

AN ONTOLOGY OF DARK PATTERNS

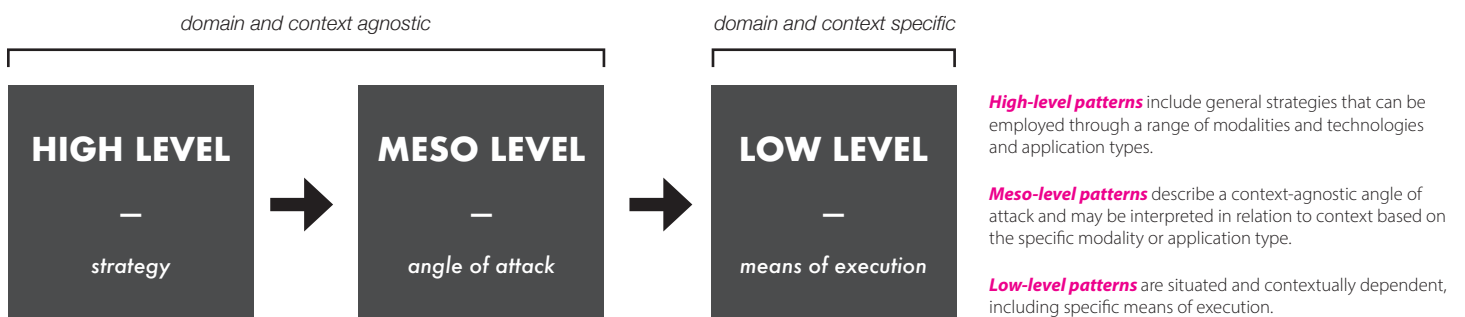
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ABSTRACT

Deceptive and coercive design practices are increasingly used by companies to extract profit, harvest data, and limit consumer choice. Dark patterns represent the most common contemporary amalgamation of these problematic practices, connecting designers, technologists, scholars, regulators, and legal professionals in transdisciplinary dialogue. However, a lack of universally accepted definitions across the academic, legislative, practitioner, and regulatory space has likely limited the impact that scholarship on dark patterns might have in supporting sanctions and evolved design practices. In this paper, we seek to support the development of a shared language of dark patterns, harmonizing ten existing regulatory and academic taxonomies of dark patterns and proposing a three-level ontology with standardized definitions for 65 synthesized dark patterns types across low-, meso-, and high-level patterns. We illustrate how this ontology can support translational research and regulatory action, including pathways to extend our initial types through new empirical work and map across application domains.

LEVELS OF PATTERN GRANULARITY



Ontology Legend

"D" = a direct use of the pattern language in the original source(s)

"I" = indicates an inferred similarity between different terminology used across two or more pattern types.

Sources are indicated by abbreviation and are colored **cyan** if they are regulatory reports or **magenta** if they are academic articles. *Italicized* pattern names indicate new pattern types introduced in this paper while all other text relies upon the sources indicated. Underlined sources indicate the earliest mention of that pattern or patterns in the sources we analyzed.

Sources Analyzed

Br Brignull (2018);
Br23 Brignull (2023);
Bö Bösch et al. (2016);
Gr Gray et al. (2018);
Ma Mathur et al. (2019);
Lu Luguri & Strahilevitz (2021)
EDPB European Data Protection Board (2022);
CMA UK Competition & Markets Authority;
EUCOM European Commission (2022);
FTC US Federal Trade Commission (2022);
OECD Organisation for Economic Co-Operation and Development (2022)

DOWNLOAD
Full Ontology
(PDF + CSV)



<https://ontology.darkpatternsresearchandimpact.com>

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High-Level Pattern	Meso-Level Pattern	Low-Level Pattern
Obstruction D: Gr Lu Ma Br23 EUCOM FTC OECD I: EDPB CMA	Roach Motel (D: Br Gr Lu EUCOM ; I: Br23 Ma FTC OECD)	Immortal Accounts (D: Bö Lu FTC OECD) Dead End (D: EDPB) Price Comparison Prevention (D: Br Gr Lu FTC EUCOM OECD ; I: Br23) Intermediate Currency (D: Gr Lu FTC EUCOM OECD ; I: CMA) Privacy Maze (D: EDPB)
	Creating Barriers Adding Steps (I: EDPB)	Disguised Ad (D: Br Gr Lu FTC EUCOM OECD ; I: Br23) Sneak into Basket (D: Br Gr Ma Lu FTC EUCOM OECD) Drip Pricing, Hidden Costs, or Partitioned Pricing (D: Br Br23 Gr Ma Lu CMA FTC EUCOM OECD) Reference Pricing (D: CMA OECD) Conflicting Information (D: EDPB) Information without Context (I: EDPB)
Sneaking D: Gr Lu Ma EUCOM OECD I: EDPB CMA FTC	Bait and Switch (D: Br Gr Lu FTC EUCOM ; I: OECD)	False Hierarchy (D: Gr OECD ; I: Lu EDPB FTC) Visual Prominence (I: EDPB) Bundling (D: CMA) Pressured Selling (D: Ma ; I: Lu FTC)
	Hiding Information (De)contextualizing Cues Manipulating Choice Architecture (I: CMA) Bad Defaults (D: Bö ; I: CMA EUCOM)	Emotional or Sensory Manipulation (I: Gr Lu EUCOM OECD) Trick Questions (D: Br Gr Ma Lu FTC EUCOM OECD ; I: Br23) Choice Overload (I: EDPB CMA) Hidden Information (D: Gr FTC OECD ; I: Lu Bö EDPB EUCOM) Language Inaccessibility Feedforward Ambiguity (I: EDPB)
Interface Interference D: Gr Lu EUCOM FTC OECD I: Br Ma EDPB FTC	Trick Questions (D: Br Gr Ma Lu FTC EUCOM OECD ; I: Br23) Choice Overload (I: EDPB CMA) Hidden Information (D: Gr FTC OECD ; I: Lu Bö EDPB EUCOM) Language Inaccessibility Feedforward Ambiguity (I: EDPB)	Privacy Zuckering (D: Br Bö Gr Lu ; I: FTC OECD) Friend Spam (D: Br ; I: Lu FTC OECD) Address Book Leeching (D: Bö ; I: Lu FTC OECD) Social Pyramid (D: Gr ; I: Lu FTC OECD) Pay-to-Play (D: FTC) Grinding (D: FTC) Auto-Play (D: FTC)
	Nagging (D: Gr Lu Br23 EUCOM FTC OECD ; I: EDPB CMA) Forced Continuity (D: Br Gr ; I: Lu Ma Br23 FTC EUCOM OECD) Forced Registration (D: Bö Lu FTC EUCOM OECD ; I: Bö Ma CMA FTC)	Forced Communication or Disclosure Gamification (D: Gr Lu OECD) Attention Capture
Forced Action D: Gr Lu Ma EUCOM OECD I: CMA FTC	Forced Communication or Disclosure Gamification (D: Gr Lu OECD) Attention Capture	Scarcity and Popularity Claims (D: CMA ; I: Ma Lu Br23 FTC) Social Proof (D: Ma Lu EUCOM OECD ; I: Br23)
	Urgency (D: Ma Lu FTC EUCOM OECD ; I: Br23) Shaming Personalization (D: CMA)	Social Engineering