Between Benefits and Threats of the Algorithmic News Personalization

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Abstract

The paper presents a study on how Czech news consumers adapted to the personalization of news. Our study is the first one that tries to deepen the existing knowledge about Czech internet users' reflections of the algorithmic news contents' personalization. The goal of the research was to gain insight into consumers' perceptions of news personalization and to identify the needs and competencies they require to protect their personal data. The research is based on three focus groups consisting of 27 participants, two of which were ordinary users from the Czech Republic, and one consisting of experts from the same country. The qualitative analysis reveals that respondents see news personalization as a loss of control over search mechanisms and information delivery. They express doubts about the credibility of personalization and describe the respective algorithms as a "black box." The study outlines defensive tactics used by users to resist personalization algorithms, and the data indicates that readers view the process of algorithmic news personalization as a threat to the management of their personal data.

Keywords: algorithmic news personalization, artificial intelligence, subversive defense tactics, informational self-determination.

Introduction

> "*One needs to learn how to live with it; nothing can be done with it anyway.*"
>
> (Jan, middle generation, secondary education)

In the last decade, we have witnessed an increasing level of deploying advanced machine learning on the Internet, allowing an efficient analysis of users' data. This has opened new distribution channels for better targeting users' interests. The most efficiently targeted personalized content strengthens the relationship between producers and their clients and increases advertising's economic efficiency (Loosen, 2018).

The use of machine-based personalization that utilizes personal data entails several (un)anticipated consequences. These relate to general ethical questions and special issues related to personal data and the right to information self-determination (Baruh and Popescu, 2015).

Research on consumers' behavior describes algorithmic content personalization as one of the most controversial marketing practices (e.g., Turow, Hennessy, and Draper, 2015).

Mechanisms of adaptation of users' behavior to risks posed by consuming Internet news have not been sufficiently analyzed in the Czech Republic. I Our study is the first one that tries to deepen the existing knowledge about Czech users' reflections of the news contents' personalization.

Literature Review: Research Questions

Opportunities and Barriers of Accepting Algorithmically Personalized Content: Sceptics and Optimists

Thurman et al. (2018) show that the acceptance/rejection of algorithmic personalization of news is multidimensionally conditioned. The research indicates that users do not feel comfortable when their needs become part of personalized targeting in which they cannot participate. Some studies suggest that especially personalized news' recipients react negatively to this absence of their participation. Groot Kormelink and Costera Meijer (2014) show that almost 90 % of personalized news recipients prefer to receive news and news applications in a form that allows them to shape this service actively.

In other words, some users feel limited by the effects of an alienated and anonymous socio-technical mechanism.

Current research brings ambiguous and situationally conditioned conclusions regarding users' (dis)satisfaction with content personalization. In general, if an "appropriate" person is approached in an "appropriate situation" by an "appropriate information service," this person is likely to use the service. Its acceptance is primarily influenced by *user satisfaction* or *perceived usefulness* (Bang and Wojdynski, 2016). This should also be applied to personalized news production. On the other hand, Barnett White's study (Barnett White et al., 2008) suggests that rejecting algorithmic content personalization is influenced by three factors: a) intensity of personalization, i.e., the level of its obtrusiveness, b) the level of personalization's justification, and c) perceived utility of personalization. If the expected level of utility of personalized content is low, users reject it, which leads to a lower probability of click-through. If users perceive the utility level of personalized content as high, they do not focus much on justification and the likelihood of their positive response increases.

Various studies, however, show that the case of algorithmically personalized news is more complicated than acceptance of personalization of goods and services. Some personalized news' recipients appreciate the utility, relevance, and trustworthiness of such content. Other recipients are scared of consuming them due to personalization invasiveness (Gironda and Korgaonkar, 2018). Some users concern about the loss of plurality of algorithmically selected news (Bodó et al., 2019), while some appreciate thematic diversity and value plurality of algorithmic (pre)selection of news content (Helberger, 2019; Haim et al., 2018; Flaxman, et al., 2016). And last but not least, one of the key situational factors which determine acceptance/rejection of algorithmic news personalization is the trust in media and journalists. However, the trust is low and still falling among Czech media consumers.

Generally speaking, various research findings are contradictory in describing how different regional socio-technical experiences of users with media affect the acceptability of personalized news in different media systems. This leads to the first research question

(RQ1): **What do Czech respondents see as benefits and threats of news personalization?**

The Main Causes for Perceiving Threats to Privacy: Poor Understanding of the Technical and Legal Framework of Algorithmic Personalization

The acceptance of personalized content is often in conflict with concerns about the loss of privacy. The theory of general privacy protection proposes that users who consider personal data collected in the online regime problematic are more concerned about their loss and misuse (Boerman, Kruikemeier, and Zuiderveen Borgesius, 2018). As shown by Barnett White et al. (2008), the likelihood of rejecting personalized content grows according to how much it interferes with an individually perceived border of own privacy. Some studies indicate that feelings of privacy threats in various forms represent the main barrier to the smooth acceptance of personalized content, for instance, concerns about personal data collection by unauthorized subjects (Dinev and Hart, 2006). However, effective data protection depends on the level of technical and legal literacy of users. If their literacy is insufficient, their decision-making autonomy and their feeling of control over personal data are weak (Boerman, Kruikemeier, and Zuiderveen Borgesius, 2017; Tugend, 2015; Ur et al., 2012).

Internet users, however, differ significantly in the level of understanding the process of digital content personalization (Fletcher and Nielsen, 2019; Thurman et al., 2018). For instance, Eslami et al. (2015) suggest that users have low awareness about the nature of algorithmic filtering. Powers (2017) found that even college students had not been sufficiently aware of advertising and news personalization algorithmic nature. The level of Czech users' competencies implies low general media literacy of the adult population (e.g., Jirák et al., 2016). Such insufficient knowledge probably causes them to perceive the personalization mechanism as a tool for threatening their privacy. Several studies on user behavior in an online environment confirm this claim. They show that respondents with better Internet knowledge and user competencies are more confident when protecting themselves against personal data misuse (Xiao et al., 2014).

To achieve elementary information autonomy, users need to understand both the consequences of their actions on the Internet and the technical conditions that influence their actions. Otherwise, they cannot fully exercise their information self-determination. Moreover, their consent with personal data processing granted according to the General Data Protection Regulation may not be considered as informed and, therefore, valid (EDPB, 2020). This leads to the second research question

(RQ2): **To what extent do Czech respondents understand the rules and mechanisms of algorithmic news personalization and the respective technical and legal regulation?**

Algorithmic and Personal Curation: Strategic Practices of the Powerful v. Tactics of the Weak

The imbalance between the power of an algorithm (its owner) and the weak receptive autonomy of its users leads us to the following questions: Do at least some consumers of algorithmic news use resistant tactics against the oppressive power of an algorithm? And do they perceive this socio-technical environment as unequal and, therefore, potentially conflicting?

This conflict of power can be described as an application of two theoretical concepts defined by Michel de Certeau (1984): subversive *tactics of the weak* that serve as protection against "*strategies of the power*," which are not represented only by an algorithm itself but also by its owners and creators. The relationship between "a strategy" and "a tactic" is related to socio-political power. The *strategies of the power* can be perceived as an umbrella framework of governing institutions and their goals. "Strategies are considered to be hegemonic at all times, and referring to all hegemonic structures" (De Certeau, 1984:113). In this sense,

a personalization algorithm has a disciplinary and manipulative potential that utilizes mass distribution of prefabricated information capsules to control the behavior of recipients of various contents, including news. On the other hand, the *tactics of the weak* represent individual actions that take place in everyday life. As opposed to strategies, tactics do not seek profit and are not planned. They are rather reactions to a situation and an opportunity. Tactics can be perceived as limited freedoms in an empty space left to users, often unintentionally by creators of strategies.

We understand users' resistant tactics in the context of algorithmic personalization as a form of their behavior that functions as a protection (a) against personal data abuse (b) from loss of plurality of algorithmically selected news. From the perspective of everyday consumption of personalized news, applying these tactics represents a specific type of resistance that often unconsciously and unintentionally exploits strategies of algorithms' owners or creators for their own goals. We are interested in which degree the users apply the defensive tactics against these strategies of algorithmic power.

In this regard, our research focuses on the crucial dilemma of users of whether to accept the recommendation by an algorithm or whether to rely on their own individual distrustful defensive tactics. This discrepancy between algorithmic and personal data management was described by Thorson and Wells (2016). They defined "personal curation" as an intentional and targeted formation of users' information environment to meet their own information goals and needs. "Personal curation can mean both direct expression of preferences, as well as indirect forms of personal curation by controlling the use of their personal data and the extent of data-driven personalization" (Monzer et al., 2020:15). As opposed to this individual tactic, an "algorithmic curation" represents a universal strategy that pressures users to adapt more or less unconsciously to the algorithm and its technical logic of information processing.

The research, however, does not provide a clear answer to what determines the choice of one of these two types of curation. Some studies described preferences for individual decision-making and individual personal data management (Dietvorst et al., 2015). Some studies show users' preferences for algorithmic recommendations and choices (Logg et al., 2019; Dijkstra, 1999). It seems that the use of these tactics depends primarily on the level of media literacy, respectively, on users' technical and legal competencies. We hypothesize that consumers with high and low competencies "invent" individual tactics. The first group has expert user self-confidence, which refuses to submit to the logic of algorithmic external control. The second group is determined by a high, a priori distrust of technology, which is not based on expert knowledge. Instead, it is based on a general socio-political distrust of the power system.

However, the studies conducted so far do not explain how users experience their defensive actions and their will to exercise the right to informational self-determination. It is also unclear what personal tactics users apply against the pressure of algorithms and their operators who wield political and economic power via strategic utilization of news personalization.

Therefore, we focus on users' individual defensive tactics towards the power of algorithms and their owners or the regulations. This leads to the third research question

(RQ3): **What defense tactics do users apply to resist the algorithm's oppressive power?**

Methods

Data Collection: Respondents and Discussion Topics

To collect data, we chose a qualitative method of moderated group discussions – so-called focus groups (Puchta and Potter, 2004). Two discussions were conducted at the end of August 2020 in Prague, Czech Republic capital (27.8. 2020) and in Brno, the largest city of the eastern part of the country (24.8.2020). We consider the quantity of three discussion groups as sufficient with regard to the aims of the study. The three groups were deemed sufficient, since over 80% of relevant themes are discoverable within two to three focus groups (Guest et al., 2017). Before the discussions took place, we had conducted pilot pretests of the scenario with five randomly selected visitors of an Internet café. The aim was to verify the comprehensibility and unambiguity of the main open questions.

In total, 27 respondents participated in the discussions. They were recruited by a market research agency which ensured their sociodemographic and media consumption diversity. We designed the discussion groups to reflect respondents' diverse and unequal experiences with the phenomenon of algorithmic content personalization. Respondents differed in their information literacy level, i.e., their experience with various types of information services, personalized advertising, and personalized news.

As opposed to other qualitative studies on this topic, the research design also includes an analysis of two types of respondent's perspectives. It compares opinions of common users and experts who deal with various aspects of algorithmic personalization. Among respondents, there were a) end-users – laymen; b) experts in work with information systems; and c) experts acting as end-users – specialists working in an organization that carries out information and data analyses on an ad hoc basis.

The aim was to capture different experience-based perspectives. The discussions' interactive nature made it possible to identify how respondents with varying user experiences negotiated, argued, and legitimized their views on the topic.

Two groups comprised common users who spend on average more than an hour a day on the Internet at least four times a week. Apart from sociodemographic characteristics, when recruiting the respondents for the groups of common users, we made sure that these users had not had either professional experience or education in IT, law, and media (journalism, marketing). The sociodemographic structure of both groups represented the basic characteristics of gender, age, and education level (see table No. 1).

The length of discussions with common users varied between 97 (Brno) and 115 (Prague) minutes; with experts, the discussion took 134 minutes. All discussions were moderated by the author of the research design, who also analyzed the data. The advantage of this research strategy lies in a higher sensitivity of the researcher-moderator in directing the discussion to maintain a link to the research goal (i.e., to the research questions).

Tab. 1 Sociodemographic characteristics of respondents: two groups of common users

Group Brno 24.8. 2020 (N=10)				Group Prague 27.8. 2020 (N=10)			
Sex	**Age**	**Education**	**Number**	**Sex**	**Age**	**Education**	**Number**
Man	28	Primary education	1	Man	31	Primary education	1
Man	35	Secondary education	1	Man	45	University education	1
Man	38	University education	1	Man	49	Secondary education	1
Man	48	Secondary education	1	Man	55	Secondary education	1

Man	67	Secondary education	1	Man	68	Secondary education	1
Woman	29	Primary education	1	Woman	24	Primary education	1
Woman	35	University education	1	Woman	43	University education	1
Woman	39	Secondary education	1	Woman	41	Secondary education	1
Woman	44	Secondary education	1	Woman	65	Secondary education	1
Woman	68	Secondary education	1	Woman	69	Secondary education	1
In total			**10**	**In total**			**10**

Source: own elaboration

The third group comprised experts from selected fields (IT, law, and media). We designed the group to create a comparative framework with common users (see table No. 2). The group consisted of two IT experts (a scientist and an IT developer), three lawyers, a journalist specialized in machine learning, and a marketing specialist focusing, among others, on personalized advertising. The group comprised members of the younger middle and middle generations (30-55 years old).

Tab. 2 Sociodemographic characteristics of respondents: group of experts

Group Prague 27.8. 2020 (N=7)			
Sex	**age**	**Field of expertise**	**Number**
Woman	43	Law	1
Man	45	Law	1
Man	48	Journalism	1
Man	32	IT	1
Man	46	IT	1
Man	52	Law	1
Man	36	Advertising and marketing	1
In total			**7**

Source: own elaboration

Each discussion started with respondents' brief introduction and a question on (a) their general user relationship to ICT regarding their techno-optimism or techno-skepticism.

Next, the respondents replied to question (b) how they understood the mechanism of algorithmic personalization of advertising and news and what differences they saw between these two types of content. The discussion's core focused on (c) what benefits and threats the respondents saw in personalization and what arguments for or against its use were considered decisive. Finally, the discussions focused on (d) the users' tactics to protect personal data, prevent their misuse, and eliminate manipulation by an algorithm. In the final thematic block, the respondents discussed (e) their recommendations on making personalization more efficient with regard to their broader participation and control over the process of news personalization.

The Strategy of Data Analysis: Open and Axial Coding

The analyzed material consisted of three audiovisual records and verbatim transcription of the three moderated discussions. In line with the grounded theory (Glaser and Strauss, 1967), we used *abductive reasoning* (Lipscomb, 2012) instead of traditionally used inductive reasoning. The abductive reasoning allows finding an explanation of an observed phenomenon that cannot be *directly* deduced from available

knowledge on the topic but seems in a particular situation as the *most probable*. As opposed to induction, abduction does not derive conclusions from a finite number of cases to identify phenomena of general nature. It allows for more possible interpretations and allows finding a common explanation for seemingly unrelated information, facts, or data. As opposed to inductive and deductive reasoning, abductive reasoning allows explaining, creating, or changing a theoretical framework before, during, or even after the research process. Therefore, this approach is appropriate for exploratory, qualitative research that often creates 'only' research starting points. Our research followed this strategy as well.

We used open and axial coding (Corbin and Strauss, 2015) when analyzing verbatim transcriptions of respondents' speeches. Due to the study's exploratory nature, we chose a procedure that systematically presented empirical data as a set of interrelated abstract categories that represented users' specific communicative actions. We repeatedly compared the speeches in the process of both types of coding. Firstly, we divided the analyzed discussions with open coding into smaller parts to identify the main rhetoric concepts and their meaning that the respondents had constructed in their speeches. Subsequently, with axial coding, we created broader semantic categories from the partial codes. The system of categories (see Appendix, diagram No. 1) created in this way allowed us to describe their relationships and to reveal the motives of the users' communicative actions.

We identified subcategories, their abstract connections, and higher semantic units – complexes composed of partial codes for each relevant speech. These operations allowed us to create seven main categories related to various aspects of algorithmic personalization of news contents and define the main reflective frameworks used by respondents in relation to the given agenda.

The following three categories have the most stable position in the model: (1) *cognition* and (2) *emotions* that determine ways how respondents *understand* or *experience* the impact of algorithmic personalization, and (3) users' behavioral patterns that reflect respondents' views on how they would like to consume personalized news or how they consume it. Other categories reflect the direct relationship of respondents to the analyzed personalization mechanism: (4) *benefits of content personalization*, (5) *respondents' concerns about negative impacts of algorithmic curation*, (6) *defense tactics* used to alleviate these concerns, and (7) *recommendations* on how to increase the trustworthiness of the personalization process.

Results

Optimists vs. Skeptics

Most common users defined themselves as moderate techno-skeptics in relation to new information and communication technologies (ICT). They declared distrust in algorithmic personalization. Their attitudes ranged from intensely anxious and quasi-paranoid ideas to rational skepticism based on doubts about the possibility of preventing the misuse of communication technologies for the fulfillment of economic and political goals.

> *We are* **watched much more than ever before**. (...) *If somebody wants to, they will know everything*. (a woman, 39, secondary education),

The experts identified themselves as strong techno-optimists. However, they balanced this viewpoint by mentioning the potential misuse of the ICT. As if behind the mask of their techno-optimistic attunement, there was a glimpse of suspicion about big ICT-related problems.

> ***I am probably more of a techno-optimist****. I think that* (…) *any new technology bears some risks. (…) This applies to any technology, including new offline technologies, such as phones, the Czech Post, or anything similar. So I am somewhat optimistic.* (a man, 45, university education)

> *I am both because I do the research and enjoy it. I think there is a potential of* ***creating something exciting in the future****. And something like this has already been done.* (a man, 32, university education)

> ***I am an optimist****.* (…) *Even though I start to see things more pessimistically. The evolution and development of those technologies bring this. At the same time, the other side will always use these technologies a little ahead of us.* (a woman, 43, university education)

Benefits and Threats of the Algorithmic Personalization of News

Common users had no difficulty describing the general meaning and purpose of algorithmic content personalization or the general functions of a personalization algorithm. Their experience with personalized advertising corresponded to routine practice. However, most respondents were unable to recall the names of the news media that personalize their news. They also had difficulty finding the differences between personalized advertising and personalized news.

> ***It's the news, and then the goods****. Those services. (…)* ***It offers me what I look at****. I take it that the advertising is there because I can download it for free. Someone will just pay for it.* (a man, 35, secondary education)

Common users were generally more critical of news personalization than experts. They adopted vigilant attitudes of mistrust and skepticism towards the news personalization. In particular, they emphasized its *manipulative nature*. In half of the used semantic characteristics, they associated it negatively as *one-sided*, *aggressive*, and *manipulative*. The perception of *trustworthiness/untrustworthiness* was polarized evenly. Concerning the *safety/danger* of news personalization, the largest share of respondents took an ambivalent, central position. In several statements, a certain vigilance, latent, and sometimes even manifest distrust could be indicated. It was primarily related to the fear of personal data abuse and manifested itself in the form of two rhetorical figures: (a) *declaration of an extreme feeling of threat* and (b) *calm vigilance*.

> ***I'm afraid more and more*** (…). ***I don't want us being watched****.*
> (a woman, 44, secondary education)

> (…) ***The intention is not to deal with us honestly; it is used by those who want to manipulate you;*** *therefore, everything is so complicated.* (a man, 38, university education)

> ***It is a cursed business*** (…) ***God knows what the powerful are preparing for us based on the information they have about us globally.*** (a man, 48, secondary education)

On the contrary, in the expert group, a positive image of news personalization prevailed. Experts emphasized that *providing personal data is more or less a harmless operation*. As opposed to common users, experts did not mention concerns about personal data misuse at all. Experts, just as common users, were mainly of the opinion that algorithmic personalization is *useful*.

Half of the common users declared the same opinion and emphasized that content selection saved their time and allowed them to avoid a wide range of topics and articles that were not of their interest. The other half did not share the same opinion as they emphasized concerns about a privacy breach.

> It is **probably not very useful** because it uses our data. (a man, 31, primary education)

> It saves time for a lot of people. In contrast to having to search (…), **they improve the services. It suits me, and I don't have a problem with it**; it's a good deal for me. Because mostly the pages are then for free. (a man, 49, secondary education)

Experts' views were much more structured. They emphasized the relationship between customer service and the market efficiency of an algorithm, with which the respondents associated mainly the positive characteristics.

> I see personalization **positively**. I can't think much of its negative aspects. Here they appeared in terms of how information is disseminated. **Such popular ideas that it locks people in those social bubbles**. However, I would not agree with these opinions so blindly (…) **the locking into social bubbles has always been there in history. And it's not about that the Internet divides us now**. (a man, 46, university education)

However, both groups agreed that news personalization could *homogenize opinions*, *shape unilateral electoral behavior*, and *contribute to society's polarization*. Users feared that they would be or had already been trapped in a so-called *filter bubble* and that news personalization would reduce their plurality of opinion.

> News personalization is **more dangerous from the perspective of society**. In influencing. (a woman, 41, secondary education)

> **They are just pushing us for what they want. The news and the media are differently oriented, owned by certain people. Therefore, they provide different disinformation**.
> (a woman, 43, university education)

This opinion was stronger in the expert group that emphasized the political consequences of limiting content plurality through personalization.

> What I see as negative is that they will (…) serve me content, which will then only be **"unilaterally" focused on what I used to look at and would not allow me to look elsewhere. If I wanted to "run away" from the Republicans to the Democrats, the personalized content would make it harder for me**, which is maybe negative. (a man, 52, university education)

Understanding the Technical Nature of Algorithmic Content Personalization and Its Regulation

The respondents' above-described concerns and generalized distrust are related to their weak or not very applicable technical skills and little knowledge. The respondents who declared the strongest feeling of threat often could not imagine how personal data abuse could be technically done or who might be interested in their personal data. They were also utterly clueless about how to protect themselves.

> **I don't understand how it's possible that they know I'm interested in something**. I wonder why? Somehow I registered somewhere and logged in. And it's just packing up. (a man, 55, secondary education)

When questioned whether news personalization should be controlled and regulated, the respondents had no clear answer and proposed general market options that they subsequently questioned themselves.

> *The person setting it up is probably the media owner.* **I can't imagine how to control the owner or the opinions of her employees**. (a man, 45, university education)

> *I think* (…) **this can be regulated by the state if the state wants to**, *but if it's actually the policy, they don't want to regulate it. They want their policy to be there*. (a woman, 29, primary education)

> *I don't know* (…) **maybe it could be influenced by those who read it**, *that when a few people are reading the news* (…) *when I subscribe only to one newspaper, I will take over the opinion from this newspaper, from the one that will write about it. If I don't read another, I will believe what the first newspaper reported*. (a man, 28, primary education)
> *I am probably* **also skeptical about whether it could be somehow, not necessarily controlled, but rather enforced, that it is possible to judge it and evaluate it in some way** *(…)* (a man, 48, secondary education)

> *The way out of this is* **giving more responsibility to the recipients, but this needs to go hand in hand with some long-term educational strategy** *and some adaptation of the educational process so the people could get oriented in the media environment in a qualified manner.* (a man, 43, university education)

The experts were similarly skeptical, although the level of their competencies in the field was substantially higher.

> *Artificial intelligence is not regulated by law.* (…) **These technologies are progressing very quickly, so regulating something like this by a legal norm would not be useful as it would get obsolete within a few years**. (…) **It is currently simply not possible to create any legal norm**. (a woman, 43, university education)

An Algorithm as a Power Structure v. Subversive Defense Tactics of Users

The respondents described their adaptation to an algorithm's manipulative impact with the help of two basic defense tactics: (a) *defensively adaptive reconciliation* with limited possibilities of controlling the personalization mechanism, and (b) *open* defense of *values and personal freedom*. The first tactic prevailed mainly among common users who had characterized it with a rhetorical figure "*one needs to learn how to live with it; nothing can be done with it anyway.*"

> **We need to learn how to live with it** (…). **It is necessary to try to adapt.**
> (a man, 67, secondary education)

The experts declared a similar adaptation to the algorithm's unshakable power (the strategy of the power). Their argumentation differed only by its objectification by referring to the professional discourse.

> *I am not a great optimist as to safety (…)* **when I sit at a computer, it is like someone would all the time look from behind my shoulder** *(…) Google has the policy to store various data that it can access and never to delete them.* **That is how it functions in the current world**.
> (a man, 38, university education)

The proponents of "defense tactics" implemented through the possibility of *leaving the websites* had a dispute with respondents who believed in their ability to recognize manipulation and rely on the tactic of "*istancing*" themselves from such content. Some respondents emphasized that they can recognize the algorithm's manipulative strategy. As the best defense against manipulation, they recommended relying on their feeling (intuition).

> **I don't consider it dangerous if I can somehow distance myself from it** *even though it is manipulative.* (a man, 49, secondary education)

> *How could you perceive it objectively?* (…) **I will never adapt in my lif**e (…) *to anyone restricting us or anyone knowing, for instance, what my political opinions or personality traits are. And then* **misuse this on one lovely day**. *That* **some person would feel like a superhuman** *and decide to misuse data of this group of people because she does not like them.* (a woman, 68, secondary education)

Discussion

This part summarizes the main findings and answers to the research questions and offers their critical reflection, including the research challenges they raise. Our study depicts users' behavioral patterns of a selected sample of Czech personalized news' recipients. The research aspires to understand how these users communicate with news personalization algorithms. We aim to provide feedback not only to algorithms' authors but also to regulatory bodies.

Unlike other qualitative studies on this topic, this study's design involves analyzing two user perspectives. It compares common users' opinions with the experts who deal with the topic professionally on the research, technical, or legal level.

Given the study's exploratory nature, our primary aim was to introduce respondents' statements as an ensemble of mutually interacting speeches. Such a system of variables allowed us to describe the main emotional and cognitive categories and their mutual relations. Thereby we were able to infer motives for action and experience of the personalized news' recipients. The described users' social fields allowed us to reply to the three theoretical research questions. The order of answers corresponds to the three main categorical dimensions: (1) emotional, (2) cognitive, and (3) behavioral.

Emotional Dimension: Perception of Users' Experience

Only a minimum of common users accepted news personalization without reservations. Most users had doubts about the utility of a personalization mechanism, which was the only characteristic that was evaluated relatively better than other characteristics. Analysis identified four types of negative perception of a personalization algorithm. At first, common users predominantly expressed (a) *distrust* in news personalization, which is probably related to a generally high degree of skepticism of the Czech population about personal data use in cyberspace (e.g., Firlová, 2020). The communicative behavior of several respondents indicated that the *privacy paradox* influenced them. Respondents who do not feel safe as users tend to be more passive concerning personal data protection (Norberg, Horne, and Horne, 2007).

According to common users are two causes of weak trust in algorithmic personalization - *insufficient transparency of the technical side of the personalization process*, and *insufficient transparency of its editorial part*, i.e., the role of those who operate an algorithm. They felt 'powerless' when facing an algorithm. Their *critical skepticism* related primarily to an impossibility to control algorithms' behavior, which they described as a tool for an uncontrolled power-economic manipulative game. Some of them proposed the following solutions to this problem:

- o   Operators shall provide users with a more ample opportunity to participate in the personalization process. Users would prefer a more active role in the personalization process;
- o   Users should have more opportunities for controlling a setup of an algorithm. Users require that authors and operators of personalization algorithms should design these with considering users as co-creators who have the right to control how their personal data are to be processed;
- o   Operators need to be more perceptive and open to dynamic updates of selected users' characteristics;
- o   It is essential to increase the transparency of developers and editors of applications and personalized content;

- o   It is necessary to provide regular notifications about individual settings' status to allow users to update their interests more often;
- o   It is essential to increase the transparency of developers and editors of applications and personalized content. Some respondents emphasized that a transparent identity of personalization's primary initiators would increase the trustworthiness of the whole process.

On the contrary, experts fulfilled the precondition of experiencing news personalization in a safe manner much better than common users. Their better knowledge and competencies probably inhibit potential feelings of threat. The experts' techno-optimism corresponded with findings of older studies on privacy protection that suggested that technological competencies increased users' feelings of safety and created a 'false sense of security' (Van Noort et al., 2008).

When any of the experts talked about a partial threat of algorithmic personalization, they usually associated it with technical problems that could be solved, such as an algorithm's none or too slow response to changes in users' interests or value preferences. Experts were primarily interested in technical solutions, and unlike common users, they did not complain about the negative implications of profiling users' identities based only on specific features.

Most common users expressed (b) *concerns about loss of privacy*. The users indicated strong doubts about the level of responsibility of operators and editors of personalized algorithms. Some respondents' reactions were strongly distrustful, which could be partially explained by existing problems identified in the legal domain. These are, for instance, rising information asymmetry, use of dark patterns, cookie walls, difficulties to provide truly informed consent, or familiarity with cases in which providers of online services intentionally did not comply with privacy laws (e.g., Zuiderveen Borgesius et al., 2017). The respondents used this distrust as an argument for their unwillingness to provide personal data for news personalization. Thus, they unknowingly pointed out the difference between primary and secondary personal data utilization, as suggested by Turow et al. (2009). Many common users emphasized in this regard the possibility to prohibit other subjects from collecting personal data. The following motivation for refusing news personalization is also related to concerns about personal data abuse.

The respondents from both groups expressed (c) *concerns about a socio-technical practice of manipulating political values* by owners or institutional users of algorithms that utilize personal data for the benefit of particular political or economic subjects. As reasons for their concerns, the respondents stated the commercial interests of algorithm owners and their insufficient perceptiveness towards their value preferences.

Finally, the negative perception of a personalization algorithm was also related to (d) *doubts about whether algorithmic news personalization can preserve the pluralism of opinions for readers.* Like respondents in other studies, the participants in our study shared concerns that algorithmic news selection narrowed a diversity of content and depth of news (Bodó et al., 2019). The respondents mostly articulated concerns that news personalization leads to homogenization of opinions, forms one-sided electoral behavior, and contributes to society's polarization. This confirms findings of other studies that described the mechanism of closing users into a value trap of a 'filter bubble' (Helberger, 2019; Haim et al., 2018).

Generally speaking, comments of common users about their experience with news personalization suggest that this socio-technic process weakens their ontological security (e.g., Giddens, 1990). In other words,

according to respondents, news personalization weakens their trust in the stability of their socio-political environment. News personalization should, however, create a safe symbolic environment in the uncertain social world. If users do not experience algorithmic news in a secure way, the risk is that they will perceive social and political order as uncertain and unpredictable.

Cognitive Dimension: Consequences of Limited Understanding Legal and Technical Principles of News Personalization

In general, common users had no difficulties describing the purpose and the aim of algorithmic news personalization. However, their experience was primarily formed by consumer behavior. In this regard, the respondents (a) *did not differentiate between algorithmic advertisement personalization and news personalization.*

Common users and some experts used the following logic: an advertisement manipulates users to increase consumption, and news personalization aims to gain as many readers as possible; therefore, in both cases, manipulation is used. There we could identify fulfillment of the mechanism of 'generalized skepticism' as described by Fletcher and Nielsen (2019). The generalized skepticism was also reflected in other parts of the criticism of news personalization.

Other cognitive difficulties were caused (b) *by respondents' low understanding of the technical side of the algorithmic selection.* Respondents perceived this lack of knowledge and little experience with this socio-technical form of addressing readers, which for most of them did not represent their everyday practice. It was one of the reasons for their inability to protect themselves against what they felt as professional manipulative practice in news personalization.

Other limits were given by (c) *their little legal knowledge that weakened their motivation to exercise the right to informational self-determination.* The knowledge related to possibilities of legal protection or regulation of personalization was minimal. Especially the discussions among common users showed the contradiction between strong criticism of threats caused by personalization and giving up on legal rules. This technological and legal uncertainty unconsciously strengthened the suggested *generalized distrust* in personalization as a socio-technical process.

Behavioural Dimension: Tactics of the Weak in the Oppressive Space of a Personalizing Algorithm

Our research shows that respondents, just like respondents in other studies, gave great weight to the possibility of personal curation of personalized data (Thorson and Wells, 2016). The personal curation shall increase control over an algorithm and provide an option to use the tactics of the weak as a possibility to 'deny obedience' to designers and regulators.

The respondents preferred to be able to express their preferences directly and to control the scope of personalization by inspecting the use of their personal data. Some users could imagine news personalization as a joint project of media and media consumers, i.e., a reciprocal process in which there is space for individual curation that strengthened the audiences' trust.

The above-described prevailing distrust of common users and their generalized feeling of powerlessness was also manifested in their skeptical view on the possibilities of effective protection against oppressive

strategies of a personalized algorithm. The respondents were aware that the effectiveness of their *defense tactics* in this process was dependent on the power of technical tools and regulatory measures. These could be both helpful, or they could also limit them when exercising their own free will and the right to informational self-determination against the pressure of an algorithm.

In this sense, the respondents were very sensitive to any limitations of users' activities. There was a particular discrepancy between the (often false) self-concept of active users of the algorithmic personalization process and the feeling of insufficient control of the whole process. The respondents said they lacked the tools to exercise their own will, especially given the already mentioned weak response of algorithms to users' changing interests. Some common users declared that this ignorance of an algorithm evoked a feeling of being a rightless object of the personalization mechanism, with which they could not cope.

However, some common users and experts reacted to an algorithm's technical and alienated behavior by utilizing subversive guerilla tactics that were supposed to eliminate risks connected to the loss of control over personal data. Some respondents declared an attempt to undermine the dominant power of an algorithm up to the point of using a hacker attack to shut off a service (an algorithm).

In the discussions, the respondents explicitly and implicitly described three subversive – defense tactics that they called tools:

(a) *Technical solutions* (deleting cookies) as a reaction to the extreme feeling of threat;

(b) *Behavioral prophylaxis* as calm vigilance in the form of avoiding particular personalization services; and

(c) *Defense adaptation* in the form of *an ostentatiously emphasized sense of security*, which is the product of a compromise *tactic of the weak* changing resignation to a higher level of control for providing a personalized service for free. Respondents most often described this tactic through the following comments: *it is necessary to learn to live with it, it is a part of life, and there is nothing one can do with it anyway*.

Especially common users applied the suggested defense tactics that are based on an a priori assumption of dishonest intentions of algorithm operators. No expert named or described any of these tactics.

Some common users thus de facto acknowledged that they were not altogether powerless against the personalization algorithm and were trying to adaptively "defend" themselves. However, the indicated tactics of aggression/escape suggest that common users would not win any guerrilla war with such defensive instruments against the operators of the algorithmic personalization. It is because most respondents were unwilling to develop tactics that would allow them to avoid being closed into a value bubble by an algorithm. This is undoubtedly one of the risk factors that will strengthen the value polarization of society in the coming years.

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Annex:

Scheme No. 1 – System of main categories' set that represent users' communicative actions concerning news personalized by an algorithm (based on the analysis of the three discussion groups - common and expert users)

The following scheme describes the main findings of this explorative study that aimed to describe possibilities and starting points for broader quantitative research. The scheme captures the relationships of partial rhetorical speeches that create interpretative categories for the two main dimensions of user behavior and experience of news personalization.

Experience → Technoskepticism

Experience → Technooptimism

Experience → Distrust

Loss of control over personal data → Distrust

Non-transparency → Distrust → Increased transparency of operators

Content manipulation → Distrust

Personal data abuse → Distrust

Personalized content's consumption → Passive → Resigned acceptance of status quo → Communicate conditions more comprehensibly

Feeling, intuition, experience

Personalized content's consumption → Active → Avoiding personalization → Do not consume personalized content

Technical solutions, deleting cookies → Be more open to participative control

Correct algorithm

Understanding personalization → Technical rules → Technical solutions, deleting cookies

Relevant information

Saves time

Regular notifications of profile settings

Understanding personalization → Legal rules → Defending individual freedoms

React to ongoing changes in preferences

COLOR LEGEND

	THREATS
EMOTIONS	BENEFITS
USERS' PATTERNS	DEFENSE: TACTICS OF THE WEAK
COGNITION	RECOMMENDATIONS