Evolving the IRB: Building Robust Review for Industry Research

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Evolving the IRB: Building Robust Review for Industry Research

Molly Jackman and Lauri Kanerva*

Abstract

Increasingly, companies are conducting research so that they can make informed decisions about what products to build and what features to change. These data-driven insights enable companies to make responsible decisions that will improve peoples’ experiences with their products. Importantly, companies must also be responsible in how they conduct research. Existing ethical guidelines for research do not always robustly address the considerations that industry researchers face. For this reason, companies should develop principles and practices around research that are appropriate to the environments in which they operate, taking into account the values set out in law and ethics. This paper describes the research review process designed and implemented at Facebook, including the training employees receive, and the steps involved in evaluating proposed research. We emphasize that there is no one-size-fits-all model of research review that can be applied across companies, and that processes should be designed to fit the contexts in which the research is taking place. However, we hope that general principles can be extracted from Facebook’s process that will inform other companies as they develop frameworks for research review that serve their needs.

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I. Introduction

Increasingly, companies are conducting research to understand how to improve their products and develop new insights about the world. Traditional guidelines for research may not always robustly address the considerations—ethical and otherwise—that industry researchers face. Thus, it is prudent for companies to develop principles and practices around research that are appropriate to the environments in which they operate, taking into account the values set out in law and ethics. Establishing and abiding by such principles enables companies to do responsible research that is calibrated to their industry and that will make real contributions to society and science.

This challenge of establishing and implementing a robust research review does not just apply to industry. Analysis of existing datasets is being undertaken with greater frequency in


government, medicine, science, and academia. These studies provide insights to inform product development and also hold the potential to contribute to general knowledge and solve important policy problems. While existing frameworks provide some guidance for ethical review, there is a need for context-specific guidelines, tailored to the range of research that exists in these different environments.

This Article describes the research review process developed and implemented at Facebook. The process leverages the company’s organizational structure, creating multiple training opportunities and research review checkpoints in the existing organizational flow. Moreover, the review criteria are tailored to the typical questions Facebook researchers address and the data that they use.

In developing this process, we have benefited from numerous rounds of feedback from internal teams and external experts. We hope that general principles can be extracted from our process to inform thinking about the evolution of research review in general. We emphasize, however, that there is no one-size-fits-all model for research review; the model best suited to protect people and promote ethical research is one that fits the unique context in which the research takes place. Additionally, a flexible process is key: The ever-changing nature of the questions and data involved in industry (and academic) research requires that any processes must be able to adapt efficiently to new internal challenges and external feedback so they can improve over time.

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3. See id. at 335 (noting the growing use of big data research in the fields of “healthcare, education, energy conservation, law enforcement, and national security”)

4. See id. at 335–36 (“[B]ig data is not only fueling business intelligence but also informing decision-making around some of the world’s toughest social problems . . . . The benefits of such research accrue not only to organizations but also to affected individuals, communities, and society at large.”).

5. This including the Facebook family of applications and services.

6. The authors are grateful for the thoughtful advice and consultation of numerous individuals. Special thanks to Martin Abrams, Rebecca Armstrong, Joetta Bell, Ryan Calo, Brenda Curtis, Anastasia Doherty, Penelope Eckert, William Faustman, Susan Fish, Celia Fisher, Manjit Gill, William Hoffman, Joe Jerome, Reynol Junco, Michelle Meyer, Doug McFarland, Amy Lynn McGuire, Jules Polonetsky, Evan Selinger, Adam Tanner, Timothy Yi, and Ruby Zefo.

7. This view is supported by many entities dealing with big data research, including analysts and other industry stakeholders. See Lisa Morgan, *Flexibility*
The Article proceeds as follows. Part Two describes the need for internal review processes within companies. Part Three provides an overview of Institutional Review Boards (IRBs) and describes why we at Facebook found that the Common Rule framework does not fully meet our research needs. Part Four includes information about the research review process at Facebook. Part Five concludes with a discussion of the lessons we learned during implementation of our review process, including (1) leveraging existing infrastructure; (2) openness; (3) seeking help from experts; (4) listening to feedback; and (5) being flexible to changing internal and external conditions.

II. The Merits of Industry Research and Review

In a joint study conducted by researchers at Harvard, MIT, McKinsey, and the University of Pennsylvania, companies that characterized their decision-making structures as data-driven were found to perform better on objective measures of financial and operational success. To be sure, decisions can be driven by insights generated outside of a company; however, companies often possess the best data with which to study their own products and performance, making internal research highly valuable in many contexts.

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9. See id. at 64 (providing specific examples of benefits stemming from...
Research does not only make companies more efficient and innovative but also can make them more responsible. For example, A/B testing—comparing outcomes for a treatment and control group to determine differences in performance—can provide insights into what people find most useful and relevant, rather than relying solely on intuition. As ethicist and legal scholar Michelle Meyer writes, “Practices that are subjected to . . . A/B testing . . . generally have a far greater chance of being discovered to be unsafe or ineffective, potentially leading to substantial welfare gains if practitioners act on their newfound knowledge.”

Intuition often drives innovation; research allows companies to test whether new products—in Facebook’s case, anything from allowing replies to comments to incorporating suicide prevention features—are improving people’s experience on a small scale before being implemented for a broader population.

Sustaining a research program in a company—which can generate data-driven insights to inform decision-making and lead to greater efficiency and growth—requires developing an infrastructure to support it, including creating an internal approach to reviewing the ethics of proposed research. Early review of research provides feedback on the ethical implications of internal data research.


11. Id.


14. See Polonetsky, Tene & Jerome, supra note 2, at 364–65 (discussing the benefits of internal review boards).
of proposed projects, so that problems can be anticipated and avoided. Although the review process we describe is primarily intended to consider ethical issues, research review can also benefit companies by identifying potential challenges in those other domains like law or public policy so they can be addressed.

III. Existing Frameworks

In 1978, the National Commission published the Belmont Report,\(^{15}\) intended to serve as guidelines for academic research.\(^{16}\) The Belmont Report influenced the Federal Policy for the Protection of Human Subjects, or the “Common Rule,” published in 1991.\(^{17}\) The Common Rule outlines the basic provisions for IRBs. At qualifying academic institutions, researchers are required to justify their proposals in accordance with the principles of the Belmont Report, as codified in the Common Rule, to an IRB.\(^{18}\) Institutions are only required to form IRBs, however, when they receive federal funding—which means that private companies conducting research are under no obligation to do so.\(^{19}\)

Existing frameworks have not kept up with state of the art research because, even at institutions that are subject to IRBs, researchers are increasingly undertaking studies that are exempt from full review under the Common Rule.\(^{20}\) Leading scholars have questioned whether proposed changes to the Common Rule


\(^{17}\) Basic HHS Policy for Protection of Human Research Subjects, 45 C.F.R. § 46.101(a) (2009).

\(^{18}\) Id. §§ 46.107–46.109.

\(^{19}\) Id. § 46.101(a).

would adequately address this issue, because they may not reach important uses of data. While companies may work to build IRBs or other internal review mechanisms, they must undertake those efforts against the backdrop of the concern these experts have expressed: that the Common Rule does not provide sufficient guidance to address the challenges relevant to most industry research. While a broad ethical framework is helpful, a more prescriptive approach can be developed and implemented within companies based on their particular research contexts.

The field of research ethics has an established framework of protections that should apply to people and data involved in research—many of which have been built into the program we operate at Facebook. For instance, the Menlo Report, which proposes guidelines for ethical review of technology research, says that respect for persons is maintained in industry research by ensuring data protections and removing non-essential identifying information from data reporting. Facebook has designed processes and systems consistent with these principles. For instance, a dedicated security team monitors data access, and


We wish to express our view that any rules which include or exclude data science from federal ethics regulations should be based on sound research and reasoning about risks to human subjects and preservation of social justice, and achieve clarity about when and how ethics regulations should apply. The proposed revisions in the NPRM fall short of this in several regards.

22. See id. at 1 (“Not surprisingly, researchers and practitioners are increasingly finding that these new methods of knowledge production raise ethical challenges that do not easily translate into the regulatory frameworks developed over the last several decades.”).


employees are well trained in privacy protection policies. We also have a comprehensive privacy program staffed with experts who specialize in data protection. In addition to research review, this privacy group must approve research proposals that raise privacy considerations.

In many areas, however, existing review guidelines do not provide sufficient guidance regarding research conducted in an industry context. For example, most IRB experts consider product-oriented projects to be quality improvement research because the goal is to contribute to implementable (as opposed to generalizable) knowledge.25 Most Facebook research is part of this category, which does not typically qualify as human subjects research and is, thus, outside the scope of the Common Rule. Given the lack of guidance in this area, two IRBs applying the same standards to the evaluation of this category of research may reach different conclusions. Moreover, some IRB experts suggest that decisions made based on the Common Rule are more likely to be too lenient than too stringent in an industry context, due to gaps in oversight.26 For instance, analyses of existing datasets that are reported in de-identified form are eligible for exemption according to Common Rule 46.101(b)(4).27 Our research review group has worked with researchers to improve the ethical aspects of research conducted on historical Facebook data—for instance, by identifying the implications of research for the community we serve and ensuring that those implications are taken into account in research design and reporting. Incorporating this broader context into research has been important for maintaining the integrity of the research and disclosing it responsibly. The same research would likely have been deemed exempt from the purview of an IRB, however, because it involved the analysis of pre-existing, de-identified datasets.

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25 Based on private conversations with IRB members and experts.

26. See, e.g., Vayena et al., supra note 20, at manuscript 3–7 (providing instances of gaps in the current oversight framework).

For these reasons, the guidelines articulated in the Common Rule do not always provide sufficient guidance around many of the research questions we face. To be sure, some of the research conducted at Facebook, such as user experience surveys, would fall clearly under the purview and expertise of an IRB. And indeed, when proposed research falls outside the expertise of our internal research review group, we can and do consult with outside IRBs. For the majority of research we undertake, however, the Common Rule framework would fail to subject it to meaningful review—an outcome that was important for us to avoid. Rather than attempt to fit a square peg into a round hole, we developed a process specifically tailored to the context in which we operate and the full range of research questions and methodologies we employ.

IV. Designing a Process

We designed our process to leverage the structure that already exists at Facebook, creating multiple training opportunities and research review checkpoints in the organizational flow. Figure 1 summarizes this process.

Figure 1: Research Review at Facebook
Note that the research review process exists *in parallel* to our privacy process—not as a substitute to it. Research affecting user privacy must, then, be evaluated by both the privacy and research review groups.

**A. Training**

We provide three levels of training related to privacy and research, depending on each individual’s involvement with research:

1. **Employee onboarding**: Socialization to our practices and principles around ethical research begins during onboarding and is mandatory for all employees. Every new hire receives training on our company policies around data access and privacy.

2. **Researcher-specific training**: Those working directly with data—for example, data scientists and quantitative researchers—attend “bootcamp,” where they learn about our research review process, why it matters, and the types of research that are subject to extended review.

3. **Reviewer-specific training**: Individuals directly involved in the research review decision-making process—substantive area experts and members of the research review group—complete the National Institute of Health’s (NIH) human subjects training. The NIH training, however, is just a starting point. The reviewers meet regularly to share lessons learned, discuss challenges, and review the latest thinking on the subject of research review from academics and policymakers.

**B. Review By Substantive Area Expert**

The senior managers of each research team (for example, data science, infrastructure)—who have substantive expertise in the areas of research for which they are responsible—provide the first review of research proposals. At this point in the process, the manager determines whether an expedited review (“standard review”) is appropriate, or whether the proposal should be referred to the cross-functional research review group (“extended review”).
These managers consider the scientific and ethical merits of each proposal, based on the criteria described in a subsequent section, and can request feedback or additional review from the cross-functional group as needed. Moreover, because research evolves as it progresses, managers may refer a project to the research review group at any stage—not just at the project's inception.

The managers undoubtedly exercise some discretion in their decision to approve, escalate, or decline to advance a research proposal. Any review process involves some degree of subjectivity, which is why we have designed ours to err on the side of multiple reviews. We do not have categories of research—including product improvements—that are automatically approved. Moreover, as previously discussed, research that also touches on privacy is considered by a separate privacy review group with expertise specific to that area.

C. Review by Research Review Group

The research review group consists of a standing committee of five, and includes experts in the substantive area of the research as well as law, ethics, communications, and policy.

Most of the research Facebook conducts relates to small product tests—for example, evaluating whether the size or placement of a comment box affects people’s engagement. The research area expert may expedite the review of these studies or seek the counsel of a particular reviewer from the larger group based on the area of sensitivity. Some research, however, raises additional complexities. For those studies, the group considers the potential ethical, policy, and legal implications. Once extended review has been triggered, we require consensus among all members of the group before the research proposal is approved.

In evaluating research, the group considers the potential benefits of the results and identifies any potential downsides that require evaluation—for instance, whether there are data privacy or security issues that have not already been reviewed through our privacy program. Benefits typically relate to our efforts to improve Facebook products and services. The group also
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considers the anticipated contribution to general knowledge and whether the research could generate positive externalities and implications for society.\textsuperscript{28}

We have designed our process to be inclusive: Companies have to consider a myriad of factors when deciding to undertake a particular project, and diverse networks help ensure that a broad range of experiences and expertise are leveraged. Frequently, the group solicits feedback from others across the company who have particular expertise about the research, or a dimension of it. The group also can go outside the company for additional expert consultation.\textsuperscript{29} For example, before conducting research on trends in the LGBT community on Facebook, we sought feedback from prominent groups representing LGBT people on the value that this research would provide and on what data to collect and report.\textsuperscript{30} So, when decisions are made, the research has been considered from a variety of sides.

\textsuperscript{28} For example, Facebook researchers used image recognition technologies to process satellite maps in order to generate high-resolution population estimates to support our connectivity initiatives. These maps will be open-sourced, so that they can provide value outside the Facebook context—for instance, guiding government infrastructure planning, crisis rescue and recovery teams, and humanitarian groups deciding how to most efficiently allocate medication and other resources. See Connecting the World with Better Maps: Data-assisted Population Mapping, NEWSROOM AT FACEBOOK (Feb. 21, 2016), https://fbnewsroomus.files.wordpress.com/2016/02/population_density_final_mj2_ym_tt2113.pdf (last visited Apr. 27, 2016) (on file with the Washington and Lee Law Review).

\textsuperscript{29} We have considered including an external member on our review board, following the IRB model. To this point, however, we have instead taken the approach of engaging external stakeholders on a case-by-case basis, identifying those with the most substantive and methodological knowledge on particular research proposals under consideration. So far, we have found it more valuable to engage top experts on each project, rather than to include an additional standing member on our committee who is a generalist.

D. Evaluative Criteria

When reviewing research proposals, our basic formula is the same as an IRBs: We consider the benefits of the research against the potential downsides. And also like an IRB, the particular inputs into this formula depend on the research that is under review. Each research proposal is different and requires judgment about whether it is consistent with our values. Four criteria, however, guide our consideration of proposed research.

First, we consider how the research will improve our society, our community, and Facebook. Like many companies, we do research to make our product better. We are fortunate, however, to have the capacity to be forward-looking and to prioritize research that will lead to long-term innovations over incremental gains. As the company grows, our research agenda expands to include projects that contribute value to our community and society. For instance, our accessibility team develops technologies to make Facebook more inclusive for people with disabilities.\footnote{31 Shaomei Woo, Hermes Pique & Jeff Wieland, Using Artificial Intelligence to Help Blind People ‘See’ Facebook, FACEBOOK NEWSROOM (Apr. 5, 2015), http://newsroom.fb.com/news/2016/04/using-artificial-intelligence-to-help-blind-people-see-facebook/ (last visited Apr. 5, 2016) (on file with the Washington and Lee Law Review).}

Collaborative research with the University of Washington informed the design of our suicide prevention tool.\footnote{32 See Deborah Bach, Forefront and Facebook Launch Suicide Prevention Effort, UNIV. OF WASH.: UW TODAY (Feb. 25, 2015), http://www.washington.edu/news/2015/02/25/forefront-and-facebook-launch-suicide-prevention-effort/ (last visited Mar. 11, 2016) (announcing this collaboration and outlining its goals) (on file with the Washington and Lee Law Review).} Researchers in our Connectivity Lab are using technologies developed across Facebook to create high-quality population density maps based on satellite images, which have the potential to inform policymaking and decisions about where to invest in connectivity and other infrastructure.\footnote{33 Andi Gros & Tobias Tiecke, Connecting the World with Better Maps, CODE AT FACEBOOK (Feb. 21, 2016), https://code.facebook.com/posts/1676452492623525/connecting-the-world-with-better-maps/ (last visited Apr. 5, 2016) (on file with the Washington and Lee Law Review).} Thus, when evaluating research, we
consider not just the value it will bring to Facebook, but also to science and, most importantly, the people we serve.

Second, we ask whether there are potentially adverse consequences that could result from the study, and whether every effort has been taken to minimize them. Like an IRB, we think about potential downsides to study participants. Our review pays attention to the impact of research focused on vulnerable populations (e.g., teen bullying) or sensitive topics (e.g., suicide prevention).

Third, we consider whether the research is consistent with people's expectations. Ethicist and legal scholar Helen Nissenbaum writes, “[W]hat people care most about is not simply restricting the flow of information but ensuring that it flows appropriately.” 34 In keeping with this perspective, we try to make sure that our methodology is consistent with people's expectations of how their information is collected and stored. To be sure, gauging people's expectations is not an exact science. We stay closely aware of principles and discussions being put forward by ethicists, advocates, academics. 35 We also know that certain categories of research—for example, analyses of aggregate trends in public posts—are less sensitive than others, so we try to leverage these types of designs when possible. We also ask researchers who publish their work to be explicit, where appropriate, about the fact that their research conforms with our data policy and to articulate the values that motivate the research. Our research review process helps us apply those values consistently.

Finally, we ensure that we have taken appropriate precautions designed to protect people's information. For

34. HELEN NISSENBAUM, PRIVACY IN CONTEXT: TECHNOLOGY, POLICY AND THE INTEGRITY OF SOCIAL LIFE 2 (2010).

instance, we generally release our research results in aggregated form.

V. Conclusion

Through building our internal review process, we have learned a number of lessons:

A. Leverage Existing Infrastructure

Facebook’s research review process is managed on the same online platform that teams use to track their work. By building on the existing infrastructure, the research review process becomes part of researchers’ normal workflows. This reduces the burden placed on researchers—both in terms of training and paperwork. It also makes it easy to solicit input from the research review group and additional stakeholders across the company at any stage of the research process. Deliberations are documented within this system; like IRBs, we do not make those deliberations public, but we do maintain records of our decisions.

B. Inclusiveness Is Key

Research review does not occur behind closed doors. We have found that including researchers and managers in the deliberations leads to faster turn-around and more informed decision-making. It also helps educate researchers about ethical considerations that may inform their future work. The deliberations and decisions of the research review group are accessible to all employees through the centralized platform that we use to track our work. Moreover, anyone at the company is empowered to refer research for review if he or she believes a review is warranted.

C. Ask for Help

As our company grows, we engage in research that is increasingly diverse and complex. While the same
cross-functional group evaluates each of these proposals, the infrastructure around our review process allows us to bring more people into the conversation seamlessly. We often do so. In addition, we can reach out to external consultants or IRBs if we lack the necessary expertise to evaluate a proposal comprehensively.

_D. Listening to Feedback_

The development of our current process did not occur in a vacuum. Throughout, we benefited from the feedback of our community, as well as from experts in industry research, academia, and human subjects review. We continue to listen and to iterate as we receive additional feedback.

_E. Flexibility_

Within industry and academia, norms around data use and analysis are constantly evolving, as are the questions researchers ask. Principles that are set in stone are at risk of quickly becoming irrelevant and unhelpful. We believe that a research review process is most likely to be successful and sustainable if it can change fluidly in response to shifting paradigms, new research questions, and external feedback. Accordingly, we plan to continue improving our research process over time.

There is no one-size-fits-all model of research review that can be applied across companies. We hope, however, that the lessons we have learned will help inform others as they create the processes that serve their needs.

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