

**Behavioral Modification by Design: Surveillance Capitalism,  
Predictive Analytics, and the Erosion of Informational Self-Determination**

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In 2014, Facebook conducted a covert psychological experiment on nearly 700,000 users, manipulating their newsfeeds to test whether emotional contagion could be induced through social media. The study, published without informed consent in *Proceedings of the National Academy of Sciences*, demonstrated that users' emotional states and behaviors could be systematically altered by adjusting the algorithmic composition of their feeds. The backlash, when the study became public, was swift—but the underlying practice it exposed was not an aberration. It was a window into the operational logic of what scholar Shoshana Zuboff calls “surveillance capitalism,” an economic system built on the covert extraction of human behavioral data for the purpose of prediction and behavioral modification.

This paper argues that surveillance capitalism does not merely commodify data—it systematically undermines informational self-determination, the capacity of individuals to exercise meaningful control over the information produced by and about them. Drawing on Zuboff's foundational framework, as well as critiques from Couldry and Mejias, Cohen, and Pasquale, this paper contends that the behavioral modification mechanisms embedded in digital platforms constitute a structural threat to autonomy that current regulatory frameworks are insufficient to address. The stakes are not merely economic or legal; they are fundamentally political, touching on the conditions necessary for democratic participation and self-governance.

### **I. The Logic of Surveillance Capitalism**

Zuboff defines surveillance capitalism as “a new economic order that claims human experience as free raw material for hidden commercial practices of extraction, prediction, and sales.”<sup>1</sup> Unlike industrial capitalism, which extracted value from natural resources and human

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<sup>1</sup>Shoshana Zuboff, *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power* (New York: PublicAffairs, 2019), 8.

labor, surveillance capitalism extracts value from human behavior itself—specifically, from the behavioral data generated by interactions with digital systems. This data is refined into “prediction products” sold to advertisers who seek to anticipate and shape consumer behavior.

The foundational mechanism Zuboff identifies is what she calls “behavioral surplus.” When users interact with digital platforms, they generate far more data than is necessary to improve the service itself. This excess—users’ moods, preferences, social relationships, physical movements, and psychological states—constitutes a surplus that firms harvest and monetize. Zuboff argues that this represents a fundamental asymmetry: users provide data under the assumption that it improves their experience, but the primary beneficiary is the firm, which converts behavioral surplus into predictive power.<sup>2</sup>

Couldry and Mejias extend this framework by drawing an explicit analogy to colonial resource extraction. They argue that data colonialism “combines the instrumental logic of historical colonialism with the specific mechanisms of contemporary digital capitalism,” treating human experience as a territory to be mapped, measured, and mined.<sup>3</sup> This framing is provocative but illuminating: just as colonial powers extracted resources from occupied territories without meaningful consent, surveillance capitalists extract behavioral data from digital subjects who have little practical ability to refuse participation. The “consent” offered through terms-of-service agreements is, on this view, a legal fiction that obscures a fundamentally coercive relation.

Importantly, the behavioral data extracted is not merely observed—it is acted upon. Zuboff identifies a progression in surveillance capitalism’s ambition: from prediction to

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<sup>2</sup>Ibid., 94.

<sup>3</sup>Nick Couldry and Ulises A. Mejias, *The Costs of Connection: How Data Is Colonizing Human Life and Appropriating It for Capitalism* (Stanford: Stanford University Press, 2019), 3.

guarantee. The most advanced prediction products do not merely anticipate behavior; they shape it. Zuboff writes that firms seek to move from “knowing what we will do” to “making us do it.”<sup>4</sup> The Facebook emotional contagion study is precisely an instance of this logic made visible: the platform did not merely record emotional states but experimentally manipulated them.

## II. Informational Self-Determination and Its Erosion

The concept of informational self-determination originates in a landmark 1983 decision by the German Federal Constitutional Court, which held that individuals possess a fundamental right to “decide themselves when and within what limits personal information is revealed.” The court recognized that in an information society, the capacity to control one’s own data is a precondition for autonomy in the full sense—not merely privacy from observation, but the ability to participate in social and political life on one’s own terms.

Surveillance capitalism structurally undermines this capacity through what boyd and Crawford identify as an asymmetry of knowledge and power. “Big Data,” they write, “operates with a logic that often does not align with the logic of democratic institutions or with conventional understandings of individual rights.”<sup>5</sup> The specific asymmetry they identify is epistemic: surveillance capitalists possess vastly more knowledge about individuals than those individuals possess about themselves or about the systems that track them. This epistemic asymmetry translates directly into a power asymmetry.

Couldry and Mejias elaborate this point by examining what they call “data relations”—the structured conditions under which human life becomes available for data extraction. They argue that data relations are not simply transactions but are constitutive of new forms of social

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<sup>4</sup>Zuboff, *Surveillance Capitalism*, 100.

<sup>5</sup>danah boyd and Kate Crawford, “Critical Questions for Big Data,” *Information, Communication & Society* 15, no. 5 (2012): 663.

hierarchy: “data colonialism installs a new order of power over human beings by making the social world’s basic operations dependent on data extraction.”<sup>6</sup> On this account, informational self-determination is not gradually diminished but comprehensively restructured: the conditions under which it could be exercised are systematically altered.

The mechanisms of this restructuring are both technical and legal. Technically, users cannot easily observe what data is collected, how it is processed, or how the resulting inferences are used. Algorithmic systems are, as Pasquale has extensively documented, “black boxes” whose internal logics are proprietary and opaque.<sup>7</sup> Legally, the notice-and-choice model that underlies most data protection frameworks assumes that individuals can make meaningful choices if provided with sufficient disclosure. But as Cohen argues, the complexity and volume of data processing has rendered this assumption untenable: “the informational subject of the twenty-first century cannot meaningfully consent to the terms of their datafication.”<sup>8</sup>

### III. Behavioral Modification as Structural Power

The most serious implication of surveillance capitalism is not that it gathers data about individuals, but that it uses that data to act on them. Zuboff’s analysis culminates in the concept of “instrumentarianism”—a form of power that operates not through force or law but through the design of behavioral nudges, cues, and reinforcement mechanisms that shape human conduct without subjects’ awareness.<sup>9</sup> The instrumentarian ambition, in its fullest expression, is behavioral modification at scale.

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<sup>6</sup>Couldry and Mejias, *Costs of Connection*, 14–15.

<sup>7</sup>Zuboff, *Surveillance Capitalism*, 132.

<sup>8</sup>Julie E. Cohen, *Between Truth and Power: The Legal Constructions of Informational Capitalism* (Oxford: Oxford University Press, 2019), 77.

<sup>9</sup>Zuboff, *Surveillance Capitalism*, 200.

This aspiration is not hypothetical. Contemporary advertising technology routinely deploys techniques drawn from behavioral economics and psychology to maximize engagement and conversion. Recommendation algorithms are optimized not for user satisfaction but for continued platform engagement, with well-documented consequences including radicalization pathways, compulsive usage patterns, and the amplification of emotionally provocative content. The Facebook emotional contagion study revealed that the platform could induce measurable shifts in users' emotional states; subsequent research has documented links between algorithmic content curation and mental health outcomes, particularly among adolescents.

The political implications extend beyond individual harm. Cohen argues that behavioral modification mechanisms affect not only consumer choices but the epistemic conditions of democratic deliberation.<sup>10</sup> If citizens' information environments are algorithmically curated to maximize engagement, and if engagement correlates with emotional arousal rather than epistemic accuracy, then the information ecosystem on which democratic deliberation depends is structurally distorted. The problem is not merely that misinformation circulates, but that the architecture of digital platforms systematically privileges content that activates behavioral responses over content that promotes considered judgment.

Couldry and Mejias push this critique to its structural limit, arguing that data colonialism produces not merely distorted information environments but new forms of social ontology: "data relations do not just describe or track social life; they constitute new forms of it."<sup>11</sup> When human experience is comprehensively datafied and those data are used to shape future behavior, the very conditions of selfhood and social relation are transformed. Informational self-determination

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<sup>10</sup>Boyd and Crawford, "Critical Questions for Big Data," 668.

<sup>11</sup>Cohen, *Between Truth and Power*, 112.

is not merely constrained—it is reconstituted on terms set by surveillance capitalist firms rather than by individuals or democratic communities.

#### IV. The Limits of Current Regulatory Responses

Existing regulatory frameworks have proven inadequate to the structural challenge posed by surveillance capitalism. The General Data Protection Regulation (GDPR), adopted by the European Union in 2018, represents the most ambitious attempt to date to assert individual rights against data collection and use. Its provisions include rights of access, correction, erasure, and portability, as well as requirements for explicit consent and data minimization. In the United States, sectoral regulations and the California Consumer Privacy Act provide more limited protections.

These frameworks rest on a consent-based model that Zuboff identifies as fundamentally misconceived. The consent model “assumes a kind of information parity and negotiating capacity that does not exist,” she writes, and therefore “operates as a legitimating fiction that allows surveillance capitalism to continue on essentially its own terms.”<sup>12</sup> The GDPR’s consent provisions, while more stringent than their predecessors, remain vulnerable to what researchers have documented as “consent fatigue”—the tendency of users to accept default settings rather than navigate complex opt-out procedures.

Boyd and Crawford identify a deeper problem: the consent model addresses individual transactions but not structural conditions.<sup>13</sup> Even if a user meaningfully consents to the collection of their own data, they cannot consent on behalf of the inferences that will be drawn about them based on data collected from others. Aggregate behavioral datasets enable inferences about

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<sup>12</sup>Frank Pasquale, *The Black Box Society: The Secret Algorithms That Control Money and Information* (Cambridge: Harvard University Press, 2015), 60.

<sup>13</sup>Couldry and Mejias, *Costs of Connection*, 28.

individuals that those individuals never supplied—inferences about creditworthiness, health status, political beliefs, and psychological vulnerabilities that may be more accurate than individual self-report.

Pasquale advocates for transparency requirements as a partial corrective, arguing that mandatory algorithmic auditing could restore some epistemic parity between platforms and users.<sup>14</sup> While this is a meaningful reform, it addresses the symptom rather than the cause. As long as the economic logic of surveillance capitalism rewards behavioral modification over user welfare, transparency requirements will be outpaced by the innovation capacity of well-resourced firms. What is required, Cohen argues, is a reconceptualization of data governance that moves from individual rights to structural regulation—imposing constraints on the kinds of data practices that are permissible regardless of individual consent.

### **Conclusion**

Surveillance capitalism represents a qualitative shift in the relationship between economic power, information, and human autonomy. Its distinguishing feature is not merely the collection of personal data, but the deployment of that data to predict and modify human behavior at scale. This practice does not merely raise privacy concerns; it structurally undermines informational self-determination—the capacity of individuals to exercise meaningful control over the information that constitutes their social identities and shapes their choices.

Current regulatory frameworks, built on a consent-based model of individual data rights, are insufficient to address this structural challenge. They assume a degree of informational parity and negotiating capacity that surveillance capitalism systematically prevents. More adequate regulatory responses would need to move beyond individual consent toward structural

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<sup>14</sup>Pasquale, *Black Box Society*, 189.

constraints on data practices—constraints designed not simply to protect individual privacy but to preserve the epistemic and social conditions necessary for democratic self-governance.

Zuboff concludes her analysis with a note that is simultaneously diagnostic and aspirational: “We are the first generation to experience this new form of power, which means that we are also the last generation that can mount effective resistance to it.”<sup>15</sup> Whether this resistance will take legislative, technical, or social form—or some combination of all three—remains an open question. What is clear is that the question of how to govern surveillance capitalism is not merely a regulatory or technical problem but a fundamentally political one, touching on the most basic conditions of human freedom in a digital age.

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<sup>15</sup>Zuboff, *Surveillance Capitalism*, 513.

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