Ethics[16]

Approved by the URISA Board of Directors | April 9, 2003

This Code of Ethics is intended to provide guidelines for GIS (geographic information system) professionals. It should help professionals make appropriate and ethical choices. It should provide a basis for evaluating their work from an ethical point of view. By heeding this code, GIS professionals will help to preserve and enhance public trust in the discipline.

This code is based on the ethical principle of always treating others with respect and never merely as means to an end: i.e., deontology. It requires us to consider the impact of our actions on other persons and to modify our actions to reflect the respect and concern we have for them. It emphasizes our obligations to other persons, to our colleagues and the profession, to our employers, and to society as a whole. Those obligations provide the organizing structure for these guidelines.

The text of this code draws on the work of many professional societies. It is not surprising that many codes of ethics have a similar structure and provide similar guidelines to their professionals, because they are based upon a similar concept of morality. A few of the guidelines that are unique to the GIS profession include the encouragement to make data and findings widely available, to document data and products, to be actively involved in data retention and security, to show respect for copyright and other intellectual property rights, and to display concern for the sensitive data about individuals discovered through geospatial or database manipulations. Longer statements expand on or provide examples for the GIS Profession.

A positive tone is taken throughout the text of this code. GIS professionals commit themselves to ethical behavior rather than merely seeking to avoid specific acts. The problems with listing acts to be avoided are: 1) there are usually reasonable exceptions to any avoidance rule and 2) there is implicit approval of any act not on the list. Instead, this code provides a list of many positive actions. These explicit actions illustrate respect for others and

help strengthen both an understanding of this ethos and a commitment to it.

This code is not expected to provide guidelines for all situations. Ambiguities will occur and personal judgment will be required. Sometimes a GIS professional becomes stuck in a dilemma where two right actions are in conflict with each other or any course of action violates some aspect of this code. Help might come from talking with colleagues or reading relevant works such as those listed in the bibliography. Ultimately, a professional must reflect carefully on such situations before making the tough decision. Contemplating the values and goals of alternative ethical paradigms may be useful in reaching a decision:

- View persons who exemplify morality as your own guide (Virtue Ethics)
- Attempt to maximize the happiness of everyone affected (Utilitarianism)
- Only follow maxims of conduct that everyone else could adopt (Kantianism)
- Always treat other persons as ends, never merely as means (Deontology)

I. Obligations to Society

The GIS professional recognizes the impact of his or her work on society as a whole, on subgroups of society including geographic or demographic minorities, on future generations, and inclusive of social, economic, environmental, or technical fields of endeavor. Obligations to society shall be paramount when there is conflict with other obligations. Therefore, the GIS professional will:

1. Do the Best Work Possible

- Be objective, use due care, and make full use of education and skills.
- Practice integrity and not be unduly swayed by the demands of others.
- Provide full, clear, and accurate information.
- Be aware of consequences, good and bad.
- Strive to do what is right, not just what is legal.

2. Contribute to the Community to the Extent Possible, Feasible, and Advisable

- Make data and findings widely available.
- Strive for broad citizen involvement in problem definition, data identification, analysis, and decision-making.
- Donate services to the community.

3. Speak Out About Issues

- Call attention to emerging public issues and identify appropriate responses based on personal expertise.
- Call attention to the unprofessional work of others. First take concerns to those persons; if satisfaction is not gained and the problems warrant, then additional people and organizations should be notified.
- Admit when a mistake has been made and make corrections where possible.

II. Obligations to Employers and Funders

The GIS professional recognizes that he or she has been hired to deliver needed products and services. The employer (or funder) expects quality work and professional conduct. Therefore the GIS professional will:

1. Deliver Quality Work

- Be qualified for the tasks accepted.
- Keep current in the field through readings and professional development.
- Identify risks and the potential means to reduce them.
- Define alternative strategies to reach employer/funder goals, if possible, and the implications of each.
- Document work so that others can use it. This includes metadata and program documentation.

2. Have a Professional Relationship

- Hold information confidential unless authorized to release it.
- Avoid all conflicts of interest with clients and employers if possible, but when they are unavoidable, disclose that conflict.
- Avoid soliciting, accepting, or offering any gratuity or inappropriate benefit connected to a potential or existing business or working relationship.
- Accept work reviews as a means to improve performance.
- Honor contracts and assigned responsibilities.
- Accept decisions of employers and clients, unless they are illegal or unethical.
- Help develop security, backup, retention, recovery, and disposal rules.
- Acknowledge and accept rules about the personal use of employer resources. This includes computers, data, telecommunication equipment, and other resources.

- Strive to resolve differences.

3. **Be Honest in Representations**

   - State professional qualifications truthfully.
   - Make honest proposals that allow the work to be completed for the resources requested.
   - Deliver an hour's work for an hour's pay.
   - Describe products and services fully.
   - Be forthcoming about any limitations of data, software, assumptions, models, methods, and analysis.

III. Obligations to Colleagues and the Profession

The GIS professional recognizes the value of being part of a community of other professionals. Together, we support each other and add to the stature of the field. Therefore, the GIS professional will:

1. **Respect the Work of Others.**

   - Cite the work of others whenever possible and appropriate.
   - Honor the intellectual property rights of others. This includes their rights in software and data.
   - Accept and provide fair critical comments on professional work.
   - Recognize the limitations of one's own knowledge and skills and recognize and use the skills of other professionals as needed. This includes both those in other disciplines and GIS professionals with deeper skills in critical sub-areas of the field.
   - Work respectfully and capably with others in GIS and other disciplines.
   - Respect existing working relationships between others, including employer/employee and contractor/client relationships.
   - Deal honestly and fairly with prospective employees, contractors, and vendors.

2. **Contribute to the Discipline to the Extent Possible**

   - Publish results so others can learn about them.
   - Volunteer time to professional educational and organizational efforts: local, national, or global.
   - Support individual colleagues in their professional development. Special attention should be given to underrepresented groups whose diverse backgrounds will add to the strength of the profession.

IV. Obligations to Individuals in Society

The GIS professional recognizes the impact of his or her work on individual people and will strive to avoid harm to them. Therefore, the GIS professional will:

1. **Respect Privacy**

   - Protect individual privacy, especially about sensitive information.
   - Be especially careful with new information discovered about an individual through GIS-based manipulations (such as geocoding) or the combination of two or more databases.

2. **Respect Individuals**

   - Encourage individual autonomy. For example, allow individuals to withhold consent from being added to a database, correct information about themselves in a database, and remove themselves from a database.
   - Avoid undue intrusions into the lives of individuals.
   - Be truthful when disclosing information about an individual.
   - Treat all individuals equally, without regard to race, gender, or other personal characteristic not related to the task at hand.

Endnotes

[1] The organizers of this workshop and paper give special thanks to Subramaniam Vincent, director of journalism and media ethics at the Markkula Center, for his essential roles as a facilitator, educator, and thought partner in the workshop.

[2] Pew Research Center, "U.S. Newsroom Employment Has Dropped by a Quarter Since 2008, with Greatest Decline at Newspapers," July 9, 2019, https://www.pewresearch.org/fact-tank/2019/07/09/u-s-newsroom-employment-has-dropped-by-a-quarter-since-2008/.

[3] Frank Pabian, "Commercial Satellite Imagery as an Evolving Open-Source Verification Technology: Emerging Trends and Their Impact for Nuclear Nonproliferation Analysis," JRC Technical Reports, 2015, https://ec.europa.eu/jrc/en/publication/commercial-satellite-imagery-evolving-open-source-verification-technology-emerging-trends-and-their; Tamara Patton, Jeffrey Lewis, Melissa Hanham, Catherine Dill, and Lily Vaccaro, "Emerging Satellites for Non-Proliferation and Disarmament Verification," Vienna Center for Disarmament and Non-Proliferation, January 2016, https://vcdnp.org/emerging-satellites-for-non-proliferation-and-disarmament-verification/.

[4] Office of Technology Assessment, "Commercial Newsgathering from Space," May 1987, pp. 30-33, https://www.cia.gov/library/readingroom/docs/CIA-RDP05T02051R000200260001-0.pdf.

[5] Theodore L. Glasser and James S. Ettema, "Ethics and Eloquence in Journalism: An Approach to Press Accountability," *Journalism Studies* 9, no. 4 (2008).

[6] See appendix, Society of Professional Journalists Code of Ethics.

[7] Alvin Gouldner, *The Dialectic of Ideology and Technology: The Origins, Grammar, and Future of Ideology* (New York: Seabury Press, 1976), 102.

[8] For a discussion on common approaches to ethical standards and other frameworks, see Sheila Bonde and Paul Firenze, "Making Choices: A Framework for Making Ethical Decisions," Program in Science and Technology Studies, Brown University, 2011, https://www.brown.edu/academics/science-and-technology-studies/framework-making-ethical-decisions.

[9] For examples of other frameworks, see Michael Davis, *Ethics and the University*, (New York: Routledge, 1999), pp. 166-167; or Matthew Keefer and Kevin Ashley, "Case-Based Approaches to Professional Ethics: A Systematic Comparison of Students' and Ethicists' Moral Reasoning," *Journal of Moral Education* 30, no. 4 (2011).

[10] Markkula Center, "A Framework for Ethical Decision Making," May 2009, https://www.scu.edu/ethics/ethics-resources/ethical-decision-making/a-framework-for-ethical-decision-making/.

[11] Mark Frankel, "Professional Codes: Why, How, and with What Impact?", *Journal of Business Ethics* 8 (1989): 109-115.

[12] Andrew Brien, "Regulating Virtue: Formulating, Engendering, and Enforcing Ethical Codes," *Business and Professional Ethics Journal* 15, no. 1 (1996): 21-52; Patrick Erwin, "Corporate Codes of Conduct: The Effects of Code Content and Quality on Ethical Performance," *Journal of Business Ethics* 99, no. 4 (2011): 535-548.

[13] Patrick Ferrucci, Edson C. Tandoc Jr., and Erin E. Schauster, "Journalists Primed: How Professional Identity Affects Moral Decision Making," *Journalism Practice* (2019): 10-14. DOI:10.1080/17512786.2019.1673202.

[14] See David DiBiase, Christopher Goranson, Francis Harvey, and Dawn Wright, "The GIS Professional Ethics Project: Practical Ethics Education for GIS Professionals," in *Teaching Geographic Information Science and Technology in Higher Education*, ed. David Unwin, Nicholas Tate, Kenneth Foote, and David DiBiase (London: Wiley and Sons, December 2011), 199-210, https://www.e-education.psu.edu/sites/default/files/ethics/DiBiase_et_al_GIS_Pro_Ethics_ICC2009.pdf; John A. Dutton E-Education Institute, "Ethics Education for Geospatial Professionals," Penn State University, https://www.e-education.psu.edu/research/projects/gisethics.

[15] Society of Professional Journalists, "SPJ Code of Ethics," September 6, 2014. https://www.spj.org/ethicscode.asp

[16] Urban and Regional Information Systems Association (URISA) Ethics Task Force, "GIS Code of Ethics," April 9, 2003. https://www.urisa.org/about-us/gis-code-of-ethics/

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