Global and Transdisciplinary Perspectives on Dark Patterns and Deceptive Design Practice
ダークパターンとひとをだますデザインに関する
国際的かつ学際的な交流

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Abstract

Dark patterns and deceptive designs (DPs) refer to user interfaces (UIs) that trick people into interactions that benefit the service providers. Today, academic research, legal action, and media coverage has raised awareness among a diversity of stakeholders worldwide. Yet, the lens has focused on Western and English contexts. We propose a Special Interest Group (SIG) that centres on cross-cultural and interdisciplinary engagement. The organizing team, who hail from a plurality of nations and disciplines, will spark discussion by sharing their knowledge—findings, frameworks, methods, and tools—and culturally-sensitive perspectives on deception in modern digital products and services. Attendees will participate in a small group drawing activity, whereby culturally-specific DPs and disciplinary perspectives can be surfaced and communicated without reliance on a specific language or cultural frame. This SIG is expected to draw in a diversity of designers, researchers, security experts, and legal scholars concerned about ethical design practice.

CCS Concepts

• **Human-centered computing** → *HCI theory, concepts and models*; Collaborative and social computing theory, concepts and paradigms; **Interaction design theory, concepts and paradigms**; • **Security and privacy** → *Human and societal aspects of security and privacy*; • **Social and professional topics** → **Codes of ethics**; *Privacy policies*; Governmental regulations; Computer crime; Government technology policy; *Cultural characteristics*; • **Applied computing** → *Law*.

Keywords

Dark Patterns, Deceptive Design, Manipulative User Interfaces, Ethics, Regulation, ダーク・パターン, 欺瞞的デザイン, 人をだますデザイン

1 Motivation & Background

Dark patterns[1] and deceptive designs (DPs) have become a feature of digital media and commercial software the world over. These user interface (UI) elements trick, coerce, or otherwise force the user to take actions that have hidden consequences, generally to the benefit of shareholders over users [22, 25, 29, 40]. DPs are a *transdisciplinary* challenge, touching on matters of interaction design (IxD) and user experience (UX) on the human-computer interaction (HCI) side, as well as law and governance, both practical and scholarly, and matters of ethics, in design and industrial practice. Many DPs are explained by psychology, with explanatory mechanisms that can be traced back to the social sciences and behavioural economics [8, 60]. A growing body of research and activism led by HCI scholars and others has raised the issue of DPs to the fore. DPs and their ilk have been found in e-commerce websites and apps [26, 30, 32, 39, 47], consent banners [23, 28, 38], video games [1, 13, 63], social media [41, 44, 46, 57], conversational agents and interfaces [42, 52], augmented and virtual reality apps [11, 61], and Internet-of-Things (IoT) offerings [34]. Foundational work has contributed ontologies and taxonomies [22, 25, 48], operationalizations [40], prevalence rates [10, 30, 35, 39], and the impact on users [6, 7, 15, 28, 44, 53]. Academia, industry, and the law are all responding to the ethical issues raised across these diverse areas of work.

Duplicity in design is also a *global* concern. Worldwide interest in DPs has surged in recent years, as represented in the international reports by the world-leading Organisation for Economic Co-operation and Development (OECD) [48, 49]. The Japan-led 2022 OECD report raised the nation-transcendent issue of consumer vulnerability and policy [48]. Awareness and action is also occurring at regional and local scales [5, 9, 30, 41]. In Europe, the European Data Protection Board (EDPB) [12] has led efforts to take action on DPs, starting by crafting guidelines for social media users. In Latin America, work has begun to critically analyze DPs in social media [41]. In Asia, new legislation and guidelines have been adopted or proposed in India [50, 51], Korea [3], and Japan [2]. The prevalence of DPs across nations has become plain. The 2022 EU Commission report found a rate of at least one pattern across 97% of popular apps and websites for EU consumers [37]. Foundational work by Di Geronimo et al. [10] found that 95% of 240 US Google Play Store apps contained at least one DP. Later, Hidaka et al. [30] confirmed similar results for the Japanese store, finding 93.5% in the top 200 apps. These studies demonstrate the global threats posed by DPs for users of most popular apps. Governmental organizations and legislative bodies have begun to take note, such as the warning in 2023 from the Japanese Consumer Affairs division the conflation of the Japanese yen symbol and the Chinese yuan[2]. Yet, most work and collaboration has taken place in industrialized Western and Anglocentric nations [58].

In this SIG, we seek to address these gaps and opportunities under the banner of ***global and transdisciplinary engagement.*** We are inspired by CHI '25 being held in Japan, an Eastern nation that represents an emerging global player for academic, design, and regulatory action on DPs. The time is ripe for syncing local and international efforts on ethical design practice and governance in a transdisciplinary and translational manner.

2 Aims of the SIG

Tackling the global challenge of DPs is a culturally-sensitive and transdisciplinary effort. The wealth of HCI scholarship, case studies on lawsuits and legal action, and reports from regulatory bodies the world over signal unquestionable engagement on the matter from all fronts. This body of work has been used to push for governance and legal mandates aiming to protect consumers and guide industry away from interactive designs that undermine user choice and agency. Notably, the CHI community has led and established a nexus for engagement within this dynamic space.

The proposed SIG represents the next phase in a series of successful engagements on the topic of DPs within and beyond CHI. The CHI '21 workshop [36] led to the creation of a small international and transdisciplinary community on Slack. A general SIG [24] raised DPs to the forefront of CHI affairs and a complementary panel [17] drew over 100 attendees at CHI '23. The CHI '24 workshop [19] centred on action at all scales: scholarship, governance, legal, industrial, and more. This workshop revealed crucial new challenges and opportunities related to *cultural plurality* and *transdisciplinarity*. Recognizing that a panel format may be prescriptive and a workshop may only draw those identifying as DP scholars, we are proposing an interactive and inclusive SIG engagement.

In this SIG, we aim to bring in new voices and perspectives on DPs by addressing two core dimensions. First, *geography*: we purposely seek to expand the purview of DP work beyond its Euro- and US-centered core, particularly by developing a broader global community. Second, *discipline*: we invite a range of HCI and adjacent practitioners who have a stake in DPs or can provide novel frames of reference. To this end, the SIG has two core objectives:

(1) **Knowledge-sharing:** We seek to share knowledge on the diversity of frameworks, methods, and tools used to understand the prevalence and impact of DPs on a variety of stakeholders. We aim to establish a global understanding of key concepts and theories (e.g., values, trust, deception), modes of practice, and perspectives on ethics across cultures and disciplines. We seek to link disparate knowledge bases and find commonalities. We expect topics to include technical detection, user awareness, user impact, expert values, expert practice, legal case studies, and more. We will centre work that brings in culturally-sensitive epistemological frames and ontologies, highlights regional operational differences in design practice, and unearths local varieties of DPs.

(2) **Taking action:** We aim to generate solutions to DPs in a culturally-sensitive and collaborative way. The SIG will enable disparate parties to meet and combine forces on the

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[1]We use this term to ensure that our efforts connect with relevant scholarship and legal statutes. We acknowledge that the ACM Diversity and Inclusion Council now includes the term "dark patterns" on a list of problematic terms (https://www.acm.org/diversity-inclusion/words-matter). At present, other terms, such as "deceptive design," "disloyal design," and "manipulative user interfaces" remain underused in academic and regulatory circles. In Japan, the media's reliance on a direct translation of the term "dark pattern" as ダーク・パターン (dāku patān) has left most unfamiliar with other terms, like deceptive design or 欺瞞的デザイン (giman-teki-dezain). We use the abbreviation "DP" as a compromise.

[2]https://www.kokusen.go.jp/news/data/n-20230419_2.html (Note: Japanese-only)

creation of versatile and relevant solutions to DPs. We expect work on design strategies, educational platforms, cross-cultural initiatives, participatory design with consumer, industry, and/or legal representation, and more. We will particularly encourage work that seeks to develop international teams or identifies strategies relevant to global or localized design or regulatory efforts. This year, we have included an interactive activity to help facilitate this objective.

These aims will be achieved through pre- and post-activity **organizer-led discussions**—to set the stage, open up the problem space, and surface themes—alongside an interactive small group **activity centred on drawing methodology** [14], which allows language-free communication and is particularly suited to exploring UI phenomena.

As a starting point, we offer the following launching points, with two caveats: (i) we do not wish to be prescriptive and (ii) we expect novel topics to emerge as a direct result of our concerted global and transdisciplinary focus.

- How are DPs characterized within particular regional, cultural, and/or disciplinary contexts? How do users, experts, and other shareholders perceive DPs? Are there famous examples?
- What terms and words are used to describe DPs in different disciplines and languages?
- What is your personal connection to DPs? What experience/s led to your interest in DPs?
- What frameworks are used to describe deceptive design practices? What terms exist? What language is used when describing DPs? What insights can we glean from translating words among languages?
- What taxonomies are used to describe DPs? Have regional varieties of DPs been discovered?
- What theories are used to understand how DPs work and what impact they can have on users?
- What methods—academic, industrial, designerly, legal, governmental, social—are used to address DPs? Are there, for instance, informal communities banding around hashtags outside of English-speaking social platforms?
- What values and codes of ethics are leveraged in discussions about UI-based digital manipulation?
- What expert and industrial perspectives exist? What consumer and user perspectives exist? What other stakeholders are there? Are there cultural components? Underrepresented disciplinary frames?
- What is HCI research on DPs missing?
- What action is being taken in certain regions? What has been the cultural response to legal and social pushback against DPs? What can we learn from legal case studies in non-Western regions?
- What solutions have been explored? What strategies have been successful? Are these technical, legal, industrial, social? What players and entities have been involved?
- What laws, regulations, legal mandates, and governance has been developed around DPs? How has this affected design and industrial practice (or not)? What new issues have arisen?

- What linkages are missing: locally and internationally? Within and cross-discipline? Where might there be opportunities for cross-pollination and achieving the critical mass needed for effective change at a global scale?

3 Organizers

The organizing team comprises researchers in the local Japanese and global research communities. We have contributed to building a dynamic space that crosses the regulatory, design, and HCI communities. Our track record includes several successful workshops, notably "Mobilizing Research and Regulatory Action on Dark Patterns and Deceptive Design Practices" at CHI '24 [19], EduCHI at CHI '23 [21], manipulative social agents at CUI '23 [4], and "What Can CHI Do About Dark Patterns?" at CHI '23 [36]. We are deeply embedded within the field and actively contribute to DP scholarship. We comprise mid-career scholars, early-career researchers, and doctoral students.

- **Katie Seaborn** is an Associate Professor at Institute of Science Tokyo (formally Tokyo Institute of Technology) in Japan. In 2022, their team discovered novel patterns tied to the Japanese socio-linguistic context [30]. In 2023, they collaborated with Japanese public broadcaster NHK to run the first user study with Japanese consumers on these novel patterns [59]. As a recognized leader in Japan, Professor Seaborn's work on DPs has been covered by NHK, Yomiuri Shimbun, and other major outlets for Japanese television and print media.
- **Colin M. Gray** is an Associate Professor at Indiana University (USA), where they serve as program director for a graduate program in HCI/d. Their research has contributed foundational knowledge on DPs [20], including a unified ontology [22, 25]; connections between design, law, and HCI [23]; and articulation of challenges in supporting ethical design practices [16, 18].
- **Johanna Gunawan** is an Assistant Professor of Computer Science and Law at the Maastricht University Law and Tech Lab (Netherlands). Her interdisciplinary work spans security/privacy, HCI, design, and law, focused on understanding dark patterns and power asymmetry in ubiquitous or emergent technologies [26, 34, 52] and policy considerations for improving consumer protections against DPs and similar designs [27, 28].
- **Thomas Mildner** is a postdoctoral researcher at the University of Bremen, Germany. With a specific focus on DPs in social media [44, 46], Thomas' research concerns (un-)ethical design in digital interfaces [42, 43, 45], methods to analyze DPs, and the development of countermeasures to support autonomous decision-making.
- **René Schäfer** is a PhD candidate at the RWTH Aachen University in Germany. His research focuses on vulnerable groups [56], how companies hinder users in exercising their rights using DPs [35], and visual countermeasures to help people deal with malicious and deceptive designs [54, 55].
- **Lorena Sánchez** is a postdoctoral researcher at the University of Twente (Netherlands). Her research focuses on the intersection of manipulative design and vulnerability: how

to protect users by increasing their resilience. She aims to create multidisciplinary solutions with a social perspective.
- **Satoshi Nakamura** is a Professor at Meiji University in Japan. He is interested in how user selection in choice-based interfaces can be influenced, potentially as DPs. His research focuses on how interface elements, such as pop-out effects, font styles, position, device type, and progress bars, can affect user selections [31, 33, 60, 62].

4 Expected Outcomes & Next Steps

After the SIG, we will focus on creating and sustaining global and translational communication among participating researchers, designers, legal scholars, practitioners, and regulators hailing from their home nations. We will expand membership in the central Slack workspace, share networks to connect community members, and raise awareness of local and global events and engagements on combating DPs.

In the SIG, we will discuss how to encourage communication among the global community of HCI scholars, practitioners in the adjacent sciences and humanities, and members of the legal and regulatory communities. We will gather ideas on how to proactively support DP-free design internationally. We will address emergent governance and law across the East (e.g., in Japan [2], India [50, 51], Korea [3]), extant rules or enforcement in the US and EU, and work in regions with less established guidance or practice. We will use the Slack group to link like-minded activists. We will encourage attendees to be listed on the website as regional points of contact.

The organizers will aim to publish a short article in *Interactions* magazine to disseminate the results of the SIG, as well as highlight opportunities, methods, and suggestions for for international and transdisciplinary action. Selected drawings (with permission) will be showcased on the SIG website:

> https://chi2025.darkpatternsresearchandimpact.com

These outcomes and opportunities will be disseminated through the same channels used for pre-SIG recruitment, aiming to highlight the growing diversity of the community and bring in new voices for future events.

Acknowledgments

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