Understanding power positions in a new digital landscape: perceptions of Syrian refugees and data experts on relocation algorithm

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ABSTRACT
This study explores the differences and similarities between the perceptions of data experts and refugees as data subjects, in the context of a refugee relocation algorithm. The study conducted in-depth interviews with data experts and Syrian refugees in Estonia and Turkey. The results indicate that both refugees and data experts acknowledge the algorithms’ potential power for structuring the everyday life experiences of people. Whereas refugees mainly focused on cultural and social concerns, the data experts underlined the importance of refugees’ agency and the potential drawbacks of algorithms in terms of transparency and accountability. While both groups of interviewees thought the relocation algorithm could be useful especially in economic terms, the study demonstrates that algorithms create complex power relations and place extra pressure on both refugees and data experts. The new digital landscapes produced by algorithms entail a ‘triple agency’ – an agency of experts developing and using these datafied solutions, an agency of data subjects being targets of those calculations, and an agency of algorithms. For solving the issue of ‘false authority’, where the modelling of spatial choice cannot grasp the socio-cultural reality, it is necessary to consider the socio-cultural context of the calculative devices. A paradigm shift in machine learning is necessary from learning machines as autonomous subjects to machines learning from social contexts and individuals’ experiences. Rather than experimenting with algorithmic solutions to speed up decisions about human lives, migration policies and relevant datafied solutions should consider the diversity of human experiences expressed in individuals’ everyday life.

Introduction

Complex societal processes like forced migration require rapidity in decision-making and finding governance solutions. Several datafied solutions are used for governing forced
migration in Europe. The Syrian refugee crisis is the biggest since World War II.\(^1\) There is little evidence of the decision-makers and the refugees operating as data agents in either the datafied decision-making process or the new digital landscapes these datafied solutions are constructing.

Research agrees (Ziewitz, 2016) that datafied solutions like migration governance algorithms are not only operating as computational artefacts, but also as devices, which could help to rethink the premises about agency, transparency, and normativity in new digital algorithmic landscapes. Therefore, the datafied technologies are not only changing the everyday worlds, but the spaces and our relationships to those spaces where we live (e.g. Del Casino, 2016). The challenge in the implementation of algorithmic solutions is that they are always developed, implemented and processed in contested human spaces (Crawford, 2016), where counter perspectives of the involved parties may coexist. Research has theoretically turned attention to these highly contested situations that the various counterparts are facing (Pellegrini & Fotheringham, 2002), but as far as we know, the perspectives of related parties of these disputable data solutions in the case of forced migration have not been studied.

Research on the contested socio-spatial relations in data solutions has focused on a broad array of data infrastructures, like the repositioning of boundaries through smart borders (Del Casino, 2016) or reconceptualising the borders in the context of algorithmic control solutions (Calzada, 2018). We assume, based on research (Rahwan et al., 2019), that algorithmic data solutions may contribute in the (re)construction of socio-spatial perspectives. However, due to the lack of research in this field, there is missing knowledge on how exactly algorithmic data solutions are shaping the socio-spatial perspectives of the individuals and therefore (re)constructing the new digital landscapes. For understanding the potential socio-spatial consequences of the algorithmic solutions, the perceptions of the individuals linked to the datafied processes are essential to understand.

Some studies have suggested turning the focus onto data subjects from the global South (Milan & Treré, 2019), because they are often left out of datafied decision-making, for explaining the contested perspectives of spatial data solutions. Other studies, by contrast, have suggested moving beyond analysis that solely examines the conditions of relative disadvantage (Hoffmann, 2019), to examine the production of hierarchically-ordered conditions related to datafied solutions, to dismantle the problems and contested spaces, which algorithmic solutions are producing. This study strives to contribute to these discussions, through examining the positions of refugees and data experts on the refugee relocation algorithm (henceforth RRA) as one of the datafied decision-making solutions used in the field of migration for examining the contested spaces and new digital landscapes of the algorithms.

Our empirical focus is the RRA (Bansak et al., 2018), which is used for assuring the economic integration of refugees. Using the RRA, we aim to map the role that data and algorithms play in mediating and normalising the discourse and social conditions, and constructing the socio-spatial lifeworlds against which decisions about relocations can be made. We explain the positions of data agents being potentially in interaction with these solutions, both those agents that are targets of datafied decisions as well as those participating in developing and using similar algorithms. We assume that through spatial data solutions, like the RRA, the suggestion to physically move to certain locations that new spaces carrying certain economic, political and cultural meanings are (re)produced.
Examining the refugees’ and data experts’ understandings regarding the RRA helps us to explain digital landscapes produced through algorithmic solutions, as seen by the experts as external agents of these constructions, and understood by refugees who are internalising and expressing their positions regarding these solutions. In particularly, this study will seek to answer the following research questions: (1) How is the RRA perceived, considering the disparate positions of the parties, the data experts and refugees? (2) Which concerns are expressed by the parties, taking into consideration the contexts of home and host society? (3) How are the spaces of the resistance and acceptance expressed in the contested field of the RRA?

**Literature review**

**Digital landscapes of algorithms**

Our theoretical starting point is the research assumption (Manovich, 2013), that data, software and algorithmic solutions are technologies that create, access and interact with cultural artefacts. Algorithmic solutions are intertwined with everyday lives and are therefore key for construction of reality (Just & Latzer, 2017). Although some studies have interpreted algorithms as constructing technical and material presence (Beer, 2017), other studies have demonstrated (Amoore & Piotukh, 2015) these calculative devices matter beyond their specific functions as they progressively shape, transform and govern all areas of life. Therefore several notions like calculated publics (Crawford, 2016), calculative practices, or domains of knowledge and expertise (Introna, 2016), have been used for characterising this new forms of constructed reality.

However, authors do not agree about the underlying mechanisms of the reality construction through algorithms, taking into consideration its complex fields of functioning and the diversity of the related parties. Some studies have understood algorithms as a form of digitally mediated activity, and therefore explained the algorithms as a form of continuation of the processes that were initially inherent to traditional media and later to social media (Introna, 2016; Kinsley, 2014). This position of seeing algorithms as a continuation of media logic follows the early critical thinking about technology (Habermas, 1968) and is considered as both misleading and ideological (Klinger & Svensson, 2018). Therefore other authors claim (Klinger & Svensson, 2018) algorithms are an outcome rather than a replacement of networked media logics. Unlike media logic, reality construction through algorithms tends to increase individualisation, commercialisation, inequalities, and deterritorialisation and to decrease transparency, controllability, and predictability (Just & Latzer, 2017). Consequently, since these datafied constructions are not neutral, the data have a double role (Bruno et al., 2014), so that it not only represents but also potentially resists and criticises this reality.

One of the contested fields where the datafied solutions are implemented and the debated meanings and reality construction are visible, is the case of migration. The algorithmic construction of migrant lives is a reality formation on the move, where the understandings of both host and home society, as well as the spaces of movements that have been key for mobility experiences, are intertwined. Early studies on algorithms emphasised the mutual production of space and software (Kitchin & Dodge, 2011) and were confirmed in later research (Del Casino, 2016; Kinsley, 2014; Leszczynski, 2016). Based on these
studies, social context and everyday space have been the main fields where the ambivalent consequences of algorithms are visible, other than previously studied bodily visible influences of self-tracking devices (Kristensen & Ruckenstein, 2018). Therefore, the socio-spatial governance through algorithms is called ‘algorhythmic governance’ (Coletta & Kitchin, 2017), indicating that algorithmic technologies intervene in space-time processes and shape the everyday rhythms.

Recent studies about the modelling of spatial choice focused on the increased complexity of these modelling tasks, which makes them more difficult to conduct. Several issues have been highlighted in relation to spatial data solutions, like creating universality through homogenisation of concepts and geospatial standards applied to data (Reid & Sieber, 2019), which lead to the assimilation of minorities. Similar to historical geo-spatial instruments (Kidd, 2019), like highlighting potential sites of minerals, algorithms as calculative devices have been used for expressing control across territories and over minority populations. Early studies in this field focused on the manifestations of the control over spaces through socio-spatial sorting (Graham, 2005), where people are evaluated via algorithms that calculate and enforce differential access with respect to perceived worth. Although the digital technologies have the potential to involve remote, non-present and unanticipated actors (Gray, 2019), the studies have cautioned the possible (re)production of spatial inequalities inscribed to these calculative systems.

Several explanations to these spatial inequalities have been proposed, like uneven spatial data (Leszczynski, 2016), localised biases of designers (Hoffmann, 2019), or the embeddedness of inequalities in urban environments (Graham, 2005). Research has indicated (Crampton, 2011), that the intertwined fields of calculation and territory range across a broad set of problems, such as colonial, political and racial. Although algorithmic exploitation may introduce new arenas of everyday life (Reid-Musson, 2018), the relationships between newer and older (re)configurations of spatial rhythm, power and everyday life have not yet been studied. Neither the ways how the spatial datafied tools are producing the shared views of reality have been studied previously. This study examines perceptions about the digital landscapes (re)produced through the RRA, as one of the solutions used for remodelling spatial choice.

Refugee relocation through algorithmic assignment

Modelling of spatial choice is a topic that has a relatively long tradition (Pellegrini & Fotheringham, 2002). The increased availability of data and the growth of migration have raised interest in these approaches. One of the recently used datafied techniques for governing forced migration are RRAs.

The main idea of the RRA as implemented in the USA and Switzerland (Bansak et al., 2018) is that refugees are assigned across resettlement locations to improve employment as an economic integration outcome. Supervised machine learning and optimal matching are combined, so that the algorithm compares the refugee characteristics and resettlement sites, to find synergies between them. The main motivation behind this solution was to increase the efficiency and speed of decision-making. Also, empirical studies have emphasised that the period that refugees have to wait for a decision concerning asylum claims (Hainmueller et al., 2016) and for accessing the labor market (Marbach et al., 2018) impacts refugee employment rates.
The exclusively economic focus, assuring employment among refugees as a vulnerable population and for reducing public expenditures, has been one of the main criticisms of this solution. Since the economy at any specific time point is history-dependent, the solution has been considered as being static rather than dynamic (Andersson et al., 2018). Since this algorithm strives to minimise prediction errors rather than uncover structural parameters determining labour market success (Andersson et al., 2018), the used machine learning algorithm does not take the families of asylum seekers into account as an essential structural prerequisite for integration. Therefore, data practices like RRA are understood as both an enlarging as well as a restricting sense (Desrosières, 1998), primarily because the neoliberal logic of the state is used for mobilising the data tools for assuring the efficiency of its services.

A second criticism has focused on the fairness of the datafied solutions implemented for the refugees as a vulnerable group. The sequential matching algorithm, where asylum seekers are assigned according to their arrival order to a certain list of rotating localities, may lead to inefficient and unfair allocations (Andersson et al., 2018), because the preferences of the refugees as data subjects as well as of the localities may be misrepresented. Similarly, studies have indicated that these fast data solutions are highly selective (Miller, 2018), so that instead of considering the potentially available diversity in data, governance through algorithms practice social sorting and categorisation. The moderate readiness in public space regarding implementation of RRAs and accepting immigration, could also potentially shape these selectivity principles. For example, threatening media frames (Ferwerda et al., 2017) may reduce public support on resettlement, although proximity to settled refugees may increase the effect of perceived security threats. Lesser support regarding resettlement within their own communities as opposed to elsewhere in the country (Ferwerda et al., 2017) could frame the selectivity principle of the datafied relocation.

Several strategies have been proposed, as solutions to these criticism, like counter-mapping by indigenous nations, for redistributing, transforming and restoring data justice (Kidd, 2019), or the co-creation of data solutions within peer-to-peer contexts (Zebracki & Luger, 2018). These approaches concur (Milan & Treré, 2019) that we need to bring the agency to the core of our analysis, as a solution to the social control, categorisation and selection prevailing in datafied solutions. The imaginaries from the South are proposed as a necessary framework (Arora, 2016), for grasping the diversity of perspectives and practices regarding datafication, emerging outside from the mainstream Northern viewpoint.

Other studies warn the data justice approach is too firmly rooted in the liberal anti-discrimination discourse (Hoffmann, 2019) and fails to dismantle the logic of advantage and disadvantage. The proposed counter-discourses like data-colonialism (Thatcher et al., 2016) are not considered as effective, since they fail to address the hierarchical logic that produces advantaged and disadvantaged subjects (Hoffmann, 2019). While overemphasising disadvantage, these approaches may obscure the production of systematic advantage (Hoffmann, 2019), because they have a one-dimensional focus. Including the perspectives of the ‘global South’ as a solution to data inequalities have been criticised due to the internal diversity of data subjects (Milan & Treré, 2019; Segura & Waisbord, 2019), even among digitally empowered high-skilled migrants (Patra, 2019; Tamppuu & Masso, 2019).
In summary, the RRA is considered to be flexible, as indicated by its developers (Bansak et al., 2018) to enable additional characteristics to be taken into consideration through using data from various social contexts. However, since there is a lack of information about the preferences of refugees as well as the positions of the data experts as participants in this algorithmic decision-making process, we cannot know the digital landscapes these solutions are constructing. Thus, it is not the RRA, but the authorities that utilise it, which make the relevant decisions, and the related actors who can consider the associated benefits and risks. To avoid further risks, it is necessary to examine the preferences of those who are directly involved in these algorithmic solutions, both the refugees and data experts.

In-depth interview method

**Sample strategy of refugees and data experts**

This study uses the semi-structured, face-to-face interview method. Refugees and data experts were interviewed and their expressed opinions were compared. Purposeful sampling (Suri, 2011) was combined with the snow-ball method to recruit the Syrian refugees and data experts.

As a homogeneous characteristic, Syrian refugees between the ages of 18–45 years old ($n = 19$) who had either or both left their country and were unable to return due to the war in Syria were included in the sample. We did not expect refugees to have any previous involvement with the RRA but personal experience with relocation. Syrian refugees residing in Estonia ($n = 7$) and Istanbul, Turkey ($n = 12$) were interviewed. These country cases were purposefully chosen to provide distinct contexts and experiences with relocation. Turkey and Syria share a physical border with historical, religious and kinship ties. Turkey for a long time had an open-door policy with limited control over refugees coming from Syria over the land borders and as a result hosts over 3.2 million Syrian refugees (UNHCR, 2017). Estonia, on the other hand, has limited connections with Syria both physically and culturally. Estonia only accepted refugees with a quota scheme—an allocation system used within the EU to distribute the refugees across Europe. This enabled the Estonian government to control the numbers and characteristics of accepted refugees. Although, the agreed quota for 2017 was 286, the number of refugees never reached the quota as many left for other countries (Vahtla, 2018). While Syrian refugees in Estonia have the ability to move to other countries due to Estonia’s EU membership, movement of Syrian refugees from Turkey to European countries is limited which constitutes another important difference for refugees. The refugee sample involved 10 women and 9 men who’s levels of education varied, and while including post-graduate studies, mainly consisted of interrupted middle and high-school education. The interviewees were recruited at various events and gatherings.

The sample of the data experts (DX) consisted of those having contact with migration data in their everyday work ($n = 24$), and therefore have expertise regarding migrants and algorithmic solutions. All the DX were from Estonia where the algorithmic solutions are being increasingly developed. For assuring the variance of the opinions, we chose data experts working with three categories of data: historical migrants; mobilities of transnational migrants; and new migrant arrivals. All the experts expressed clear
understandings of governance of forced migration. The sample involved representatives equally from public institutions, private institutions and non-profit research centres and working in a variety of positions like data and system analysts, code developers, managers and policy advisors. The experts had higher education in disciplines, in which knowledge of data management is a core skill. Both male and female interviewees were equally included.

The interviews were conducted between February and August of 2018.

**Interview guide**

The interview guide comprised a combination of previously planned open-ended questions, additional spontaneous questions and projective techniques. The initially asked open-ended questions enabled interviewees to talk spontaneously about their experiences about either their mobility or the work as a data expert. Then came more concrete open-ended questions about awareness, experiences and opinions about governance through algorithms. Each interview lasted 1.5–2 h.

This study is based on the reflections regarding RRA. To encourage the interviewees to talk about this algorithm we used a projective technique (Soley & Smith, 2008). A photograph of a refugee relocation site and an explanation of the algorithm were presented to the interviewees. The information provided for the interviewees was ‘An algorithm matches people with settlement places where they have more employment chances and integration opportunities. An analysis of refugees’ skills and information and the potential area for settlement helps the countries to settle refugees in their new communities’.

The interviews were conducted in English and Turkish with Syrian refugees and in Estonian with the data experts.

**Manual and computer-assisted qualitative data analysis**

The oral face-to-face interviews were audio recorded and transcribed word-by-word. Any sensitive information was removed from the transcriptions for assuring the confidentiality and anonymity of the interviewees.

Thematic analysis was applied combining manual and computer-aided techniques using the Maxqda software (Woolf & Silver, 2017). In line with the suggestions of Braun and Clarke (2006), a step-by-step approach to thematic analysis was followed. First, the transcribed interviews were read closely at least three times, and each meaningful data unit was coded on Maxqda. The flexible principles of coding were used and the codes were changed when needed. Second, the codes were merged to form themes reflected certain repetitions within the text. Those themes were revised to capture the meaning better and understand their relations with each other and within the whole text. Then, the themes were defined and named, based on the manifest as well as latent meanings, which emerged in the texts. As the final step, the text sections coded under particular themes were compared and the differences and similarities within and between particular themes were explained. Pseudonyms and short extracts of the interviewees are used, from which all demographic details have been removed to ensure the anonymity and confidentiality of the interviewees.
Results

Algorithms as an exciting development: contexts and potentials

There was support for the relocation algorithm among both refugees and experts. There were also differences in their approaches. The data experts found the algorithms as an exciting development, an opportunity for progressive and innovative governance that are promising for the future in terms of making the life of decision-makers easier and improving economic outcomes. The refugees focused on the practical positive outcomes of the RRA both for themselves and their host countries, especially from the employment perspective.

As the main premise of the RRA is to match migrants with regions that need a relevant labor force, the interviewees’ responses mainly focused on economic considerations. Both the data experts and the refugees discussed how such an algorithm could help people find jobs while supporting local businesses in terms of the labor force. For example, some data experts believe, RRAs that consider refugees’ skills in line with the regional labour force needs would be beneficial for both refugees and employers. The data experts believed the RRAs would enable refugees who struggle to find work to be matched with employers who have hard-time finding people with certain skills. As Eve (DX), an analyst from a non-profit organisation, stated:

For instance, if you can see that there’s an employer who’s willing to employ such a person. Then you can bring these two together.

This statement underlies the importance of the data and how the RRA would be useful in the relocation of refugees and assuring the employment. In this meaning the experts perceive themselves as an important mediator between refugees and employers, as opposed to just having a passive role in these relations. Nevertheless, a passive role was expressed by some experts focusing their arguments on economic benefits as an aim of the relocation algorithm, as indicated by Mark (DX) who worked in the private sector:

Matching – a guided process that we unfortunately lack in Estonia … like how to influence people telling on other people on the basis of data. / … / so it could solve such problems, have an effect on the economy. / … /

Similar to the experts, some of the refugees support the RRAs on the basis of economic considerations. Refugees both in Turkey and Estonia stated it was rather difficult to find a job in their new countries. For example, Mithat (RefE) struggles to find a job. He believes the RRA can ease his search for employment as it would give him access to information sources to start looking for a job and the necessary social network for job seeking. Mithat (RefE) said:

It is really difficult (to find a job) because I do not know many people or I do not know how to start or where to ask if I want to work in certain places. If an algorithm gives me this link directly, it would be a great idea.

Cengiz (RefT) also said that an RRA could help the states and the refugees by facilitating an even distribution of refugees across the country. However, he believes Turkey is late in implementing such an approach because there are already too many Syrians living in
segregated neighbourhoods in Turkey’s largest city, Istanbul, which is helping neither the refugees nor their host communities:

If this planning took place beforehand, everyone would know where they should live. For example, maybe the low-income people could stay at the borders and the state could take care of them.

The size of the refugee population was an essential argument as it sets the context for refugees in relation to the host country. The data experts stated that the RRA would not work in Estonia, where dissimilar to Turkey, the number of refugees is small. Mary (DX) an analyst from a public sector institution indicated:

Again, I think everything depends on those volumes and numbers. If we talk about thousands or tens of thousands, then …

Therefore the specific country context and individual experiences explain how the RRA is perceived. Refugees with limited access to information sources tend to perceive algorithms in a positive light, such as enabling access to resources or distributing refugees across the country more evenly. Data experts focus on the economic benefits of the RRA, however they also stress the difficulty in implementing the algorithm in the instance of a small number of refugees in a particular country. Therefore the everyday life context constructs both the expected outcomes and the digital landscapes of the RRA.

**Cultural and professional concerns: having a good life and doing a good job**

The interviewees discussed also several concerns regarding the use of RRA. There were important differences in the approaches of the Syrian refugees and the data experts. While the refugees focused on cultural concerns that would be difficult to consider for algorithms, the experts discussed ethical matters.

Yasir (RefE) emphasised factors other than the job skills that are important in relocating people. He mentioned cultural features, like religious dietary restrictions, places of worship and social features like personal networks, which the economically-driven RRA may not take into consideration. He said:

For example, I am here, I am Syrian and I am struggling to find even halal meat or halal chicken (in Estonia) … There is something more to study before sending people somewhere. For example, in (the capital city) Tallinn there is a mosque, it is really a good place to be there.

Similarly Nur (RefT) believes the information about people’s views on religion should be considered in relocation decisions. Therefore, the social and cultural contexts are necessary to take into consideration when developing RRAs, as Nur stated:

For example, if someone has these very aggressive religious ideas, then you cannot put him in Sweden or vice versa; when someone has no religion at all, you tell him to go to Saudi Arabia.

Based on these statements, both Yasir and Nur are aware of the potential RRAs have in reconstructing their life experiences. If the algorithms consider skills as the sole criteria in relocation, Yasir (RefE) may be relocated to a region where it would be rather difficult for him to practice his religion. Nur (RefT), on the other hand, does not have any struggles with her religion as majority of the Turkish population is, like her, Muslim.
Instead of practical concerns such as food or place of worship, she discusses life style as a whole.

During the interviews, the refugees generally did not point to authorities behind the algorithms and instead used passive sentences or non-specific pronouns (such as they) in explaining how the algorithms would affect their lives. Emre (RefT) was one of the few refugees who actually considered algorithms as a potential extension of government policies. Based on what he said, the algorithms could be used against cultural diversity:

This kind of thing can be a bit racist algorithm. Because it may take into consideration variables of ethnicity, religion, colour and according to that … like a lot of European countries would prefer a Christian refugee over a Muslim refugee.

While Emre’s example demonstrates distrust towards the states and their ability to be fair, most of the refugees did not raise an issue about data privacy or accountability. As Sham (RefE) stated:

Any country that you will enter and you are a stranger, they need to collect information about you, sure. This is their right.

This tendency can be linked to refugees’ overall trust in the institutions of their host countries and previous experiences that encourage refugees to prioritise their physical security before anything.

These concerns regarding social and cultural aspects, as well as physical security were not mentioned by experts. Rachel (DX) emphasised that homogeneous social contacts and spatial segregation in cities were possible socio-cultural consequences of RRAs. However, dissimilar to the cultural aspect emphasised by refugees, the experts focused on technical issues leading to the homogenisation. Mistakes made by humans were mentioned by Rachel (DX), a systems analyst in a public institution, as a potential issue:

On the one hand, we get to learn an awful lot of things. A lot of things that, so to say, can help us predict certain things. At the same time, it gives you a lot of opportunities to grill people or make mistakes. So you can make a right mess of it and cause a lot of damage.

Similarly, Jim (DX) working in a non-profit organisation underlined the importance of accountability and transparency of algorithmic decisions. But he also emphasised that to ensure sound algorithmic decisions, people and not the algorithms should be responsible for these decisions:

It’s the transparency of these algorithms what is important in the case of the example involving refugees. / … / In the case of decisions that concern people or influence their life to a significant extent, then ideally, it would be great, that it is person (not a machine) who is responsible for making these decisions.

Also working in a non-profit organisation, John (DX) argued that algorithmic decisions could be overly interpreted, especially when they concern disadvantaged groups’ problems causing further criticism of algorithms. This opinion can be interpreted as awareness regarding the potential distrust towards state institutions or relevant authorities that use algorithmic solutions. John (DX) said:
This migration has understandably been strongly taken over in terms of values. Then these sorts of wrong decisions can indeed be over interpreted … If a mistake like this is made in the case of migration or if an algorithm makes a wrong decision, then it’s immediately interpreted as a violation of human rights. / … / And this is why people are less forgiving towards algorithms.

In sum, the data experts, focus on universal aspects related to algorithms, such as accountability, transparency, potential to harm refugees and violations of human rights. At the same time, despite developing and using the algorithms, the data experts are not in complete control of either the data or the algorithmic decisions which makes the situation problematic for the experts as well. Therefore, while the refugees are direct subjects of the algorithmic decisions, data experts are subject to potential outcomes of misleading or incorrect decisions. Since perceiving their role as the mediator between state and algorithms, the data experts fear that a wrong decision may result in distrust in state institutions or relevant authorities. This in turn strengthens the experts’ will to have more agency in algorithmic decision-making processes instead of relying heavily on algorithms.

**Resisting the relocation algorithms: where do refugees want to live?**

Both refugees and data experts share a common perspective that relocation decisions must be in line with the priorities of refugees. Rather than assigning people to locations based on certain criteria prescribed by host states, both groups argued that refugees should be listened to, and their experiences and needs should be considered.

Steven (DX) who works as an analyst in a non-profit organisation discussed the importance of what refugees want. His perspective could be explained by his work activities, like proposing new measurements and statistical indicators. He raised an important question regarding the authority behind the decisions on indicators used in algorithms – who decides to maximise certain indicators and for whom do these indicators actually work? This question turns the attention to the danger of having blind belief in the data, as Steven (DX) stated:

> Well, I believe that risks may occur when we optimise one indicator … what effect does it have on other indicators? That is to say, do people agree to us optimising their employment or do they have some sort of a community that would suit them better? / … / Whether these refugees themselves want to live in a large community, like in a big city, right?

These questions raised by Steven (DX) were also mentioned by some of the refugees. They shared opinions and stories that show what host states either want or propose may not be desired by certain refugees even if the solution may in general look good for them. For example, according to Yamaç (RefT), a relocation opportunity to Canada that was initially proposed to him, is highly desired by many refugees, yet his family rejected the proposal because they felt at home in Turkey. Yamaç said:

> They called us from the UN and said “we will take you to Canada.” My mom did not accept. There is no need to go. We said “now this is our home.” Other people say “we have been waiting for this call for years, you received the call but you are not going.”

This example demonstrates that emotional aspects such as the feeling of home may be challenging for algorithms to accept. Moreover, it indicates the agency of refugees, who
may demonstrate various forms of resistance against relocation decisions without providing information on who makes these decisions.

In a similar way, Bertha (DX) who makes policy proposals within her work in a public institution supports the idea that refugees should be located to areas where they actually want to go. She discussed the situation that Syrian refugees were initially relocated to Estonia as a part of a quota scheme, however many of them left for Germany where they initially desired to go. Bertha said:

The people who arrived in 2015 were determined to go to Germany. The whole redistribution process was certainly not pleasant for them and many still ended up there, so they did go where they initially wanted.

As Bertha (DX) points out, this is a form of resistance by refugees against relocation decisions irrespective of the methods used to make the decisions. Similar forms of resistance were mentioned by the refugees. Sham (RefE) thought relocation algorithms could not work for refugees who have already settled down in a host society. In these situations, she would like to make her own choice. Sham stated:

After I am living here for a while, a long while, sure I will not accept one saying me “OK, you need to move because we saw that other place is better for you.” OK, you can see, but maybe I can’t see that. Maybe it isn’t suitable for me. You need to take my opinion.

Both refugees and experts, underline the considerations of refugees and argue that rather than relocating refugees to assigned places, learning where refugees actually want to go can facilitate the integration. The power relations involved in RRAs constitute complex relations that may include refugees and decision-makers and creators of algorithms. The potential effect of algorithms on power dynamics seems to blur the aspect of authority, especially from the perspectives of refugees.

Conclusions

We examined the perceptions of the refugee relocation algorithm (RRA) as one of the datafied decision-making solutions in the field of migration and aimed to explain the perspectives on the new digital landscapes of the algorithms implemented for governing migration.

We examined the positions of data experts and refugees, both of whom have roles as data agents in the datafied decision-making. While the new digital landscape shaped by calculative tools like the RRA have the potential to structure the everyday lives of refugees, as data subjects, how this landscape is perceived and accepted or rejected is determined by the everyday experiences of these data subjects. This study indicated important differences in the ways refugees and data experts perceive the RRA. Generally, an algorithm promising distribution of refugees across the country or facilitating job and integration opportunities was perceived positively by the refugees. However, the refugees reflected on the potential outcomes of automated decisions that may conflict with their cultural norms and social values.

The host country context of the refugees explains the perceptions of RRA. The Syrian refugees in Estonia mentioned cultural and religious concerns, since residing apart from Arabic speakers, while the refugees in Turkey expressed concerns of being potentially segregated into Syrian neighbourhoods, as a potential result of the RRA. While refugees stated
the algorithms potentially may reflect the selective migration policy principles of the country, the trust to the institutions of host countries regarding the algorithmic solutions was generally expressed.

The experts, on the other hand, approached the algorithms from a more technical point of view and discussed concepts such as transparency, accountability and potential harm to the refugees. The experts wanted to perform their job in a way that benefits both society and the incoming refugees. As a result, although the experts emphasised the economic outcomes of the spatial choice modelling, they were cautious about making the wrong decisions and being responsible for refugees, as this would diminish trust in various institutions. This indicates that the data experts are not in a position of hegemonic power when it comes to algorithms because they are also indirect subjects to outcomes of the algorithms.

The study indicated that while the experts working in the private sectors tend to prioritise economic outcomes of the RRAs, the experts from public institutions focused on whether algorithms are effective or applicable as a state policy instrument. The data experts from non-profit organisations underlined issues such as transparency and accountability and prioritised the importance of refugees’ agency in relocation process and principles practiced by a particular state.

Therefore the new digital landscapes produced by the modelling of spatial choice comprise a ‘triple agency’: (1) agency of experts developing datafied solutions, (2) agency of data subjects being targets of those calculations, and (3) agency of algorithms. Only when introducing to the analysis the triple principle of the agency, are we able to find solutions to the selectivity principle prevailing in datafied solutions. Refugees as data subjects expressed both acceptance and resistance, as well as blurring the fields of authority and accountability in the datafied decision-making process. Agency of the experts is internally contested, similar to refugees as data subject, because being under the pressure of uncertainty of relying on the imperfect calculative devices, as opposed to having the desire to provide socially fair and just solutions. The algorithms itself as agency in datafied decision-making in the field of forced migration are falsely expected to be trusted and assumed to have the power to grasp the socio-cultural complexity of the home and host societies as well as the reality constructed about the movement of forced migrants. What might seem like the agency of algorithm is an extension of state power and its migration policy inscribed into algorithms. Exclusively focusing on the agency of the algorithms, blurs the responsibility and confuses the understanding of algorithms as being mistakenly fair and objective without human prejudices.

To solve this issue of ‘false authority’, where the modelling of spatial choice cannot grasp the socio-cultural reality these solutions are targeted to, the socio-cultural context of the calculative device is necessary to take into consideration. Although the necessity of social context is emphasised in studies (Rahwan et al., 2019), the development of the machines take into consideration both the universal values of human rights as well as social realities of the individuals on the move, including the social contexts of both home and host societies, is a challenge for further studies. Moreover, the outcomes of algorithms may be in conflict with both refugees and data experts indicating that algorithms exercise power and structure the new digital landscapes where decisions are increasingly becoming automated.

Without acknowledging the triple algorithmic agency, algorithmic decisions are not fully under control and the production of space through algorithmic decisions may result
in inequalities (Kitchin & Dodge, 2011). The new spatial ‘algorhythms’ (Coletta & Kitchin, 2017) suggest that these digital solutions prioritise speed of time over context of space. They may, as a result, lead to unintended spatial consequences such as the segregation of refugees either by limiting the space for refugees to a particular area/neighbourhood or spatially separating them from their native community.

This analysis confirms the previous studies, suggesting that the algorithms are not just as a digitally mediated activity and a continuation of the processes initially inherent to media logic (Kinsley, 2014; Klinger & Svensson, 2018), but also reconstructing new digital landscapes. These new digital landscapes constitute spaces of opportunities, where the neoliberal faster solutions to economic employment are proposed. However, these new digital landscapes comprise spaces of inequalities, where economic benefits, as emphasised by data experts, and the socio-cultural characteristics evaluated by refugees, as both necessary and emotionally, do not meet each other without tensions in these calculative devices. Therefore, spatial modelling solutions like refugee relocation algorithms cannot take into consideration the spatiality essential for the data subjects, without introducing a paradigm shift in machine learning involving the change from learning machines as autonomous sub-
jects to machines learning from social contexts and individuals' experiences.

Algorithmic decision-making challenges states to change from laboratories experimenting with the algorithmic solutions (Broeders & Dijstelbloem, 2016), to inequal forms of ‘states of exception’ or even non-transparent ‘secret states’ (Mcquillan, 2015), and states considering the human diversity expressed in the individuals’ everyday lives (Taylor & Meissner, 2019). Further studies should focus on explaining the mechanisms of (de)considering the diversity in, through and by data and as seen by various data agents.

**Note**

1. Following the civil war in 2011, the Syrian people suffered from multiple armed groups, violence and a collapsed infrastructure. As a result, over 6 million Syrians had to leave their homes and seek asylum in neighbouring countries and beyond (World Vision, 2019). While Turkey, Lebanon and Jordan host a great share of the Syrian refugees, European countries have been pressured to manage the refugees and datafied solutions are on the agenda of many countries.

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