

# Do Cognitive Biases and Dark Patterns Affect the Legality of Consent under the GDPR?

JOANNA TANEVA

UTRECHT UNIVERSITY

JOANNA.TANEVA@AMATAS.COM



Utrecht  
University





# Joanna Taneva

## **Education:**

- ▶ LL.B. in European and International Law at The University of Sheffield (UK)
- ▶ LL.M. in Law and Technology at Utrecht University (The Netherlands)
- ▶ Included studies of:
- ▶ Data Protection; Digitalization and Law Enforcement; Automated decision-making and Law; Algorithmic Transparency and etc.

## **Professional experience:**

- ▶ Privacy Consultant at AMATAS (Sofia, Bulgaria)
- ▶ Paralegal at Semrad Law LLC (Sofia, Bulgaria)



# Presentation structure

1. Introduction and legal background
2. Cognitive biases
3. Dark patterns
4. Immediate gratification bias – mapping to dark patterns and legal analysis
5. Information overload bias – mapping to dark patterns and legal analysis
6. Conclusion and future work

# Introduction and legal background

Most websites collect personal data in order to sell it to third parties for profit.

- ▶ Personal data is any information which allows a user to be identified, including 'online identifiers' (Art.4(1) GDPR).
- ▶ Recital 30 GDPR: cookie identifiers are considered 'online identifiers'

## ePrivacy Directive

- ▶ Under Art.5(3), The ePrivacy Directive (2009) requires the data subject's **consent** for any storage of tracking technologies on their device. → **consent** is the only valid legal basis for data processing via tracking technologies
- ▶ Consent banners have become the norm when personal data is being processed.



# GDPR definition of consent

- ▶ **Art. 4(11) GDPR** defines “consent” as “any (1) freely given, (2) specific, (3) informed and (4) unambiguous indication of the data subject’s wishes by which he or she, by a statement or by a clear affirmative action, signifies agreement to the processing of personal data relating to him or her”.
- ▶ Research by Santos et al. [8] provides a comprehensive analysis of the consent requirements by grouping them into several high- and low-level requirements.
- ▶ Readable and accessible consent (Art.7(2) GDPR):
- ▶ “clearly distinguishable from the other matters, in an intelligible and easily accessible form, using clear and plain language”
- ▶ Revocable consent (Art.7(3) GDPR): The data subject must be able to withdraw consent at any time, and this should be as easy as providing it.

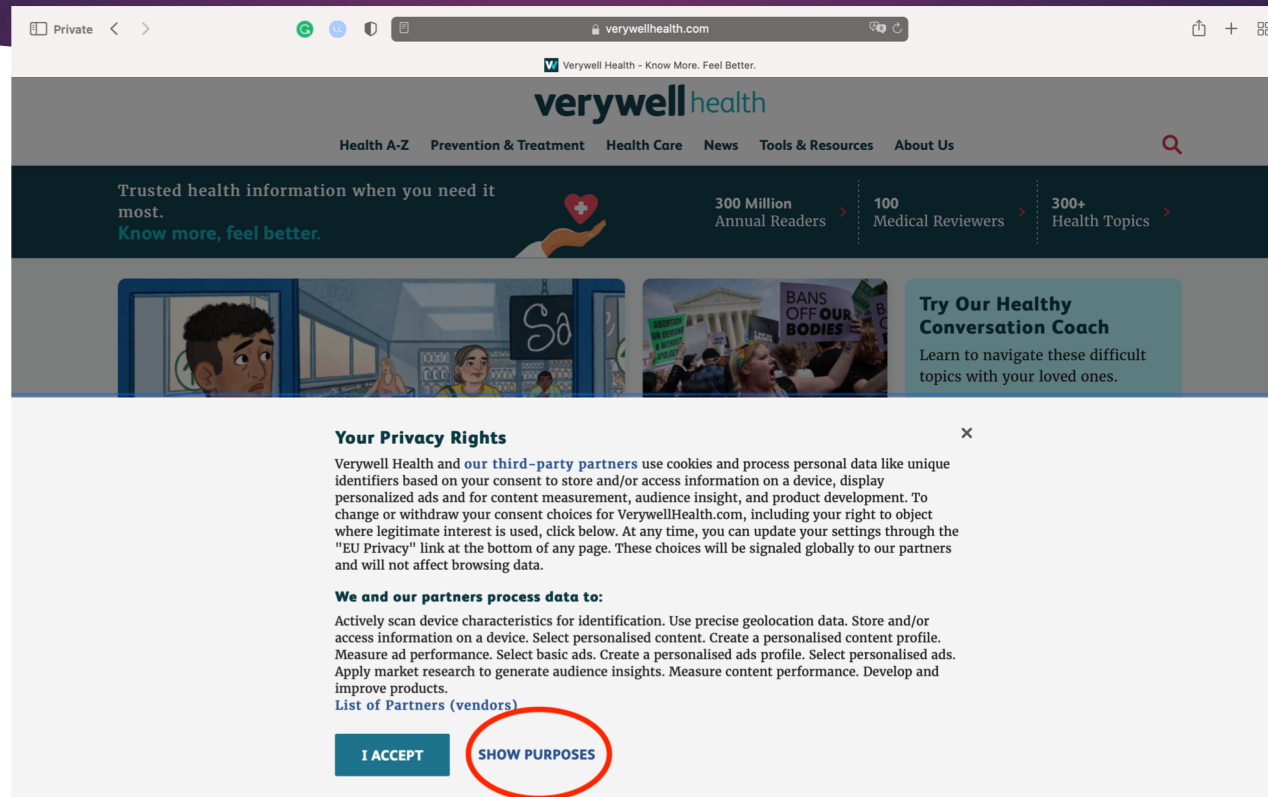
# Cognitive biases

- ▶ We are not 100% rational when making daily decisions.
- ▶ **Rational** vs. **Irrational** brain
- ▶ Kahnemann's [12] dual process theory divides decision-making into two systems:
- ▶ **Fast** (heuristics-based) system vs. **Slow** (rational) system
- ▶ Cognitive bias has been defined as a “*systematic (...) deviation from rationality in judgment or decision-making*” [5, p.1].
- ▶ Rational privacy decision-making is improbable in an economic sense [17, p.22].
- ▶ Cognitive biases can be exploited via dark patterns by nudging data subjects into unintended actions through design manipulation.

# Dark patterns

- ▶ Definition:
- ▶ *“interfaces and user experiences implemented on social media platforms that lead users into making unintended, unwilling and potentially harmful decisions in regards of their personal data” [20, para 3].*
- ▶ Dark patterns are not only present in social media but also in consent banners.
- ▶ EDPB Guidelines state: the use of dark patterns can be illegal when the valid consent requirements under the GDPR are not met.

# Immediate gratification bias



The screenshot shows the Verywell Health website with a privacy notice overlay. The website header includes the logo "verywell health" and navigation links: Health A-Z, Prevention & Treatment, Health Care, News, Tools & Resources, and About Us. A search icon is also present. Below the header, there are statistics: "300 Million Annual Readers", "100 Medical Reviewers", and "300+ Health Topics". A banner below these statistics features an illustration of a person in a pharmacy and a protest scene with signs like "BANS OFF OUR BODIES". A button "Try Our Healthy Conversation Coach" is also visible.

**Your Privacy Rights** ×

Verywell Health and [our third-party partners](#) use cookies and process personal data like unique identifiers based on your consent to store and/or access information on a device, display personalized ads and for content measurement, audience insight, and product development. To change or withdraw your consent choices for VerywellHealth.com, including your right to object where legitimate interest is used, click below. At any time, you can update your settings through the "EU Privacy" link at the bottom of any page. These choices will be signaled globally to our partners and will not affect browsing data.

**We and our partners process data to:**

Actively scan device characteristics for identification. Use precise geolocation data. Store and/or access information on a device. Select personalised content. Create a personalised content profile. Measure ad performance. Select basic ads. Create a personalised ads profile. Select personalised ads. Apply market research to generate audience insights. Measure content performance. Develop and improve products.

[List of Partners \(vendors\)](#)



# Immediate gratification bias

Private < > verywellhealth.com

Verywell Health - Know More. Feel Better.

verywellhealth

Health A-Z Prevention & Treatment Health Care News Tools & Resources About Us

Trusted health information most. Know more, feel better.

300+ Health Topics

**Customize Your Consent**

**Essential to site functionality**

**Performance Cookies**

**Targeting Cookies**

**Store and/or access information on a device**

**Customize Your Consent**

The General Data Protection Regulation (GDPR) requires businesses to collect your explicit consent before storing and using your personal data and explain what we and our third-party partners use the data for.

We use some data based on Legitimate Interest. They are essential to running our website and consent may not apply. See the "Essential to site functionality" section for a list of those cookies and partners. You can toggle your consent for all other cookies individually or as whole category. Click to the Functional Cookies and Performance Cookies tabs to do so.

Separately, since digital advertising funds our site, we work within the Internet Advertising Bureau's (IAB) Transparency Consent Framework (TCF), which allows us to pass your consent settings to all the third-party partners involved in showing advertisements on Verywell Health. Vendors may collect different kinds of data for different purposes. You can edit your consent setting for each category on the left. You can

Powered by OneTrust

List of Partners (vendors)

**Confirm My Choices** **Allow All**

**I ACCEPT** **SHOW PURPOSES**

# Immediate gratification bias – mapping to dark patterns

- ▶ **Definition:** the human propensity to disregard future risks or benefits in favor of immediate gratification.
- ▶ It often comes into play when data subjects browse the web and a consent banner interrupts their browsing activity by asking them to consent to all data processing or tailor their privacy preferences.
- ▶ **Hindering** (subcategory called **Longer Than Necessary**):
- ▶ *“When users try to activate a control related to data protection, the user experience is made in a way that requires more steps from users, than the number of steps necessary for the activation of data invasive options. This is likely to discourage them from activating such control.” [20, p.62].*

# Immediate gratification bias – legal analysis

## **Unambiguous** consent (Art.4(11) GDPR)

- ▶ 2 low-level requirements from Santos et al. [8]:
- ▶ **"Configurable banner"**  
*"The user should have an opportunity to freely choose between the option to accept some or all cookies or to decline all or some cookies and to retain the possibility to change the cookie settings in the future."*
- ▶ A "Reject all" button is necessary for consent to be **revocable** under Art.7(3).
- ▶ **CNIL v Facebook Ireland Ltd.**: method for refusing consent must have *"the same degree of simplicity as the method envisaged for accepting"* [para 90].
- ▶ **"Balanced choice"**
- ▶ Art.7(3) GDPR – withdrawing consent must be as easy providing it

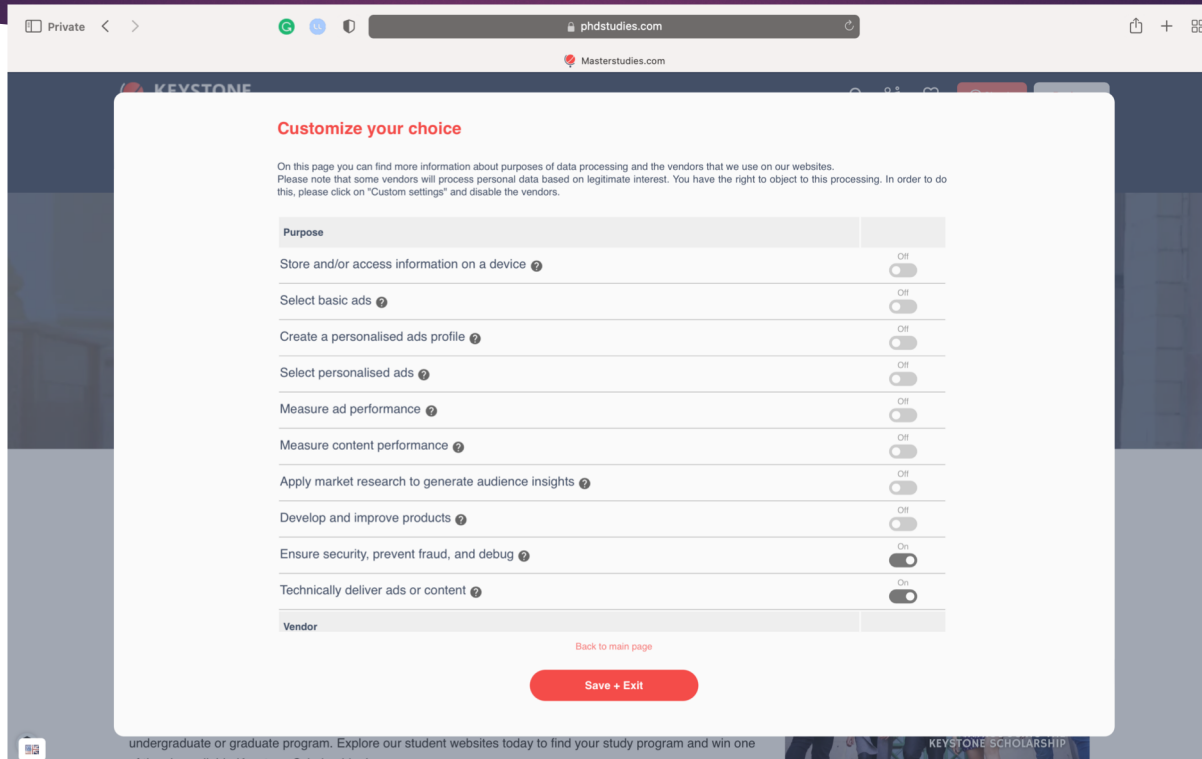
User experience research shows:

- ▶ Users do not spend more than 1 minute on websites [28]
- ▶ 93.1% of users faced with consent banners stop at the first layer of the interface [22, p.8].
- ▶ **Opinion of AG Szpunar in Planet49**: "Both actions must, optically in particular, be presented on an equal footing." [para 66].

## **Freely given** consent (Art.4(11) GDPR)

- ▶ According to the EDPB "free" implies real choice and control for data subjects" [29, para 13].
- ▶ Dark patterns strip the data subject of their agency because they nudge them towards using their fast, heuristics-based system by exploiting the online choice architecture of consent banners.

# Information overload bias



The screenshot shows a web browser window with the address bar displaying 'phdstudies.com'. A modal dialog box titled 'Customize your choice' is overlaid on the page. The dialog contains a table of cookie purposes and their status, along with a 'Vendor' section and a 'Save + Exit' button.

**Customize your choice**

On this page you can find more information about purposes of data processing and the vendors that we use on our websites. Please note that some vendors will process personal data based on legitimate interest. You have the right to object to this processing. In order to do this, please click on "Custom settings" and disable the vendors.

Purpose	
Store and/or access information on a device ?	Off
Select basic ads ?	Off
Create a personalised ads profile ?	Off
Select personalised ads ?	Off
Measure ad performance ?	Off
Measure content performance ?	Off
Apply market research to generate audience insights ?	Off
Develop and improve products ?	Off
Ensure security, prevent fraud, and debug ?	On
Technically deliver ads or content ?	On
Vendor	

[Back to main page](#)

**Save + Exit**

undergraduate or graduate program. Explore our student websites today to find your study program and win one of the six available Keystone Scholarships!

KEYSTONE SCHOLARSHIP



# Information overload bias – mapping to dark patterns

- ▶ **Definition:** When humans are faced with substantial amounts of information that they must read to reach a certain decision, information overload may occur. This means they are more likely to dismiss the presented information entirely as opposed to filtering out the important parts.
- ▶ When a data subject is flooded with information regarding the processing of their personal data in a consent banner, this renders selecting the privacy-friendly settings even more difficult [10, para 34].
- ▶ **Overloading** (subcategory called **Too Many Options**):
- ▶ *“Providing users with (too) many options to choose from. The amount of choices leaves users unable to make any choice or make them overlook some settings, especially if information is not available. It can lead them to finally give up or miss the settings of their data protection preferences or rights.”*

# Information overload bias – legal analysis

## **Informed** consent (Art.4(11) GDPR)

- ▶ **AG Szpunar in Orange Romania:** Informed consent implies that data subjects must understand the consequences of data processing [para 47].
- ▶ For example, data subjects need to understand that consenting to targeting cookies may lead to them being exposed to personalized advertisements.
- ▶ **Case C-673/17 Planet49:** Information provided must be “*clearly comprehensible and sufficiently detailed so as to enable the user to comprehend the functioning of the cookies employed*” [para 74].
- ▶ **Belgian DPA v Roularta Media Group:** when the user had to follow the policies of 449 vendors, providing informed consent was “*illusory and impracticable*”.

## **Readable and accessible** consent (Art.7(2) GDPR)

- ▶ “**Clear and concise**” consent requests (Recital 32 GDPR)
- ▶ Concise means **information fatigue** should be avoided [37, para 8].



## Conclusion and future work

1. The presumption of rationality in the data subject is wrong.
2. The exploitation of cognitive biases via dark patterns negatively affects the usability of consent.
3. The current data protection legal system needs to be amended and supported with best practices against the exploitation of data subject vulnerabilities.