

DARK PATTERNS

InfoVis 2022

HOW OLD IS THIS QUOTE?

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our minds are molded,
our tastes formed,
our ideas suggested,
largely by men we have never heard of.”

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Edward Bernays – the father of PR – in
his Propaganda, 1928

NOTE ° Bernays was a nephew of Viennese psychoanalyst **Sigmund Freud**—by virtue of his mother, Freud's sister

THE INTERACTION YOU DESIGN
IS A **FIRST** TOUCHPOINT
BETWEEN THE USER, LAW AND
...THE GOAL(S).

User's goal, platform's goal, money
making, information dissemination..

DARK PATTERNS

happen there,
In cross section
of these goals

DARK PATTERNS

What is that?

“Dark pattern” is a new term for an old practice: using design to prompt desired (not necessarily desirable or useful for the user) behavior.

dark patterns –
generally, interfaces
designed to manipulate
users into certain
courses of conduct

Hurwitz, J. (2020). Designing a Pattern, Darkly. *NCJL & Tech.*, 22, 57.

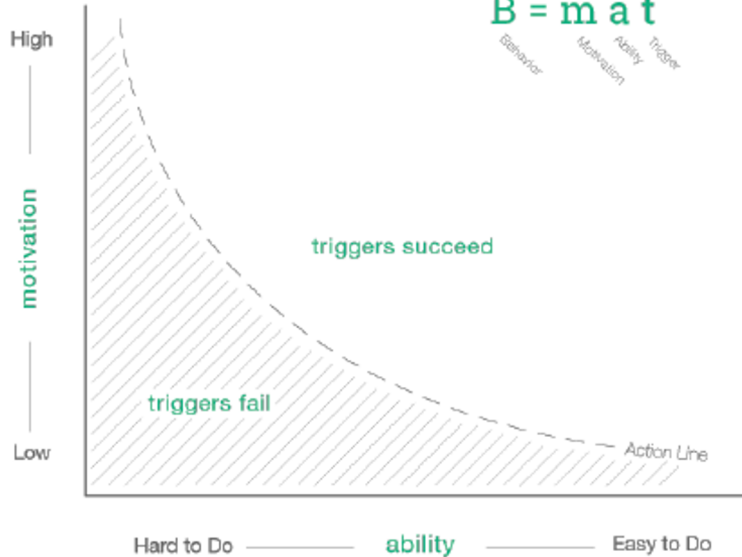
- Website report to a user that many other users have made a similar purchase recently or that only a limited number of units of a product remain
- Subscription services—online and offline—may run customers through a “maze” of customer service representatives to cancel service
- A social-media platform may make it easy and rewarding to uncritically “share” posts, facilitating the widespread dissemination of false information

Fogg Behavior Model

©2007 BJ Fogg

$$B = m a t$$

Behavior Motivation Ability Trigger



FOGG BEHAVIOUR MODEL

for a behavior to occur

a sufficient amount of motivation and ability and a trigger or prompt are needed.

The behavior takes place only if all these are in place; **the higher the motivation, or the easier a task appears**, the more responsive people are likely to be.

Fogg, B. J. (2009). A behavior model for persuasive design. In Proceedings of the 4th International Conference on Persuasive Technology (Persuasive '09; Paper 40). New York, NY, USA: ACM Press.

If the motivation is substantial, the behavior can occur even if the ability might be low and vice versa.



Ariely, D., & Jones, S. (2008). *Predictably irrational*. New York, NY: Harper Audio.

HOW DID WE GET HERE

Dark patterns are based on a premise

Humans are not rational decision makers*

Media

are tools, facilities that carry information through time and space

As a consequence of information overflow in which we live, and the need for a lot of information, the role of media, we say we live in **Information society** and **increased mediation**.

HUMANS +
MEDIA?

So? Something
is missing -
what Menti

...PROFIT...

It's all about money..
One story from one bank..

... BRAKE ...

WHAT ARE DARK PATTERNS

Coined by Harry Brin

the term “dark patterns” was created to describe user interface design patterns that are “crafted with great attention to detail, and a solid understanding of human psychology, to trick users into do[ing] things they wouldn’t otherwise have done.”

Many examples have offline analogs. But **software interfaces to online platforms are infinitely and instantly malleable.**





HOW DO WE DO IT?

We do not like to devote a lot of resources to low value activities

We skim through the content often missing details

Our eyes follow common patterns

So if something is unusual we do not notice

We are tired of correcting mistakes

if mistake is not expensive we might decide not to correct it

DOES IT HAPPEN OFTEN?

recent study

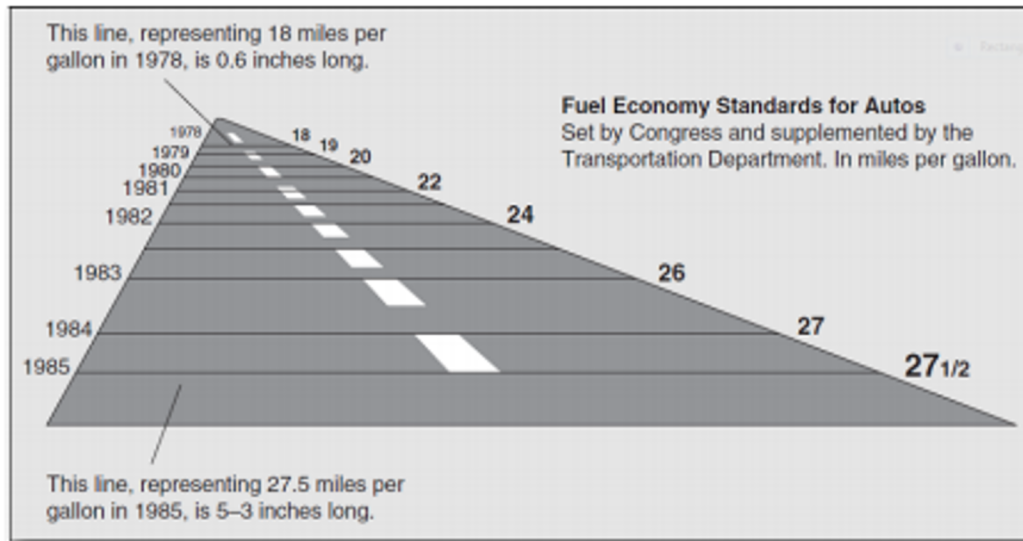
analyzed 53,000 different product pages across 11,000 different online shopping sites, and found 1,818 instances of dark pattern usage*

another study

respondents presented with either a “mild” or “aggressive” dark pattern designed to push them into purchasing credit monitoring services were 228% to 371% more likely to purchase the offered services**

*Mathur, A., Acar, G., Friedman, M. J., Lucherini, E., Mayer, J., Chetty, M., & Narayanan, A. (2019). Dark patterns at scale: Findings from a crawl of 11K shopping websites. *Proceedings of the ACM on Human-Computer Interaction*, 3(CSCW), 1-32.

**Jamie Luguri & Lior Strahilevitz, *Shining a Light on Dark Patterns* 22 (Univ. of Chic. Pub. L. Working Paper No. 719, 2019



Source: Tufte 2001, p. 57. Used by permission by Graphics Press.

$$\text{lie factor} = \frac{\text{size of effect shown in graphic}}{\text{size of effect in data}}$$

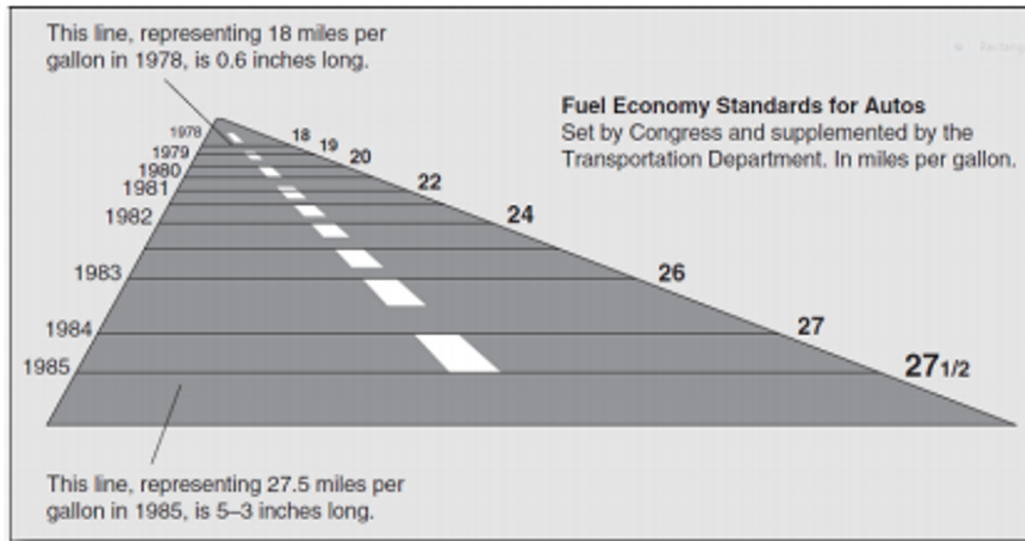
Henninger, M. (2013). Data-driven journalism. *Challenge and Change: Reassessing Journalism's Global Future*.

FOR TUFTE ?

Graphical integrity Edward Tufte

“graphical excellence begins with telling the truth about data” (2001); that the “representation of numbers, as physically measured on the surface of the graphic itself, should be directly proportional to the quantities represented” (2001)

He suggested that such violations can be measured by the “lie factor”. He devised the following formula



Source: Tufte 2001, p. 57. Used by permission by Graphics Press.

$$\text{lie factor} = \frac{\text{size of effect shown in graphic}}{\text{size of effect in data}}$$

FOR TUFTE ?

Graphical integrity Edward Tufte

the data shows the changes fuel economy standards for automobiles in miles per gallon went from 18 in 1978 to 27.5 in 1985, an increase of 53%, whereas the length graph lines representing this data (0.6 inches and 5.3 inches) is an increase of 783%.

Tufte calculated that the lie factor of the graphic is $783\%/53\% = 14.8!$

DARK PATTERNS

types

Table 1. Seven Persuasive Technology Strategies, as Stated by Fogg (2003).

Tool	Description
Reduction	Simplifying a task toward the users' desired outcome; for example, reducing the required steps needed for task completion. This might encourage users to perform the task (correctly) and trust their abilities in tackling the task with a positive approach.
Tunneling	Guiding users toward the desired outcome through a series of steps, frequently initiated by people wishing to change their own behavior.
Tailoring	Providing personalized experiences in terms of the presented interface, information, options, and/or feedback, based on the users' needs and actions. This increases the likelihood that an experience will be perceived as relevant. Tailoring often is employed in conjunction with tunneling.
Suggestion	Giving users suggestions at the right moment. This requires recognition of an individual user's current situation with variables that help to find out when, where, and how suggestions should/could be presented.
Self-monitoring	Enabling real-time tracking of people's behavior to allow them the chance to adjust in reaching desired outcomes. When people know how they are doing, they are more likely to continue with that behavior.
Surveillance	Monitoring the behavior of others to adjust the targets' behaviors in a particular manner. Observing others makes the achievement of a desired outcome more likely as people will try to act to meet the expectations of the observer.
Conditioning	Providing rewards or punishments to shape behaviors and help users toward desired outcomes.

<https://www.darkpatterns.org/types-of-dark-pattern/trick-questions>

<https://www.darkpatterns.org/types-of-dark-pattern/sneak-into-basket>

<https://www.darkpatterns.org/types-of-dark-pattern/roach-motel>

<https://www.darkpatterns.org/types-of-dark-pattern/privacy-zuckering>

Trick questions

While filling in a form you respond to a question that tricks you into giving an answer you didn't intend. When glanced upon quickly the question appears to ask one thing, but when read carefully it asks another thing entirely.

Sneak into Basket

You attempt to purchase something, but somewhere in the purchasing journey the site sneaks an additional item into your basket, often through the use of an opt-out radio button or checkbox on a prior page.

Roach Motel

You get into a situation very easily, but then you find it is hard to get out of it (e.g. a premium subscription).

Privacy Zuckering

You are tricked into publicly sharing more information about yourself than you really intended to. Named after Facebook CEO Mark Zuckerberg.

<https://www.darkpatterns.org/types-of-dark-pattern/price-comparison-prevention>

<https://www.darkpatterns.org/types-of-dark-pattern/misdirection>

<https://www.darkpatterns.org/types-of-dark-pattern/hidden-costs>

<https://www.darkpatterns.org/types-of-dark-pattern/bait-and-switch>

Price Comparison Prevention

The retailer makes it hard for you to compare the price of an item with another item, so you cannot make an informed decision.

Misdirection

The design purposefully focuses your attention on one thing in order to distract you attention from another.

Hidden Costs

You get to the last step of the checkout process, only to discover some unexpected charges have appeared, e.g. delivery charges, tax, etc.

Bait and Switch

You set out to do one thing, but a different, undesirable thing happens instead.

[darkpatterns.org/types-of-dark-pattern.html](https://www.darkpatterns.org/types-of-dark-pattern.html)

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<https://www.darkpatterns.org/types-of-dark-pattern/friend-spam>

Confirmshaming

The act of guilt-tripping the user into opting into something. The option to decline is worded in such a way as to shame the user into compliance.

Disguised Ads

Adverts that are disguised as other kinds of content or navigation, in order to get you to click on them.

Forced Continuity

When your free trial with a service comes to an end and your credit card silently starts getting charged without any warning. In some cases this is made even worse by making it difficult to cancel the membership.

Friend Spam

The product asks for your email or social media permissions under the pretence it will be used for a desirable outcome (e.g. finding friends), but then spams all your contacts in a message that claims to be from you.

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