

Documenting and Deconstructing Dark Patterns & Asymmetry in Online Subscription Processes

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Introduction & Objective

Growing public discontent has highlighted deceptively designed sign-up and cancellation processes for online subscriptions. These designs, called **dark patterns**, manipulate people to act contrary to their intentions and distort their decision-making capabilities.²

Dark patterns in online subscription services are often lumped into a single category. This overarching classification overlooks the distinct manifestations of deceptive practices that influence users when signing up and canceling.¹

This research examines dark patterns and asymmetry in online subscription services by documenting and deconstructing the sign-up and cancellation processes in detail.

Questions:

1. Is the effort to sign up for and cancel an online subscription asymmetric?
2. Are dark patterns encountered in the sign-up and cancellation process? If so, is the frequency of dark patterns asymmetric?

Methodology

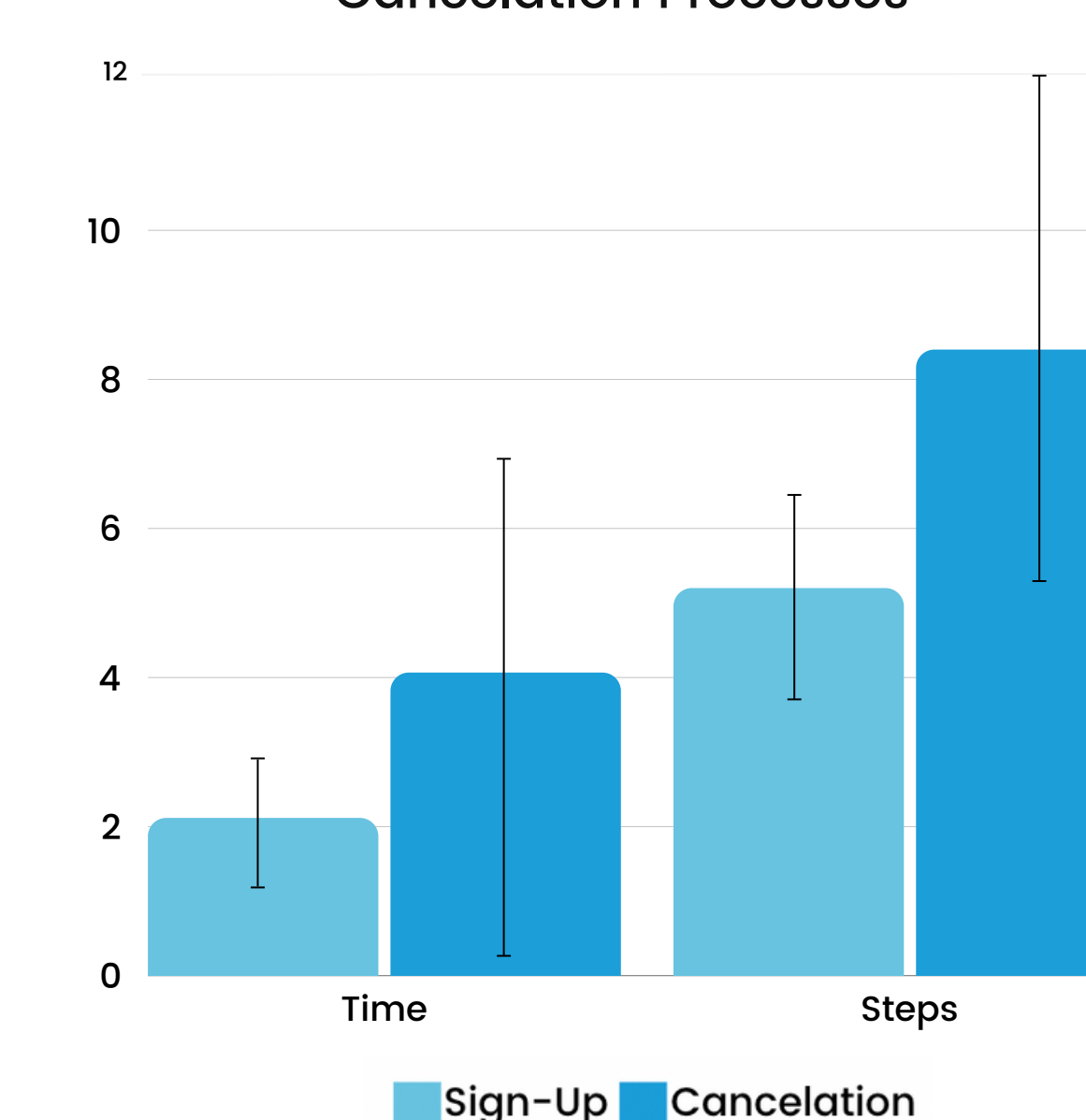
These questions were explored by creating and canceling free trial accounts for ten online subscription services. During the sign-up and cancellation process, three forms of data were collected:

- Time and number of steps are recorded as indicators of effort to sign up and cancel.
- The user interface at each step in the sign-up and cancellation process is captured and assembled into visual artifacts called **user flows**.

Analysis

After data collection, a **descriptive statistical analysis** compared time and step count differences to investigate effort-related asymmetry.

Average Time and Steps in Sign-Up and Cancellation Processes



| Subscription Service | Time | Steps | Time | Steps |
|----------------------|---------|-------|---------|-------|
| Adobe | 0:02:25 | 5 | 0:03:07 | 7 |
| Google Workspace | 0:02:41 | 6 | 0:09:51 | 11 |
| Amazon Prime | 0:02:34 | 6 | 0:01:43 | 7 |
| Paramount+ | 0:01:28 | 3 | 0:02:17 | 10 |
| Spotify | 0:03:02 | 8 | 0:02:46 | 7 |
| Audible | 0:00:40 | 4 | 0:02:47 | 9 |
| Apple TV+ | 0:03:01 | 6 | 0:02:48 | 5 |
| Figma | 0:01:09 | 4 | 0:12:29 | 16 |
| Lucidchart | 0:02:51 | 5 | 0:02:09 | 8 |
| MGM+ | 0:01:21 | 5 | 0:00:49 | 4 |

Findings

The analyses yielded the following findings:

1. The effort to sign up for and cancel an online subscription was asymmetric since canceling required more steps and time than signing up.
2. Seven different types of dark patterns were encountered in the sign-up and cancellation processes. Dark pattern frequency was asymmetric since the number of instances was higher when canceling than when signing up.

Three sophisticated dark patterns were identified but were not represented in the taxonomy's scope. They show how familiar dark patterns can be amplified by mechanizing UX/UI design concepts and choice architecture manipulation.

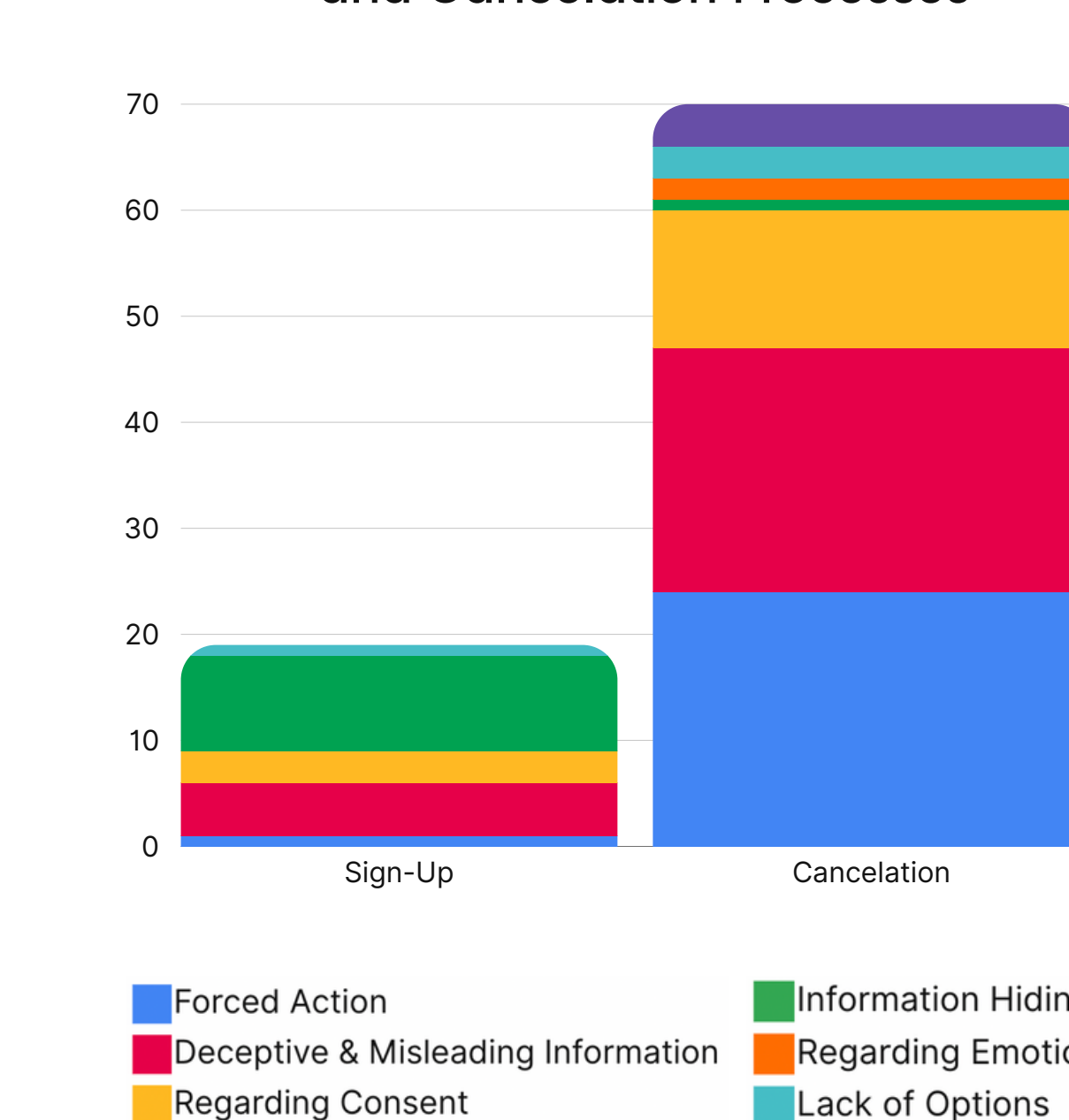
Conclusion

The relationship between sign-up and cancellation processes is asymmetrical in terms of effort and dark pattern frequency.

Future research might test these methods with a larger sample and conduct usability testing on design standards for sign-up and cancellation processes.

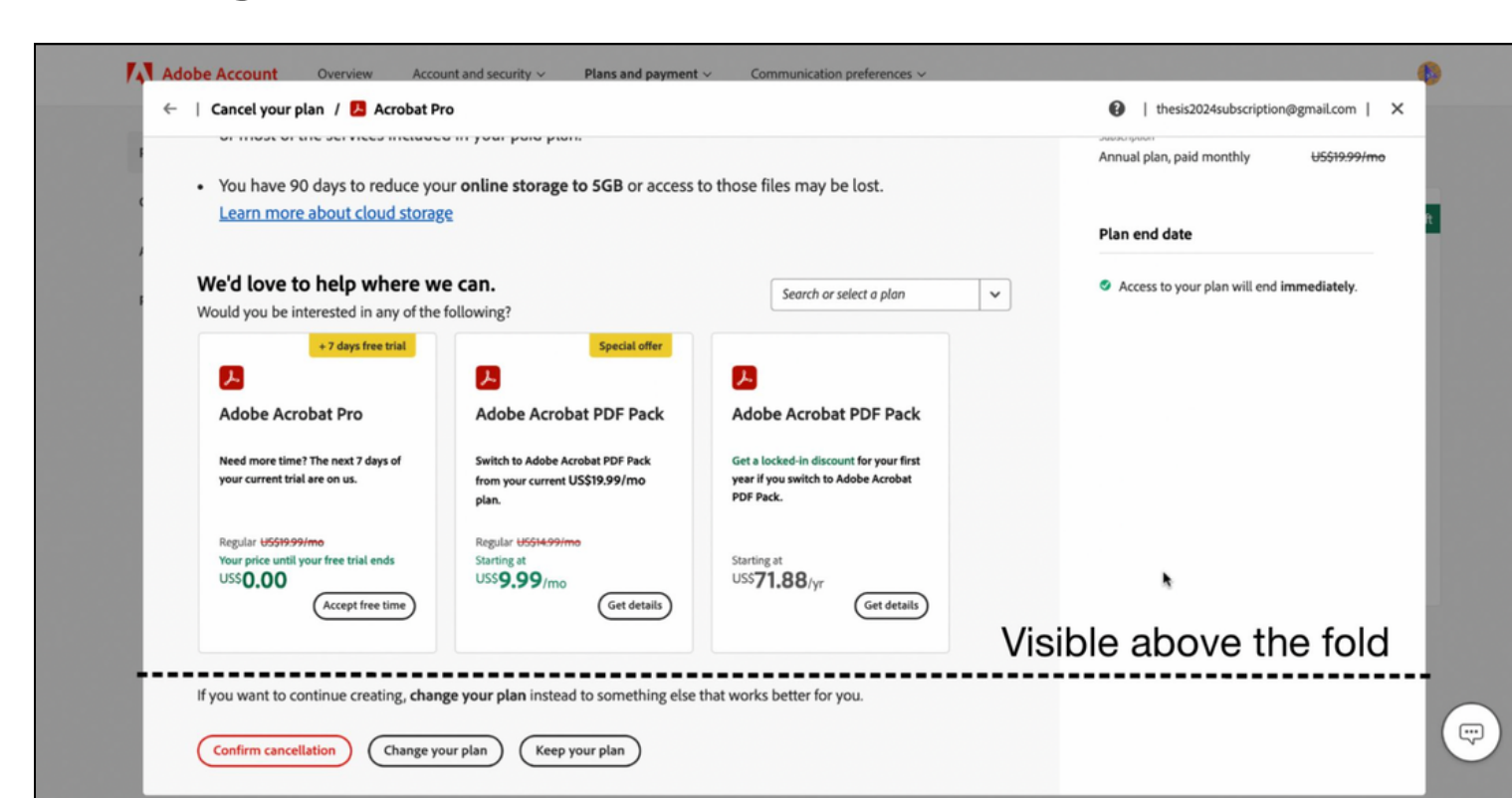
An extensive **conceptual content analysis** of each user flow classifies types of dark patterns within an integrated dark pattern taxonomy and measures the frequency of each type.³

Frequency of Dark Pattern Types in Sign-Up and Cancellation Processes

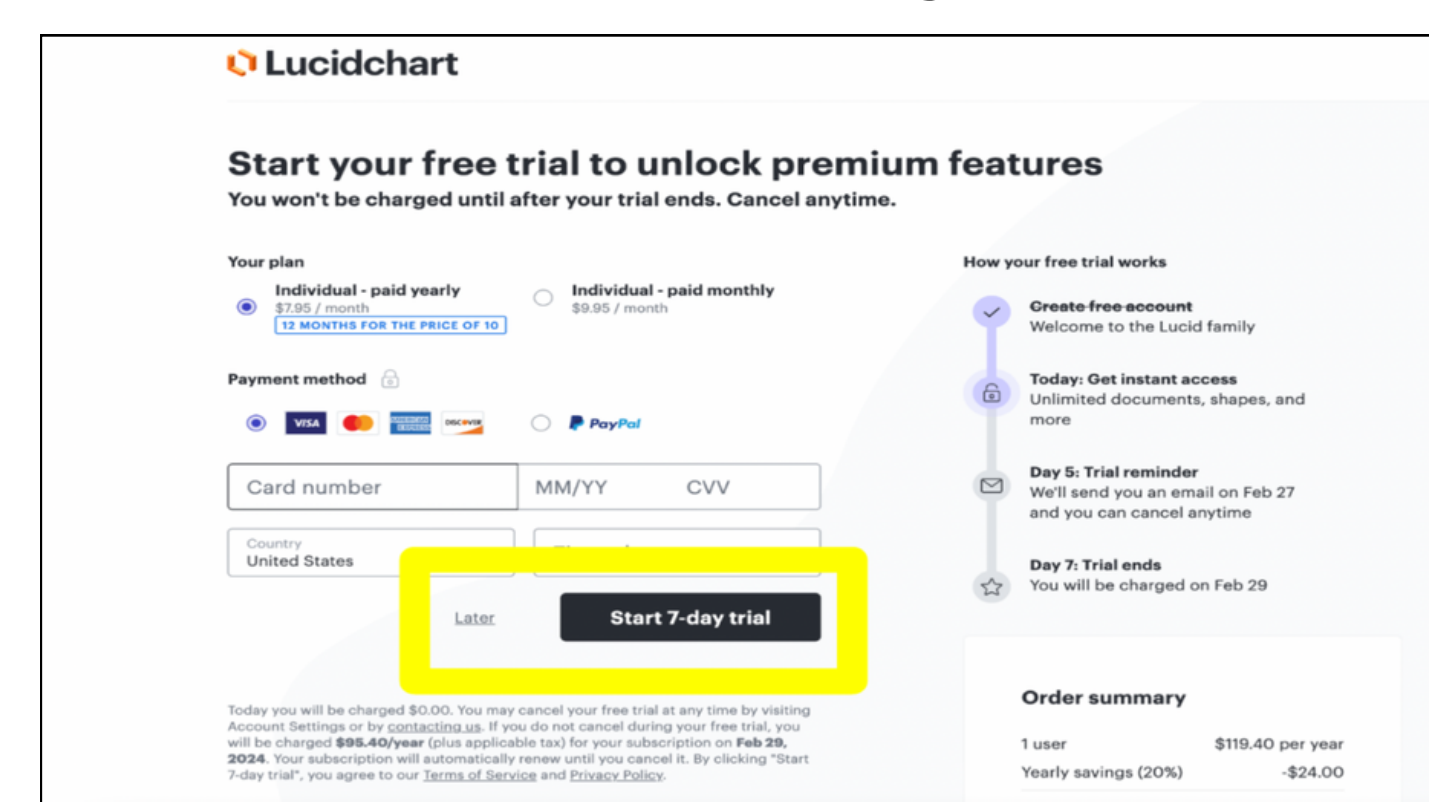


| Dark Pattern Type | Sign-Up | Cancellation |
|------------------------------------|---------|--------------|
| Deceptive & Misleading Information | 5 | 23 |
| Forced Action | 1 | 24 |
| Regarding Consent | 3 | 13 |
| Information Hiding | 9 | 1 |
| Regarding Emotions | 0 | 2 |
| Lack of Options | 1 | 3 |
| Bosch Outcasts | 0 | 4 |

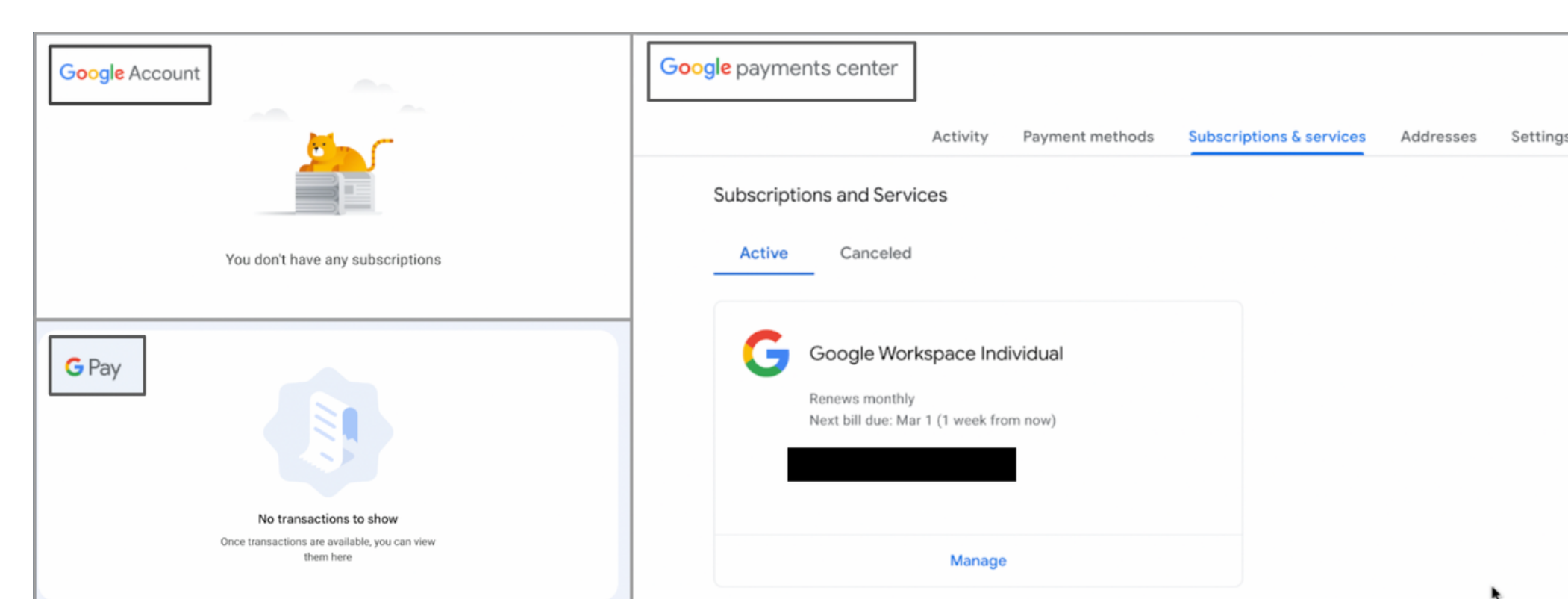
Hiding Beneath the Fold



Hierarchical Button Design



Information & Choice Architecture Manipulation



References

- ¹Gregory Conti and Edward Sobiesk. 2010. Malicious interface design: exploiting the user. In Proceedings of the 19th international conference on World wide web (WWW '10). Association for Computing Machinery, New York, NY, USA, 271–280.
- ²Jamie Luguri, Lior Jacob Strahilevitz, Shining a Light on Dark Patterns, Journal of Legal Analysis, Volume 13, Issue 1, 2021, Pages 43–109
- ³Lewis, Frank, and Julita Vassileva. "Integrating Dark Pattern Taxonomies." arXiv preprint arXiv:2402.16760 (2024).

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