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BENCE SÁGVÁRI *

The Computational Turn in Social Sciences. Challenges of the New Empiricism in the Age of Big Data

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Today large amounts of data are available to use for research on human behaviour: social media, data from online social networks, vast amounts of digital text, sensory information from personal hand-held and other devices, information from search engine usage and other online services, etc. The industry that relies on collecting, combining, selling and analysing digital footprints for all kinds of purposes ranging from simple targeted advertising to risk assessments and mass surveillance is developing with lightning speed (Van Es and Schäfer, 2017). However, such data could increasingly be used to address larger societal issues of social interactions and relations, inequality, education, healthcare, political participation, and more. The advances in the use of such data in social sciences offer the possibility to answer questions that were beyond research in the past, and this new generation of large-scale, complex, and usually unstructured data requires new forms of data analysis and scientific applications. Some also suggest that as a consequence of the data revolution that we are already living in, a major paradigm shift in science is expected with far-reaching consequences to how research is conducted and knowledge is produced (Mayer-Schönberger and Cukier, 2013; Meyer and Schroeder, 2015). While the course of development in the data-driven industries and research seems to be unambiguous for the future in terms of its expected impact on business and how societies function in general, today the possibilities are still frequently overestimated by some 'positivistic prophets' – coming mostly from outside academia. In addition to presenting the main arguments of the papers in this section, the purpose of this editorial is to highlight a few of those issues and challenges that may shape the future of social sciences and of those who pursue in it, in relation to the new data landscape. After briefly elaborating on the definitions of Big Data, the focus will move to the question of epistemology; the changing dynamics among various fields of sciences; the new divides in access to data; and the main ideas behind the critical approach that social sciences might follow to find their right place in the puzzle.

1. The promise and the reality of Big Data

The complex phenomenon described above is usually referred to as Big Data, however it might be misleading because of an inevitable limitation of the concept to a more mechanic and data-centred approach. Some authors argue that the phenomenon we are dealing with is rather the 'computational turn' in sciences and beyond (Van Es and Schäfer, 2017), where all aspects of life are transformed into

quantifiable data, and it is used to predict human behaviour and automate human decision-making processes. Nevertheless, this editorial sticks to the use of Big Data as its key term, not just because of its history of nearly two decades, but also because of its general acceptance in multiple fields of science and beyond. Interestingly, the wider scientific and public consciousness of Big Data dates back only to a few years of active marketing activities by the largest IT companies in advertising and selling their analytical solutions (Gandomi and Haider, 2015). The literature on interpreting Big Data from a social science perspective is expanding fast, but we still miss a uniform definition (Borgman, 2015; Csepeli, 2015; Dessewffy and Láng, 2015; Kitchin, 2014; McFarland et al., 2015; Székely, 2015). It is by far no coincidence, since the evolution of Big Data has been too quick and disordered so far, characterised by rapid technological changes. There have been some attempts to create a comprehensive definition that considers the different perspectives of business and academia, but the results turned out to be overly complex and therefore hard to use routinely. Based on more than 1500 conference papers and articles, De Mauro (2015) and his co-authors defined four core areas that were found in most Big Data perspectives and definitions: (1) the nature of information; (2) technology, as the equipment for working with Big Data; (3) processing methods that go beyond the traditional statistical techniques; and finally (4) the impact that Big Data can have on our lives. Based on these premises they proposed the following formal (and fairly circuitous) definition: '*Big Data represents the Information assets characterised by such a High Volume, Velocity and Variety to require specific Technology and Analytical Methods for its transformation into Value'* (De Mauro et al., 2015: 103). Kitchin (2014) identified the following seven general features of Big Data:

- huge in *volume* (i.e. gigabytes, terabytes or petabytes of data depending on their sources);
- high in *velocity* (created in or near real-time);
- diverse in *variety* (structured and/or unstructured in nature);
- *exhaustive* in scope (capturing entire populations or systems, as described by the popular *n=all* phrase);
- fine-grained in *resolution* and uniquely indexical in identification;
- *relational* in nature (with the ability of conjoining different data sets);
- *flexible*, extensional, and scalable.

Obviously, Big Data is not just about the data. It is the necessary first element, and it does not even have to be 'big'. Tera, or petabytes of meteorological data, gigabytes of social networking data, and only megabytes of processed data of literally anything can all qualify to be named Big Data. The question is rather how we access, collect, store, analyse, interpret and share it. If we believe the predictions on future developments, it might be accepted that currently we are still at the dawn of the new datafied world. From the perspective of social sciences it means that on the one hand, many old research questions could be approached anew from novel angles, but on the other hand, a whole new set of questions are also begging to be addressed (McFarland et al., 2015).

2. The end of theory in data-driven science?

The new empiricism that is frequently linked to Big Data rests upon the above traits, and it was first popularised by Chris Anderson, former editor-in-chief at Wired magazine (Anderson, 2008). He stated that '[...] *the data deluge makes the scientific method obsolete*', '[...] *with enough data, the numbers speak for themselves*', and '[...] *correlation supersedes causation, and science can advance even without coherent models, unified theories, or really any mechanistic explanation at all. There is no reason to cling to our old ways.*' In other words, he projected a world of research and inquiry where there is no need for a priori theory, models of hypotheses, and it also implies a contradictory approach to deductive science. Besides this primarily inductive nature of Big Data, another often cited promise is the possibility of capturing the whole of a domain by providing full resolution, and obtaining a detailed and reliable picture of those niche groups that were previously beyond the reach of surveys and other sampling based techniques. Finally, based on the de-theorised approach to enquiry and the *n=all* nature of the data it might also be argued that information derived from Big Data can be interpreted and transformed into knowledge by anyone who is capable of decoding statistic and/or data visualisation. These premises could be valid in certain domains of (mostly) business analytics, where there might be no restrictions on access to data, and algorithm-based autonomous or semi-autonomous decisions are in the focus. However, from the perspective of social sciences and empirical research that attempt to rely on Big Data as raw material, some remarks need to be made here.

One of the most important unique characteristics of Big Data from an (academic) research perspective is that much of the data used for analysis are by-products of other (usually business related) activities, or they are owned by state organisations. In most cases, it also implies that they were generated before any kind of research question or hypothesis had been formulated (e.g. data from Twitter, Facebook, Google Trends, and other online service providers that offer usually restricted, but automated access to their data through APIs (application programming interface), or as the result of unique and occasional agreements.). To put it another way, on the one hand, we might see it as a new epistemological approach that differs from the traditional deductive design, where hypothesis and insights are born not from preliminary theories, but from the available data. On the other hand, it could also be revealed that data is never born in a scientific or cognitive vacuum: it is a product of human activity that is self-evidently framed by some conceptual framework. Therefore, the condition whether we have data or not related to a social phenomenon, and the exact elements of it are all constrained by external human, organisational, and technical factors that researchers need to adapt to. From a critical perspective, sometimes it is even more interesting to examine where and why there is no data available on certain phenomena.

As far as the data-driven, inductive approach of Big Data research is concerned, from a social scientific perspective, this is probably one of the most controversial statements. Big Data can truly open up new opportunities for discovery, that also requires innovativeness in both formulating questions and finding the right tools, thus hypotheses and insights might certainly be born directly from the data. Still,

interpretation without context and domain-specific knowledge can hardly be deemed suitable. It is interesting to see how some studies that tend to neglect the theoretical and empirical research traditions of social sciences arrive at conclusions based on Big Data that overlook decades of scholarship established in these fields (Borgman, 2015), or simply prove relationships that have already been known for a long time. Thus, Big Data offers plenty of possibilities for theory-driven social scientists who cross the traditional borders of their disciplines. However, the mere theoretical knowledge of social scientists needs to be complemented by a solid understanding of how to process data to get information from them.

3. Re-defining roles between fields of sciences

Due to the advances in Big Data and social network analysis, it seems that social sciences have lost their former privilege to investigate the functioning of societies. The 'good old' historical lines of demarcation between disciplines in terms of general epistemology, research subjects and questions, dominant methods seem to be vanishing. Probably for the first time in the history of science the field of engineering, the Internet industry, the disciplines of natural and social sciences are all focusing on similar types of data and similar types of questions (McFarland et al., 2015). This process of convergence holds great potential for all players who take an active part in this exciting transformation. However, it is also evident that the former status quo between diverse fields of science is about to change. In other words, it is still unclear whether the new division of labour will be more symmetrical or asymmetrical between social sciences, and natural/computer sciences. It is far from impossible that social sciences, and particularly sociology may witness the surreptitious course of colonisation where their traditions would increasingly subvert to other fields. In the eyes of the 'outside world' social sciences are often seen as an 'easy prey' due to their confusingly high degree of fragmentation that is manifested in countless competing theories and fundamentally different methods (Balietti et al., 2015; Whitehouse et al., 2012).

A remarkable development of the past years is that such 'soft' rivalry between the fields of traditional sciences seems to be relocating to the area of the emerging field of Computational Social Sciences (CSS) (Lazer et al., 2009). By definition, CSS is much more than just 'pure' Big Data, since it comprises social network analysis, social simulation models, as well as other areas of scientific inquiry and methods. By way of illustration, the *Manifesto of computational social science* written by Rosaria Conte and her mostly non-social scientist co-authors in 2012 clearly demonstrates notable transformation of the dominant approaches.

> '[...] sociology in particular and the social sciences in general would undergo a dramatic paradigm shift, arising from the incorporation of the scientific method of physical sciences. Thus, the combination of the computational approach with a sensible use of experiment will bring the social sciences closer to establishing a well-grounded link between theory and empirical facts and research. Such links should inform all sciences in which human behaviour is the main object of research or interest, and should solve incompatibilities such

> as economics relying on the rational actor picture and sociology and social psychology outright rejecting it; on the other hand, the latter rely much more on facts (identified from experiments, surveys, etc.) than traditional economics, based on the strength of purely abstract analytical approaches. Computational social science would be a major factor toward this paradigm change in the social sciences.' (Conte et al., 2012: 341)

Fields in social sciences and humanities are increasingly facing the demand that they justify their activities by employing computer-aided methods and sophisticated quantitative analysis (Van Es and Schäfer, 2017). For this reason, there is growing motivation among social scientist (that is at least partly based on external pressures and the 'fear of missing out') to acquire new data analytic skills and somehow immerse themselves in Big Data research or in the broader field of computational social sciences.

4. Uneven access to data. The new division between data-rich and data-poor

As outlined above, there have been unprecedented opportunities in the collection and analysis of data about social phenomena. For example, using social media data, interactions among individuals can be measured in a precise and extensive way to understand behaviour (Felt, 2016); analysing Twitter data the use of language can predict certain health risk factors (Eichstaedt et al., 2015); and mapping the friendship ties in physical space at macro level can detect the structure of administrative regions in a given country (Lengyel et al., 2015), etc. Not surprisingly, in data-driven social science the key to success is to have access to good data – both in terms of quantity and quality. Therefore, the widely-held promise and simple statement of the Big Data era, that due to the data deluge limits of scientific discovery are fading away, evidently needs some clarification. It seems obvious that new divisions between the data-rich and the data-poor are emerging (Boyd and Crawford, 2012). So, it is not just the asymmetric relationship between the owners of the data (those who collect, store, mine, and analyse) and those whom data collection targets (i.e. the users) (Andrejevic, 2014), but the new kind of digital divide that becomes apparent between individual researchers or research groups; between industry and the academic world; or even between countries physically located 'closer to' or 'farther from' the original source of data. As an example, the few dozen data scientists who work at the research lab of Facebook[1] (in addition to being part of academia) are currently probably one of the most privileged researchers in the world. Outside this privileged social laboratory, independent data-collection from Facebook is rather limited using official APIs or by web crawling techniques. At the same time, establishing bilateral organisational relations between major Internet companies (such as Facebook) and research institutions (such as a university) from remote countries seems almost impossible. Local collaborations with major commercial data owners (e.g. telecom service providers, online media companies, or governmental

[1] https://research.fb.com/people/ Accessed: 26-03-2017.

organisations) are more likely to happen, but it also requires efficient negotiation skills, and experience in corporate or bureaucratic languages and cultures. The difficulties in getting access to data was also mentioned as the major obstacle for Big Data research in a (non-representative) international survey of social scientists conducted by SAGE Publishing (Metzler et al., 2016). In short, social scientists need to be able to acquire and utilise new research skills and methods that fit the new paradigm of datafied science. In many cases, it also includes the non-technical ability to acquire (big) data by being open to the demands and interests of other non-academic fields.

5. Challenging the positivistic notion of Big Data: the ground for Critical Data Studies

From a bird's eye view, research using Big Data is largely built around the principles of positivistic science (Kitchin, 2014). In this sense, Big Data research is fundamentally considered a neutral phenomenon, where social scientists could play a leading role is the emerging field of Critical Data Studies (CDS). Here the core idea is to tint the overly functionalist and result-oriented approach, and its initial assumption is that data are under any circumstances a form of power (Iliadis and Russo, 2016). The massive amount of user information collected from individuals constitute a unique form of capital. With this resource, accompanied by complex algorithms and powerful data processing tools, organisations are capable of influencing emotions and culture. This was most spectacularly reflected in the media by the current activities of the data mining and data analysis firm Cambridge Analytica during Ted Cruz's and Donald Trump's presidential campaign in the US, and the pro-Brexit campaign in the United Kingdom. Contrary to the high-sounding promises that mere utilisation of Big Data was enough to win the elections or the Brexit campaign, these analytic tools were only able to model the personalities of voters in unprecedented detail and thus identify target voters in a new and innovative form. Obviously, the long-term effects of these tools' capabilities should not be underestimated, and it also suggests that data are never raw, but always 'cooked', and it is extracted behind the user's back and might be seized to serve the interests of companies, political parties and other organisations. In short, the critical approach to Big Data challenges the ground upon which positivistic Big Data science stands.

As data are increasingly considered to be at the heart of the knowledge economies, data-savvy scholars from the humanities and arts (often in collaboration with information and computer scientists) have ignited critical public debates. Their perspectives on data science are important in that they bring the question of responsibility to the fore (Mann, 2017; McDermott, 2017; Tene and Polonetsky, 2012). Questions of responsible data production and use, ethics, privacy, data power and transparency of data handling form the core topics of this new paradigm (Schäfer and Es, 2017). The main objective of CDS is therefore to construct critical frameworks to exploit power structures related to the creation, curation and utilisation of (big) data.

6. Strategies for social sciences

Based on the trends explained above, the question then arises as to what role social scientists could fulfil in these changing circumstances. Or course, there can be many individual answers to this question, therefore no universal recipe exists. But if we accept that the current structural changes are similar in their effects to what happened in the second half of the 20th century with the statistical and survey turn particularly in the field of sociology, there is obviously a high demand for social scientists who are prepared both in their methodological skills and theoretical knowledge. Computational ethnography, computational linguistics, network science, machine learning, Big Data based experiments (McFarland et al., 2015), etc. are all streams of research that require new analytic techniques and hold great potential for interdisciplinary collaborations. While the multifaceted trading zone of computational social sciences may not rest upon the egalitarian principle, there is a precious place for social sciences to provide synthesis of information and narratives that enable us to understand the findings in a wider social context. Using new kinds of data and tools in a positivistic manner on the one hand, and being a critical, sometimes sceptic, theory-driven data practitioner on the other hand, seem to be the 'winning combo' for social scientists.

The articles in this special section demonstrate how the previously mentioned computational turn can be utilised to examine 'classic' matters of social research in a non-traditional way, and how social researchers can adapt to the new circumstances.

In the first article Mette My Madsen shows how in a data research project questioning the understanding of data itself could become a reality. The author demonstrates, through describing an 'experiment' conducted at the Danish Technical University (DTU) that was a collaborate work of different domains of science with heterogeneous types of data, how the emergence of new types, quantities, qualities and combinations of data, has potential to review our understanding of data anew. The author argues that instead of looking at data in the classic way as either 'raw' or 'shaped' we might gain a different perspective if we regarded it as 'monadic', which here stands for duality as simultaneously both unit and composition.

Dessewffy and Váry present an empirical case study that demonstrates how social media data can be used to address specific questions of cultural and media studies. They examine the relationship between the Hungarian celebrity sphere and social media fandom. Their approach is in line with the primary promise of computational social sciences: how can we ask and answer questions that could not have been asked or answered before. The article provides a network-based analysis of the most well-known Hungarian celebrities on Facebook.

The article written by Kmetty, Koltai, Bokányi, and Bozsonyi goes back to the earliest theoretical traditions of sociology by analysing the seasonality patterns of suicides in the US simultaneously using Twitter data and 'hard data'. They attempted to find grounds for the general negative social climate in the number of suicides committed, and in the aggregated content of tweets posted. Although they did not manage to find a straightforward link between the two, nevertheless the data used for this analysis, the applied methods, and the combination of 'new' and 'old' sources of

data show an innovative approach, that also sheds light on the possible future directions of social science research.

Finally, the analysis of the hyperlink network of Hungarian websites from Romania by Boróka Pápay and Bálint Kubik is a remarkable work because of its efforts to bring together the crawled network data and the classic sociological phenomenon of minority societies. In their analysis, the authors were able to demonstrate that the network of Hungarian websites from Romania is strongly interconnected, forming a community with a separate reality. This article is another example of how sociological research can build on the tools of network science, and interpreting the results inside the 'good old' theoretical frames of social sciences.

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METTE MY MADSEN *

Data as Monads: How Digital Data can be Understood as the Sum of the Components in the Process of Locating it

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Abstract

This article concerns epistemology of data, especially digital data or Big Data. It especially problematizes data understood as something fact-like. The empirical object is a case where researchers from an interdisciplinary collaborative research environment working with Big Data, experienced how banal questions about how to find data led to a journey around problems of competing mathematical models, ethical questions and human agency. Based on the empirical material the article unfolds how data itself can be regarded as inherently contextual, fragile and unstable. This is done analytically by shifting focus from the two most dominant understandings of data within social science: data as something 'raw' that can be picked up using the right tools and data as 'shaped' by the tools of collection. Instead the article proposes to regard data as monad-like that is as the unstable constellations of components in the process of locating the data.

Keywords: Big Data; Digital Data; Monads; Interdisciplinary Collaboration; Computational Social Science.

1. Introduction

This article is about how banal questions of how to locate data in a data research project led to the questioning of our understanding of data itself. The empirical material arrives from a research project in which the author participated, namely the Copenhagen based, interdisciplinary, Big Data research project called the Copenhagen Network Study (CNS). This large-scale research project involved scientists from eight institutes who all shared a common data pool comprised of data from various and diverse channels. The data was collected from a population of 800 freshman students at the Danish Technical University (DTU). Within the CNS the involved researchers organized into sub-groups. In the sub-groups they did their own sub-projects both within disciplines and interdisciplinary ones (http://socialfabric.ku.dk/). The article's empirical focus will be on one such interdisciplinary sub-group, a team of sociologists and anthropologists, and this team's research using data from a student party held at DTU campus to investigate different kinds of intensities at this social event. More precisely the article will focus on the problems that arose before the team of researchers could even start what they thought would be their research project, namely the problem of two seemingly banal questions: 'where was the party located?' and 'who participated?'. Initially these questions seemed rhetorical, something that had to be answered only in order to get on with the real analysis, something that would provide the team with the fundamental data material that they were supposed to base their research on. However, it turned out that the path to answering these seemingly simple questions was intertwined with a context of numerable obstacles concerning competing mathematical models, interpretations of calculations, research political questions and human agency. What was interesting for the researchers to notice was how every step taken and problem encountered in finding the data, altered the data, i.e. the data looked slightly differently at every step or problem encountered. Based on this experience, the article argues that if we understand its context not as something outside of data, but as constituting elements of data itself, data can be understood as continuously negotiated constellations of diverse elements of context.

Digital behavioural data, especially of the kind called Big Data, is often assumed to provide analysis with an objectivity that arrives form direct correspondence with the lived world. As such, it is assumed in many different fields of science as well as other social sectors like business or government, that digital data can provide the possibility to measure the social world with an unprecedented precision. Precision here meaning using data to come closer to an 'objective' or 'true' picture of the social world. By suggesting data as constellations of diverse elements the paper seriously questions these assumptions. However, the point here is not to reject them as 'untrue', but to show that they represent merely one perspective on how data can be understood. The advances in the use of Big Data and network analysis do offer the possibility to answer questions, as well as, to question answers arrived at in previous studies. Too often social scientists either reject working with Big Data or attempt to translate the new approaches to digital data in terms of using existing quantitative routines, gaining little other than 'business as usual'. The first part of the article will focus on computational social science and interdisciplinary collaboration using digital

data as scientific environments that have recently inspired many new insights (Knox and Nafus, n.d.). But here it is also shown that the increased attention to digital data research is mainly centred on sharing and developing tools and methods, while 'data' is left unquestioned. As such, the article follows Davies' (2013) point that disciplinary pluralism will help us reveal the cultural and political substrates of disciplines (Davies, 2013), in this case the substrates concerning data. This article will show that we can understand more about the dilemmas and use of Big Data, by putting data itself into the centre of analysis and questioning our understanding of it. The article will demonstrate how there are ways of approaching data that might open up to scientific investigation – not only with digital data, but also *of* digital data, that is to say *in* digital data itself. Thus the primary concern of the article is about the epistemology of data.

To come closer to an analysis of data itself the article will zoom in on two dominant perspectives on data within computational and social science in its second part, namely data as 'raw' and data as 'shaped'. The first represents an understanding of data as something 'out there', as social facts that exist prior to collection and that can be picked up using increasingly refined tools. The latter is an understanding of data as shaped by the very tools of collection and their extended context of biases such as political, ethical, gender or paradigmatic matters. Data can be made more objective or fact-like by accounting for the process and the extended context of collection. Here data does not exist prior to collection, but is in an inherent interrelation with context (Eriksen, 2001). Though distinct perspectives of data, these two do have the understanding that data is, or can at least be transformed into, something objective or fact-like in common. The article will, in its third and last part, follow the understanding of an inherent interrelation between data and context, but will propose a new way of understanding this relation by advancing the concept of *monad* (Latour et al., 2012). Monad here means the duality of something as simultaneously both unit and composition. Using the concept of monad as a perspective from where to look at the epistemology of data the article argues that digital data can be understood as monad-like. The empirical example of the problems encountered at the interdisciplinary research event is used to demonstrate this point: as the context, that is every problem or step taken to find the data, ended up making the data somehow different from before, the article argues that the context can be seen as parts that compose data. Finding data then means settling for one such composition chosen over other possible compositions. This perspective shows data as other than fact-like, as being monad-like, that is to say, being composed of multiple, diverse and changeable elements.

2. Computational social science and the focus on method

Digital data especially of the kind called Big Data has recently and to an ever-increasing degree become a tool to investigate and analyse social interaction and social networks. This is, for example, seen in the variety of themes that are being studied such as; productivity and information diffusion (Aral et al., 2007), collaborative networks (Sonnenberg et al., 2000), interdependence and trust (Tomkins, 2001), prediction of habitual and non-habitual actions (McInerney et al., 2013), behaviour contagion (Centola, 2010) using digital data obtained from 'real life' by channels such

as calls, e-mail and message logs, geo-location, Bluetooth, online social networks, sensory networks, search histories and more. While some find the storing and usage of these large amounts of obtained digital data concerning and call for increased security (Perrig, 2002), others find that the 'real life' aspect of digital data has become superfluous and that computational research of sociality should instead be done in artificial society simulations built from digital data (Gilbert, 2005).

Also within the social sciences Big Data has raised much attention. In 2007 Savage and Burrows declared that the new age of big and available digital data sets would soon cause a major crisis within empirical sociology since the expertise that was formerly the property of scientists would no longer be needed as both digital data and methods of analysis would now be developed in the hands of public and private institutions/organizations.[1] Once, they argue, the sociological methods such as survey and in-depth interview were the link between the empirical world and the data world, a position most important for generating data about the social. Now, these cornerstone sociological methods have become dated as new digital data including methods for collection and analysis have advanced (Savage and Burrows, 2007). Indeed, it seems likely that social scientists will become irrelevant in computational science if the tendency is really that the 'real life' aspect of data has become superfluous!

Other social scientists do not share the 'crisis' view. Lazer et al. (2009) call for an increased attention to a computational social science. Like Savage and Burrows they argue that the emerging field of big digital data research is currently at the hands of large companies and institutions. However, they see a potential for social science in the computational science scene. Even though they list a number of obstacles, they argue that interdisciplinary research between computational scientists and social scientists, or maybe even computationally trained social scientists and vice versa, would be of great value both to society and the sciences. By embracing both computational and social science collaboratively in a 'computational social science' we might enhance our understanding of the social (Lazer et al., 2009).

Ruppert (2013) also sees the emergence of Big Data research as a potential for interdisciplinary collaboration. Indeed understanding Big Data *requires* interdisciplinary collaboration because methods and expertise for understanding Big Data is distributed over a number of different sciences and other sectors like industry, government and business. Her argument, along with others', is that attention should be paid to the tools and methods of digital data collection (Ruppert, 2013; Ruppert et al., 2013).

The main interests of these studies have been the reconfiguration and development of methods and the facilitation of interdisciplinary cooperation and collaboration with which to work with digital data. Studies such as the CNS are indeed inscribed in, if not born out of, this understanding that dealing with large and diverse digital data, any one science or sector is bound to fall short of understanding its complexity and will only gain very limited, that is to say, science- or sector-specific, insights. One of the many things that motivated the CNS was the possibility for a more

[1] In the 2007 paper Savage and Burrows do not actually use the term Big Data. However, in their 2014 follow-up paper they make clear that the focus of both papers was on Big Data and the influence they predict it will come to have on empirical social science (Savage and Burrows, 2014).

multiplex understanding of social networks using diverse data and engaging in interdisciplinary collaborative research. I have shown here that much attention has been paid to the emergence of digital data, collaboration and computation of the social also within the social sciences. This has led to interesting work on the methodologies of different sciences and how collaboration between these can inspire new approaches and insights into the social world. However, there has been less interest in the basic elements of which any computational analysis consists. A computational analysis with large quantities of digital data is always based on mathematical calculation, which means that they basically consist of two things: digital (quantifiable) data and algorithms. Where there have been studies of what algorithms are and do (Blass et al., 2003; Kockelman, 2013; Wilf, 2013) there has not, in the case of digital data, been much attention paid to data in itself and what data is and does. In these times when more and more digital data is being generated and stored and where the Big Data analysis and computational sciences gain more and more ground it is relevant to ask basic questions about what this digital data is. Let me therefore go on by zooming in on data in the next section by introducing two dominant understandings of data. One is data understood as something out there that can be picked up or collected in its 'raw' form, the other is data understood as something that is always 'shaped' by the process and tools of collection. To make the difference between the two understandings of data clearer I will introduce the two as they are put forth in social science interrogations of digital data.

3. Data as 'raw' and data as 'shaped'

To critically interrogate digital data is what Boyd and Crawford do by offering six provocations that problematize widespread assumptions embedded in work with large digital data sets (Boyd and Crawford, 2012). They point out that there is a tendency for computational science working with social science issues to claim an increased objectivity because of the use of digital data. This is grounded in an assumption of digital data and computation as 'the business of facts and not interpretation' (Boyd and Crawford, 2012: 667).

Boellsdorff (2013) is also directing our attention towards the assumption of digital data as fact. He problematizes what he calls 'algorithmic living' (Boellsdorff, 2013: 2). 'Algorithmic living' is understood as a future that Boellsdorf predicts will emerge if the current treatment and understanding of digital data continues. In this future we will rely more and more on computational (algorithmic) analysis and cease asking questions. Even though there is no unitary definition of what Big Data is, it still has real and increasing effects, not only as a research tool, but also in shaping society. This means that before trying to understand what digital data is, it is already in use for computational analysis, policymaking, commerce, etc. (as I have also shown in the multiple works above). Now, Boellsdorf goes on, there is not necessarily anything wrong with using new technologies for all these things, but when its use is its justification we risk a conversion of 'use' into 'meaning' (Boellsdorff, 2013: 2).

Like Boyd and Crawford, Boellsdorf points out that, at present, there exists a widespread social imaginary about digital data as fact-like, or to phrase it differently, that its collection exists prior to any interpretation, that digital data's basic form is

matter-of-fact or 'raw' (Boellsdorff, 2013: 9), an imaginary that shines through in concepts used in computational sciences such as 'scrapings' or 'ground truth'. However, both Boyd & Crawford and Boellsdorff stress that there is always a theoretical and methodological context that any data is inscribed in and developed from. Theory and method is something that in all sciences is constantly developed, scrutinised changed and revisited and as such this context has an aspect of timeliness to it. The timeliness of the context that data is developed in/from must be considered in order to understand the data at hand and the idea that digital data can be considered anything like 'raw' must be challenged and treated as highly problematic. Instead of buying in on the 'rawness' of digital data, Boellsdorff encourages us to think of digital data as 'a field site amenable to cultural critique and ethnographic interpretation' (Boellsdorff, 2013: 11).

In other words what both Boellsdorff and Boyd & Crawford show is that first of all that there exists a social imaginary about digital data as something 'out there' that can be picked up or gathered using the right tools. In this sense data stands as something factual or 'raw' and this imaginary seems to be dominant not only within computational science, but also to a large extent in society at large. However, they argue, the concept of data (no matter how digital or big) calls for an increased attention to context in the form of, for example, what policies, notions, instruments etc. were at play in deciding what is data and how we should credit it. Let us therefore turn our attention to another way of understanding data that incorporates an extended context.

In anthropology, the background from where Boellsdorff draws his anxieties about the rawness of data, there has long been the understanding that no data can be truly 'raw'. Malinowski (1884-1942), whom is by most considered the founding father of modern social anthropology[2], stressed that every phenomenon encountered by a researcher should be studied in its full context (Eriksen, 2001: 15). He set standards for data collection in anthropology because he argued that there was no way to understand scientific findings without understanding the data and there was no way to understand the data without understanding the underlying 'apparatus' for data collection, that is, the context of how and why the data was collected (Malinowski, 1922: 1-6).

The 'hows' and 'whys' of data collection are of course shared among all sciences. Indeed, all serious computational work includes detailed descriptions of how the data was collected; using what tools and for what purposes and what questions we want to answer. However the 'hows' and 'whys' that Malinowski points to might be slightly different. The potential difference is best highlighted in what is now known as the Writhing Culture Debate in anthropology that took onset in the 60's and 70's and fully flourished in the 80's (Eriksen, 2001: 22). Through the Writhing Culture debate the notion of societies as something that could be generalized about was heavily criticized. Instead anthropologists turned their focus to the individual actors and showed how there could be great variation even in very small societies (Barth, 1975; 1993; Eriksen, 2001: 22). But what is most interesting about the debate, in relation to this article, is that it also marked a shift in how data was understood in anthropology.

[2] More precisely; modern British social anthropology.

There was an increased attention to the tools of data collection (in this case the anthropological researcher) and how the tools would always be inscribed in a context of biases that shaped the data they collected. The 'hows' and 'whys' of data collection were now understood not only as accounts of what tools were used and what questions needed to be answered. Indeed both the tools and the questions were themselves realized as inscribed in complex contexts including power relations, human agency, thought regimes, gender, politics and more (Abu-Lughod, 1989; Nader, 1972). In this understanding there can be no collection of data existing prior to interpretation as data is always shaped by the 'hows' and 'whys' of data collection.

The Writhing Culture Debate was initiated as a critique and full break with the assumption that data could be understood as any kind of 'raw'. This article does also, following the here presented researchers, deal with questioning our understanding of data. Like Boellsdorf this article draws its questioning of the social imaginary of digital data as 'raw' from the anthropological notion of data as shaped or inherently contextually constructed. However, the understanding of data as shaped has its own limitations; for once we have accounted for all the layers of context that are implicit in the tools or methods of collection that shaped our data, the data has once again assumed a form that looks critically fact-like. In any case the question remains how we can approach the 'contextuality' of digital data if not only from the accounting-for-the-tools-of-collection angle? How can we start out with data as our object of analysis instead of ending up with it as a product of a shaping process? The article will here turn to look at how researchers work with digital data in order to know more about data itself. Thus, let me now sketch out an empirical example of such work, what I have previously called 'the experiment'. As stated in the introduction, the article's empirical material, the work of one interdisciplinary collaborative team of scientists, was part of a much bigger project: the CNS. To provide a context whereupon the empirical material can be better understood let me start this section with describing in more detail the CNS, then proceed to describe the underlying idea behind 'the experiment' and finally give an empirical, first-hand account of the very initial proceedings and problems of the teams digital data research.

4. 'The experiment': context and problems

The CNS roughly consists of two separate though fully integrated parts. One part is the SensibleDTU project that is based at the DTU. Here computer scientists manage the data collection, the app and storage development and do computational social network studies of unprecedented width and depth. The other half is the SocialFabric project where researchers from the seven involved sciences, physics, public health, psychology, economy, philosophy, sociology and anthropology, from the University of Copenhagen aim their research at answering a range of questions regarding the formation and importance of social networks.

The data was collected from approximately 800 freshman students at the Danish Technical University (DTU) who were given smartphones with a specially designed app that, using several channels for collection, logged their social interactions every five minutes. The channels of data collection were as diverse as Bluetooth signals, geo-location, call and message logs. On top of that data was collected from

questionnaires pushed to the participating students through their smartphones, Twitter and Facebook information, register data and ethnographic records from one year of fieldwork among the students. The ethnographer was herself equipped with a smartphone that collected her data in the same manner as the participating freshman students (for a more detailed account of the data and collection methods see Stopczynski et al., 2014). Domains of science operate primarily on different types of data and different sciences are interested in different questions and use very different tools and methods to engage with data. The idea of the CNS was to collect data from multiple channels on the same population, to enable researchers from disparate domains of science to work together across field boundaries and draw on the different expertise and results generated by such work and thereby achieve a more diverse range of insights (Stopczynski et al., 2014).

The sub-group within the larger CNS project that is the empirical focus of this article was a team comprised of sociologists and anthropologists. The purpose of forming this specific team was to work in an interdisciplinary, tightknit collaborative manner with data analysis, the work I will from here on call 'the experiment'. The overall idea with 'the experiment' was to work in praxis with heterogeneous types of data by investigating a common empirical object through various data types and methodological approaches. The working thesis was to seek out complementarities of the data types and by that hopefully gain not only more complex insights but also new insights about the empirical object (Blok and Pedersen, 2014). 'Interdisciplinary collaboration' was defined by the team members not only as the shared and diverse data, but also as a methodological approach to the data. An approach that would allow the involved sciences to be inspired by each other's data and ways of conducting research. As one way of practicing interdisciplinary collaboration the team wanted to explore the possibility of doing ethnography in the digital data material (for more detailed accounts on how this was done in practice see Blok et al., forthcoming). What would happen, the team asked, if instead of interpreting data by aggregation, it could be interpreted by means of 'walking around' in it? This approach was facilitated by the kind of digital data gathered and stored in the CNS; its fine granularity and sequential density that allowed for the dynamic behavioural traces of single notes to be followed through large timeframes and the network to be seen from that (or other) notes perspective. In combination with the ethnographic field notes it allowed for a simultaneous quali-quantitative view of data sequences. To find new insights the team would therefore not settle for asking and tracing its own questions in the data, as is often the practice in quantitative research (Blok et al., forthcoming). The team wanted to truly experiment by throwing data types and methods into random compositions, compositions that would in turn force forward new questions in the researchers. With this approach the team wanted to test whether it could chase out new understandings by combining different kinds of quantitative and qualitative data and methods of the kind just described. In 'the experiment' this would be done by engaging with the same empirical object, the object of a social event – a student party held at the DTU. The following will describe the very initial engagement of the team with their object of study, or more precisely all the ado that came before the team could engage in the way they thought they would with their object of study.

This specific social event was chosen on the basis that there was both digital and ethnographic data available and that both had a high degree of granularity and thoroughness. It was decided to start out by looking at the ethnographic data (that would be the ethnographic field notes) of the event in question. The field notes were read aloud to the research group. In the ethnographic data material the team found that the party seemed to have happened in waves from 'dead' to 'intense'. The waves were described and characterized by the connection between the number of student participants at the party and the atmosphere – the feeling of intensity. It was decided to narrow the focus from the party in total to the theme of intensity at the party. The team went on by asking how they could identify and describe the intensity of the party through the digital data material. As a starting point the team wanted to look closer at the waves as social rhythms, as the low and high of students throughout the night of the party.

As described a connection between the number of party participants and the intensity/atmosphere at the party was noticed in the ethnographic account. Here the team chose as a theoretical bridge from the qualitative to the quantitative data, Durkheim's theory of the social event concerning how an event gets more intense with more participants (Durkheim, 1915). With its empirical observation and the Durkheimian theory as backdrop the team decided to use Bluetooth data from the participants' smartphones as one possible medium through which to digitally observe the intensities. Bluetooth was chosen especially because it would enable the team to see both the number of participants and their physical proximity. But here the team ran into problems of a very fundamental kind, because how were they supposed to locate the party and in the same breath find the party participants within the much larger sum of data in the total data pool (from 800 students). The problems centred on 'where' and 'who'.

At this stage the ethnographer was the only one known with certainty to have been attending the party. Likewise her smartphone was known to have certainly been at the party. On this basis it was decided to use the ethnographer's Bluetooth data from that night as a starting point and look for the party and participants by registering what other phones the ethnographer's phone had connected to during the time span of the party. Through this manoeuvre the team hoped to be able to digitally reconstruct the party as a social event using the ethnographer's digital data as a calibration point or perspective, from where to look at the relational topography.

But, after more than an hour's work trying to find the ethnographers data in the large data pool, it was discovered that this data had been removed from the data pool and only existed in its own file. This was done on request from some of our fellow researchers from the CNS out of fear that the ethnographer's data would contaminate the data pool because the ethnographer was not an authentic freshman student.

A sociologist, Ben, from the research team did, however, manage to claim a copy of the total data from the day of the party as well as the ethnographer's data from its special file and merge the two, so that he could trace and map the interaction of the Bluetooth signals directly connecting the ethnographer's phone to other phones. After a full day of work Ben discovers that 30 other phones showed relevant Bluetooth connection to the ethnographer's phone.

The ethnographer notices by now that the field notes indicate that the ethnographer, as well as a number of students, had left their bags and phones in a windowsill at the party. This information about basic human agency at the party questioned the credibility of the number of 30 party-participants as it was calculated on the assumption that the ethnographer, party participants and corresponding phones would have been moving around at the party.

Peter, another sociologist from the team, had worked to locate the party in another way, namely by defining the largest clusters of relevant proximity Bluetooth interaction at the DTU, then inserting the ethnographers Bluetooth data and observe what cluster the ethnographer would belong to. Peter had found a group of about 60, including the 30 Ben had found. Finally and by shared effort it now looked like the team had found the party and the participants, in other words the fundamental data of the research project.

Now to recap: After the decision to narrow the investigation down to 'intensity' at the party the search for the fundamental data happened roughly in four phases: 1) the team looked at the ethnographic data and digital data and arrive, with the theoretical help of Durkheim, at the possibility that atmosphere, number of participants and physical proximity combined might tell something about the intensity. 2) The team looked for the ethnographers digital data in the total data pool. This was made impossible by the fact that the ethnographer's digital data had been excluded out of concerns regarding research-politics and contamination. The ethnographer's digital data was located, claimed and reinserted into our copy of the data set from the night of the party. 3) Using a mathematical model the relevant Bluetooth signals were mapped out. However the credibility of the mapping was obstructed by the likelihood that some of the party participants had left their phones on a windowsill. 4) Finally in an interplay between Bluetooth data, inter-human discussion and a competing mathematical model the search was completed and the data needed for the team's further research was located.

By this note the investigation of how to perceive data could have easily ended in the concluding remark 'that is how the team found our data and now the real research could start' – that is, the research *with* the digital data could start. The above-mentioned account of problems would in that way only show the process of how the fundamental data were found or shaped. It would have been a self-contained story about our trouble terminating in endpoint-data. But let me instead use these problems and ask what we might have learned from them instead of dismissing them as merely a troublesome means to an end. Thus this article will instead ask: what can we learn about data when seemingly banal questions of 'where' and 'who' ended up in matters of competing mathematical models, human agency and different research policies? With this question I hope to direct the focus from a narrative of research by the means of data to a narrative concerned with research of or in data itself. In this light the team's quest to find the fundamental data stands out as a point in its own; for what had happened when the questions of 'where' and 'who' were asked was that the understanding of what data is had to be rethought; instead of understanding the search for the fundamental data as a process that shaped our data, we could see how the fundamental data was comprised of the sum of all the things that had happened and were drawn in to find it. In the following section I will make this point clearer.

5. The monadological perspective

We have the ethnographic and digital material from where we choose the parts about Bluetooth and atmosphere. We have the ethnographer's digital data and the research political considerations of CNS colleagues, the considerations that have changed the position of the ethnographers' digital data to be outside of the large data pool. Finally we have the reinsertion of the ethnographer's digital data and the interplay between that, other Bluetooth data and two mathematical models. The point here is that the events described can be understood in three ways, namely 1) as a process that led to data 2) as a process that shaped data, or 3) as parts of data.

The shift seems small, but it still indicates a change in how to understand data. In the first case there is a prescribed static understanding of data as something stable that 'is out there' and that can be found using the right tools. In the second data is understood as shaped by different contextual factors, but again, once shaped, data figures as something that 'is'. In both these understanding it is possible, by accounting thoroughly for the process through which the data has been shaped, to make the data more objective, creditable or fact-like (Boellsdorff, 2013: 3). In the third case there is no processual understanding in play and therefore there is no understanding of data as less or more fact-like. In the third case the data we have and the way we arrived at it is to be understood as one and the same. Let me explain this last point more elaborately by drawing on Latour et al.'s research on new visualization and navigation possibilities in digital data material.

The focus of Latour et al. (2012) is how search-tools and accessibility of large quantities of digital data in combination with new possibilities of visualization leads to new ways of navigating digital data. They argue that this new availability of digital data allows for a re-evaluation of how notions of micro and macro are understood especially in the social sciences. Social science, they claim, has always operated through the understanding that sociality exists on two levels, a micro level that focuses on individuals and a macro level that focuses on the aggregate (the two level standpoint or 2-LS as they name it in the article). Even though there have been multiple attempts to analytically bridge these two levels (Bourdon, 1981; Bourdieu, 1972; Giddens, 1984) they are still the primary foundation for shaping research questions within social science (Latour et al., 2012: 590-591). Latour et al. go on by claiming that the presupposition that there exist two levels will end up biting its own tail, because when we operate with the presupposition that there exist two levels we cease to keep the content of the levels open for enquiry. The really interesting question, they argue, is not how to get from one level to another but to ask: 'What is an element? What is an aggregate?' (Latour et al., 2012: 591). However, they argue, the 2-LS is now being challenged by the accessibility of very large quantities of diverse data. To demonstrate this they use as an example the situation where you look for information on the Internet about a person that you have a business appointment with. They call this imaginary person Hervé C.

The first thing to do is to search on the name Hervé C. on the internet, find the person, where he is employed, CV, publications, projects or the like. All the things we find about Hervé C. are in the language of Latour et al. called *attributes* and it is through all these attributes that we start to form a picture of Hervé C. until we can say

to ourselves 'Who is *this* actor? Answer: *this* network' (Latour et al., 2012: 593). As such Hervé C. the person that at first meant nothing more to us than just a name, is now understood by us or indeed 'is' a large network of attributes we found during our Internet-search. In our understanding this network of attributes is now connected and perceived as one entity, namely Hervé C., the envelope that encapsulates the network of attributes by one name (Latour et al., 2012: 593).

Following the 'monadological principle' (Latour et al., 2012: 600) the categories of element and aggregate versus micro and macro become dissolved and irrelevant because all elements are themselves aggregates and all aggregates are elements in other aggregates. This, I will now argue, might have the potential to help us understand data in new ways.

As I have described above in a previous section, digital data is usually understood as fact-like in one way or the other. Within computational analysis data was, roughly speaking, seen as something 'out there' that could be collected using the right tools. Within the social sciences data was, equally roughly speaking, understood as something that took shape from the tools and extended context in the process of collecting it. The difference between these two understandings is not to be taken as a breaking point where one is rejected for the sake of the other. Rather the social science understanding can be seen as a continuation of the other in the way that the extended context of the tools helps us to see how data takes shape from the tools of collection. Similarly the step taken from the social science perspective to the monadological perspective of data is not a great leap or break. Rather it is an extension of the idea of context shaping data; in a monadological understanding of data the extended context is not simply outside of data but inside. It is an inversion of the understanding of contextually shaped data. Let me explain it in another way:

If we can understand an element in a network as always consisting of more elements or an attributes cloud, can we then also understand data, one of the two basic elements of computational analysis, as always consisting of more data? The question opens the suggestion that if we understand data as inherently unstable constellations of attributes, something that is already always negotiated, fragile and sensible to changes. To make the argument by way of comparison we can say that if the name Hervé C. is the team's initial response to questions of 'where/who' and the things, persons and events during the team's search are equivalent to the Internet search, then Hervé C. after the search is equivalent to the team's data after finding it. For example, we saw in the empirical example how the team brought in Durkheimian theory at an early stage in their search for the fundamental data. By doing this, the team could be seen to have narrowed the search by defining the kind of data they were looking for 'out there' in the data set. However using the monadological perspective 'defining a kind of data' means building up its specific constellation of attributes, and from that perspective the team has started building its data by providing it with an attribute. The shape that the team's data took was due to the specific combination of attributes mobilised to find it. As another example let us recall that when the ethnographer suggests that she as well as several party participants might have left their phones on a windowsill. Here a sudden fragility of data is revealed because this extra peace of contextual information, or indeed the human agency, made the data change from highly factual to highly questionable. In other words the

composition of attributes in the search mirrored a difference in the data. Also the final use of two different mathematical search models, Ben and Peter's, highlight this point. For adding Ben's model gives us a very different perspective on the party than Peter's model. Adding Ben's model gives us 30 participants – a small size party – whereas Peter's model gives us 60 participants – a regular size party. Two different perspectives individualized by their (slightly) different sums of attributes. To put it in yet another way we can depict the difference like this: sum + mathematical model 1 = sum1 and sum + mathematical model 2 = sum2.

So, what does the encapsulation of the context into data itself mean for the understanding of data in this article? It means that there can never be a piece or pieces of data that does or do not itself consist of data, that any data is always a network of things, persons, events, etc. When we change perspective regarding the context that shaped our data from being 'outside' the data itself to being what any data is made of we can escape the fact-like understanding of data. Rather we can understand the data we ended up with as a stance, a specific perspective of the party that was foregrounding other perspectives, because of that exact combination of the different attributes that enabled us to regard something as 'the data'. There is an almost circular movement to this argument: the way we went about the search for data was, so to speak, what we saw, it was the perspective from where we addressed data and it affected the internal properties of our data which in turn affected how the data was understood.

6. Stepping into data

Let me conclude by summing up the point of this article: by applying the monadological perspective on data we might be able to place data itself at the centre of scientific interrogation and thereby gain new insights about one of the basic essentials in any social science research.

Even though theorists within the social sciences (and other disciplines) have been concerned with the epistemology of data and have developed and treated the concept of data with care and reflection, it is of great importance never to stop challenging assumptions or settle with current paradigms about what data is. The questioning and reconfiguration of dominant understandings of data is even more pressing since data is one of the cornerstones of any social science research; leaving data as something fact-like and only concern ourselves with tools and methods we risk getting stuck with an out-dated set of apparatuses for research. In other words, to develop tools and methods for data research it seems a good idea to reflect on what this data is or we might risk that what we use to research data only shows us what we knew already.

The article has demonstrated, through describing 'the experiment' – a collaborate work of different domains of science with heterogeneous types of data, how the emergence of new types, quantities, qualities and combinations of data, for example in certain types of interdisciplinary collaboration and combinations of heterogeneous data types, has potential to review our understanding of data anew. As we saw, the team did not actually set out to investigate digital data as such, but to investigate using digital data. The data was initially just something needed to get on

with the 'real' research, not something that was to be questioned in itself. Perhaps therefore, the problems encountered when approaching the data inspired this article. It was the deconstruction of traditional research frames in 'the experiment' that brought forward self-reflection and the meta-question 'what are the data we are working with?'. This article has been an attempt at answering just that.

Thus, the concern of the article was with the implicit understandings of data that form the basis of the majority of social science research. Two such understandings were drawn out, that of data as 'raw' and data as 'shaped'. This article has demonstrated how we might gain a different perspective on data if we regarded data as 'monadic'. The empirical material illustrated how it was possible to change focus from an understanding that the extended context of data would be something outside of data itself, that the data had a final form after the search process had finished, to regarding data as the sum of the attributes that comprised the search. By this shift of perspective, I argued, we can gain the possibility of analytically stepping into data itself. The leap from outside of data to inside is first of all interesting, because, as I have shown, most research on data is focussed on the methods and tools of data research and not on data itself. However, taking data itself as the point of departure for analysis raises three other points of interest for social scientists: 1) a new field of analysis: data itself as an object of analysis. 2) A new method for analysing data: by identifying the attributes that comprise the perspective that is our data we gain the possibility to open up every single attribute and identify what they consist of (political, mathematical, human, technical etc.). 3) A new epistemological understanding of data: by changing how we see the object of study we might be able to develop even more new tools and methods for analysis.

If we understand data as the relation of attributes we can take the step into our data and investigate it from within. As such it would be possible to move not only between data, but *within* data. Might there be, by adding the monadological perspective to the repertoire of understandings of data, an increased possibility for scientific research not only with digital data but also within data itself?

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Fame, Fans and Facebook. Hungarian Celebrities and their Admirers

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Abstract

Big Data presents the social sciences with an overarching challenge. Following many theoretical manifestos, we here present an empirical case study to demonstrate the new approaches that have become possible by using social media data in a specific field of cultural analysis. This paper reflects on changes in celebrity/fandom culture (Jenkins, 2006; Jenkins, Ito and boyd, 2015). The trend towards democratization was hastened by the spread of the internet, while the demotization of the process of celebrity creation became even more pronounced through web 2.0. Our study examines the relationship between the Hungarian celebrity sphere and social media fandom using quantitative research, including cross-sectional, network and correlation analyses. To illustrate the differences among the categories of celebrities and their fandom, we introduce two values—environmentalism and consumerism—which help to highlight existing patterns. Analysis of these dimensions can provide benchmarks for interpreting the thus-created proxies, and help us to reflect on the social roles of celebrities and their followers.

Keywords: Celebrity culture; Social media; Big data; Web 2.0; Network analyses.

1. Introduction

The recent explosion in digital data created by the use of social media holds a dialectical fascination for social scientists. As an increasing number of human activities migrate to the space of social media and therefore become hybridized, they create exciting research subjects for scholars. On the other hand, these digital data also call for new data-gathering, data-mining and data-processing techniques, and radically new methodologies. We call this fascination dialectic because these two dimensions—new research subjects and new methodologies—are obviously interrelated: they mutually and permanently shape the questions we ask, the answers we get, and the statements we articulate. Although this dialectical fascination with data-driven social science is felt by many, we believe it is justified only if this approach is able to meet two further expectations.

First, a data-driven approach is justified if it is able—or at least intends to—answer relevant questions (that is, it avoids asking irrelevant, boring questions which have no—or very little—social relevance). Second, it is justified if the methodology that is applied sheds light on social problems that cannot be answered better using traditional methodologies. This implicit critique—elaborated by others in detail elsewhere—posits that attempts to do data-driven social science can be self-referential, redundant and non-reflexive (Boyd and Crawford, 2012; Kitchin, 2014). Just because digital data are available does not automatically mean that they reveal a deeper understanding of social reality. The desire to address relevant social questions using new methodologies must not be confused with what Lazer and his colleagues call 'big data hubris'—which refers to the use of such data without clarification of their validity and reliability (Lazer, Kennedy, King and Vespignani, 2014).

The empirical case described in this paper, the social media representation of Hungarian celebrities, is a legitimate research question in itself. However, it is our ambition here to prove the utility of our digital research methods. We claim that the analysis of digital social data allows us to ask and answer questions that could not have been asked or answered before. Following these considerations, we first outline the theoretical context of our empirical research, then introduce methodology and present findings.

2. Theoretical context - Why are celebrities relevant?

The reason behind the so-called 'cultural turn' is that in late modernity the role of cultural consumption and identity construction has dramatically increased (Giddens, 1991). Moreover, the gap or social distance between the 'elites and masses' has grown and is also being restructured (Bourdieu, 1984). Be they youth cultures, gamers, reality television audiences, trash entertainment aficionados, etc., the multiplication of media channels and the segmentation of media consumption has given rise to the increasingly pressing need to understand these new subcultures. In this situation, cultural studies are supposed to function like 'inward anthropology'; that is, they should reveal and interpret hidden meanings within a given society. In light of the present crisis of legitimacy, growing populism within Western societies and the emergence of anti-elite movements, this can hardly be said to have been a successful

project so far. But the failure of the political project only emphasizes the need to better understand 'low', 'mass', 'popular' cultures and their consequences.

At the institutional level, this need led to the development of cultural studies. Later, it supported the proliferation of related sub-disciplines such as television and film studies, leisure and tourism, sports studies, etc. Then, following the logic of the specialization of scientific fields and related developments in social life, these disciplines were further subdivided into audience studies, celebrity studies and fandom studies. Our research contributes to the latter two fields.

From this interdisciplinary interest in studying mass culture, the issue of 'celebrity culture' has grown in importance (Rojek, 2001; Jenkins, 2006; Marshall, 2006; Holmes and Redmond, 2006; Turner, 2013; Couldry, 2015; Marshall and Redmond, 2016). As Chris Rojek argues, the emergence of celebrity as a public preoccupation is the result of three major interrelated historical processes:

> 'First, the democratization of society; second, the decline in organized religion; third, the commodification of everyday life. The decline in Court society in the 17th and 18th centuries involved the transference of cultural capital to self-made men and women. As modern society developed, celebrities have filled the absence created by the decay in the popular belief in the divine right of kings and the death of God'. (Rojek, 2001: 15)

Investigation of the development of celebrity studies—and the wider field of cultural studies—leads to the discovery of an odd contradiction. On the one hand, 'celebrity' has become a focal point of our culture, and there is a rising tide of studies about celebrity/ies. Indeed, in the last 15 years the number of pieces of research and the (rapidly institutionalized) interest in scholarly studies about the phenomenon of celebrity is clearly apparent. On the other hand, in 2010 in the newly launched academic journal Celebrity Studies, Graeme Turner, a leading scholar in the field, states that there is not a

> '(...) great deal of depth or variety in academic writing and research on celebrity. Most of the readers and edited collections (and, significantly, there are many more of them than there are book-length studies) tend to work over similar subjects in similar ways. These subjects, in turn, tend to be drawn from a limited pool of individual celebrities or celebrity-related media "flashpoints" (...) and the mode of analysis is primarily textual and discursive. (...) Overwhelmingly, however, the field is populated with analyses of individual celebrities either as media texts interesting in their own right or as pointers to broader cultural formations or political issues; in either case, the focus of analysis is upon the details of their representation through the media.' (Turner, 2010: 13).

Although he finds textual analyses to be important and often valuable, Turner goes on to call for new approaches in celebrity studies:

> 'For my part, I think we need to do more to actively foster other approaches to studying celebrity. To do that, we need to remind ourselves that celebrity is not

> only a category of media text nor merely a genre of media discourse. There are a number of ways through which we might define and thus approach celebrity that would help us account for other dimensions to its function and significance.' (Turner, 2010: 13)

The author's call to go beyond media texts and discourses is amplified by another major social technological trend that we call the 'digital turn'. This term refers to the immense cultural impact of the diffusion and sedimentation of digitally networked technologies.

These new digital technologies and the social practices they bring about obviously change how celebrities are produced, and how they function and communicate in a transformed media environment.

One of the major features of this transformation has been a radical change in the information ecosystem, and a diminishment of the decision-making power of editors, producers and professionals.

For some, the way that media elites are losing ground as a cultural filter has an obvious empowering effect. John Hartley, for instance, describes these developments as 'democratainment'; 'the means by which popular participation in public issues is conducted in the mediasphere' (Hartley, 1999: 209). Harvey sees this new form of celebrity as a form of 'DIY Citizenship' or 'self-determination Semiotica' - the construction of a new cultural identity through the process of media consumption. Clay Shirky, meanwhile, envisions a new era where potentially everyone is a media outlet (Shirky, 2008).

Although also articulating a critique of Hartley's concept of 'democratainment', Nick Couldry similarly claims that 'ordinary people have never been more desired by, or more visible within, the media; nor have their own utterances ever been reproduced with the faithfulness, respect and accuracy they are today' (Couldry, 2003: 102).

However, Graeme Turner's concept of the 'demotic turn' modifies this celebratory tone somewhat. The notion of the 'demotic turn' is also intended to capture the processes by which actors and celebrities created by the cultural industry are challenged by 'self-made celebrities'. Although he considers the process to be generally positive, Turner prefers the term 'demotization' over democratization to avoid overblown assumptions that changes in the structure of a celebrity-dominated public sphere lead to political emancipation. The author contends, however, that a 'demotic culture' is emerging that raises social aspirations whilst reducing deference and breaching the barriers of gender and class. As a result, we are witnessing a new process of identity creation. 'Celebrity itself begins to mutate: from being an elite or magical condition to being an almost reasonable expectation from everyday life' (Turner, 2004: 84). New media genres and technological innovation such as reality television, webcams and social networking sites make these expectations attainable.

While Turner described this process in the context of reality television shows, the idea can be extended to the digital world where it seems to be relevant in two dimensions.

On the one hand, following the logic of digitalization, especially with respect to developments concerning social media, one can say that further decentralization of the

production of celebrities is taking place. In some cases, these new types of celebrities are the products of social media (involving multi-million downloads of videos from YouTube, Facebook or Instagram profile pages). Here one cannot always identify corporate image-building and marketing mechanisms, as was almost always the case in earlier times. But there is another feature of demotization; namely, the empowerment of fan culture. The low entry cost of the digitization of communication has fortified and expanded on the previously centralized forms of interest and attention which are essential to the construction of celebrity (Jenkins, 2006). Admirers and idolizing spectators were always, *per definitionem,* necessary elements of the construction of the concept of celebrities. Simply put, no celebrity exists without the appreciation and attention of an audience. The novelty of the new convergence culture, however, is that audiences and fans now have a much more active role in distributing information, in interacting with celebrities and their 'back office', and in the shaping of their public image (Jenkins, 2006; Jenkins, Ito and Boyd, 2015)

It is for these reasons that we accept Turner's call for new approaches to celebrity studies. Our approach also reflects upon the immense changes induced by the digital turn. We focus on the social media 'celebsphere' in Hungary through a description and analysis of the digital footprints that celebrities have left on Facebook (in our dataset we use Facebook 'likes' on the public pages of these celebrities). One valuable component of this dataset is its relational character. By focusing on relations we neither investigate the self-proclaimed impact of celebrities or their impresarios, nor deal with the adulation of certain fan groups in isolation. Instead, through our data-based approach we show that we can identify meaningful patterns in the complex relations between celebrities and fans. As Raine and Wellman suggest: "Data mining, social network analysis, social computing studies and user-generated folksonomies.... will make the web easier to navigate and allow information now scattered in various places to be pulled together in meaningful ways" (Rainie and Wellman, 2012: 281).

In what follows, we first elaborate on the post-demographic paradigm as the relevant theoretical/methodological frame for our research. We then introduce our methodology, outline the research questions and present our dataset and analyses. By doing so, we intend to prove the relevance of the post-demographic paradigm that appears to be providing a unique opportunity for conceptualizing and articulating answers to pre-existing questions. In the meantime, our empirical findings are by no means intended to simply illustrate a theoretical standpoint, but also to shed light on certain parts of the complex relationship between celebrities and their fans in the age of social media.

3. Digital data and the post-demographic paradigm

There is a growing body of literature about the theoretical challenge presented by digital methodologies. Within this, the basic idea is that when 'data-gathering instrumentations [change...], so will the social theories associated with them' (Latour, 2010: 157).

Although the radical novelty of digital methodologies is often stressed by contrasting them with previously dominant survey methods, it is good to remind ourselves that surveys are also a historical product. The survey method gained

popularity and legitimacy because of its perceived advantage over observation-based methodologies. What is significant to note here is that any methodology paradigmatically creates an episteme—borrowing Foucault's notable concept (Foucault, 1980). The main function of an episteme is that it marks the boundaries between what can and cannot be said in a given discourse (Rupert et al., 2013).

Therefore, we do not herald the coming of the digital age as a victory over old methods. Rather, we aim to describe some of the characteristics of knowledge-production by means of digital methods. In the present paper, the purpose is even more modest. We do not attempt to cover the whole vibrant debate about digital methodology (Rogers, 2009; 2013; Venturini and Latour, 2010; Marres, 2016), but instead only describe a number of the specificities and affordances of the digital data which are relevant to our research.

3.1 Granuality

Bruno Latour celebrates the collection, ordering and processing of digital data for epistemological reasons:

> 'What we are witnessing, thanks to the digital medium, is a fabulous extension of this principle of traceability. It has been put in motion not only for scientific statements, but also for opinions, rumors, political disputes, individual acts of buying and bidding, social affiliations, movements in space, telephone calls, and so on. What has previously been possible for only scientific activity – that we could have our cake (the aggregates) and eat it too (the individual contributors) – is now possible for most events leaving digital traces, archived in digital databanks, thanks, let's say, to Google and associates.' (Latour, 2010: 159–160).

Latour argues that what the 'digital deluge' offers is the deconstruction of holistic and homogenous social concepts. These comprehensive and abstract concepts tend to determine our ways of thinking, even though holistic notions such as 'society', the 'consumer', 'women' or 'voters' are oversimplifications because they conceal the underlying diversity they represent. Nor is the situation much improved if we break these terms further down by using traditional concepts and terminologies. When we speak of 'urban elderly', 'undecided voters', 'middle-class women' or 'college youths', then these more disaggregated categories can be just as incidental and empty as the categories we started with.

It is obvious that these labels mask the conglomeration and networks of very different individuals. Ideally, and when properly employed, digital methodologies can help with capturing, interpreting and describing the diversity and complexity of such relations—and ultimately life itself—since they enable us to identify a large number of players and to shed light on the relations between them. This is what Evelyn Ruppert and her colleges called 'granularity':

> 'There is a suspicion of aggregated properties that are derived deductively. Instead, the focus is on particularistic identifiers (...). In such processes aggregates may also be derived (as clusters of granular cases), but these are

> inductively created and not 'imposed' onto data sources [...]. This focus on granularity drives forward a concern with the microscopic, the way that amalgamations of databases can allow ever more granular, unique, specification. This is part of a desire for wholeness, an embrace of the total and comprehensive which is never ending but which generates a politics of mash ups, compilation, and data assemblage [...].' (Ruppert et al., 2013: 13)

3.2 Behaviorism

Surveys tell us about opinions. For the most part, these opinions tend to be epistemologically 'messy', and the picture they provide bears a tenuous relationship to reality at best. When undertaking survey-based data collection we may harbour serious epistemological doubts as to the validity of the answers we receive, even in the case of the most innocuous issues. Not because respondents deliberately want to mislead researchers, but because most often their positions about the given issue are not fully crystallised. Surveys in which respondents are questioned tend to produce answers that reflect respondents' desires to comply with what they presume is expected of them. The results of surveys are also tenuous because they may generate obscure, often even non-existent views when respondents respond to questions about topics about which they had no definite prior opinion. By contrast, the methodology we employ fundamentally relies on digital footprints: the imprints left by user behaviour. If we are interested in someone's political attitudes and preferences, then we do not need to obtain answers to questions such as 'Do you visit the following pages when you surf the internet?', as would be used in a survey. Instead, we may obtain a clear picture of their actual behaviour as manifested in the number of 'likes', 'attends' or group memberships of pages. Researchers thus may obtain clearer pictures of real preferences, decisions and activities than they would using traditional methods.

3.3 The sensuality of Facebook data

The traditional 'social science apparatus' also contains some biases that narrow the conceptual horizon of articulated social problems. Mike Savage demonstrates how survey methodology uproots individuals from their social context and relations (Savage, 2010). It can be argued that the enumeration and sampling of individual survey data creates an over-rationalized representation of reality. In other words, it fails to take emotions, pleasure and sensuality into account (think about the clumsiness of survey questions which deal with sexuality, for instance). We raise this issue because Facebook data represent the other extreme. In terms of Facebook emotions and things about which users may be enthusiastic, the effects of sensual stimuli—be they food, music, sport or 'events of outrage and hope'—are over-represented. Therefore, when the research interest relates to these topics, Facebook may be a better source of data.

Although we have thus far focused on the characteristics of our Facebook database, these three factors—granuality, behavioural factors, and sensuality—define a very different landscape or episteme. As Ruppert et al. pointed out, in these fields,

'the move to the digital is *a move to heterogeneity*... It is about factors, impulses, risk profiles, and circuits and the post-demographic as Rogers has suggested' (Ruppert et al., 2013: 12).

Indeed, the concept of the post-demographic paradigm sums up what we have said so far about the specificity of Facebook data. This concept also underlines the compromise we must accept when we use this approach (just as we must make a Faustian bargain when using any other research apparatus). We have no chance of understanding the traditional socio-demographic components which are the starting points for all surveys which may have preceded our research. But we may still understand other things by being able to respond to some of the questions that were previously unanswerable. Rogers describes the post-demographic paradigm as follows:

> 'Conceptually, with the 'post' prefixed to demographics, the idea is to stand in contrast to how the study of demographics organizes groups, markets and voters in a sociological sense. It also marks a theoretical shift from how demographics have been used 'bio-politically' (to govern bodies) to how post-demographics are employed 'info-politically,' to steer or recommend certain information to certain people (Foucault, 1998; Rogers, 2004). The term post-demographics also invites new methods for the study of social networks, where of interest are not the traditional demographics of race, ethnicity, age, income, and educational level – or derivations thereof such as class – but rather of tastes, interests, favourites, groups, accepted invitations, installed apps and other information that comprises an online profile and its accompanying baggage.' (Rogers, 2009: 30)

This post-demographic approach is supported by the major sociological theory of individualisation (from Beck to Bauman, from Castells to Latour), as well as the everyday experience of empirical and marketing researchers; namely, that traditional socio-demographic categories have begun to lose their explanatory power.

Application of the post-demographic paradigm to celebrities seems promising due to the emotional attachments of their fans, which results in significant media activity. Also, focusing on fans' social media activities rather than the posts and representations of celebrities themselves is useful in terms of avoiding the trappings of the content analysis of celebrities. As Hermes and Kooijman note, the '...every day use of celebrities is difficult to capture methodologically. Inquiring about celebrities, or analyzing the media texts that they appear in and often dominate, automatically assumes that celebrities are important and highly meaningful. Celebrities are, however, not always explicitly meaningful...' (Hermes and Kooijman, 2016: 483).

We agree with Ruppert and her colleagues' conclusion that 'in relation to digital devices then, we need to get our hands dirty and explore their affordances: how they collect, store, and transmit numerical, textual, or visual signals; how they work with respect to standard social science techniques such as sampling and comprehensiveness; and how they relate to social and political institutions. To tease out these specificities and qualities it is useful to consider, in an historical register, how digital devices compare with other, older socio-technical devices, and consider the different affordances that they offer in a nuanced manner' (Ruppert et al., 2013: 9).

The affordances of the Facebook data at our disposal, not to mention the legal and technological limitations, also delineate the range of possible inquiry. In other words, the post-demographic paradigm is relevant because this is the interpretative frame that the available data provide us with. Facebook does not make social demographic data available. Nevertheless, the application of the post-demographic paradigm to the subject makes it possible to pose relevant questions concerning the nature of the feelings of celebrity fans. In light of the aforementioned, we present the following research questions:

RQ 1 What is the basic topology of the Hungarian 'Celebsphere'? Who generates the most activity?

RQ2 Can we observe a trend to 'demotization' in our list? If not, why?

RQ 3 Can we apply traditional typologies to the 'Celebsphere'? Does it make sense to differentiate between ascribed, achieved and attributed types of celebrities?

RQ 4 Can we identify major value patterns among the supporters of celebrities? How do 'green' and 'hyper-consumerist' values occur in relation to the popularity of celebrities?

4. Methodology

The empirical research described here is based on data provided by Facebook. Facebook allows its users to officially obtain data from the platform through so-called APIs (Application Programming Interfaces). Our database is built on data accessed through API that was collected between January 1, 2016 and June 30, 2016. We collected anonymous user activity consisting of post 'likes' on pages. According to the official Facebook definition, 'pages are for brands, businesses, organizations and public figures to create a presence on Facebook.'[1] Publishing posts on a page means that content becomes visible to anyone on the internet by default. Facebook users can react to these posts by clicking on an icon and 'liking' them (which we call post 'likes'), a process distinct from what are known as 'page likes', which refers to 'following' a page.

Our database permits the individual profiling of each user, and the connections and schemata of these profiles provide the analytical background for the present research.

[1] https://www.facebook.com/help/282489752085908?helpref=popular_topics Accessed: 25-03-2017.

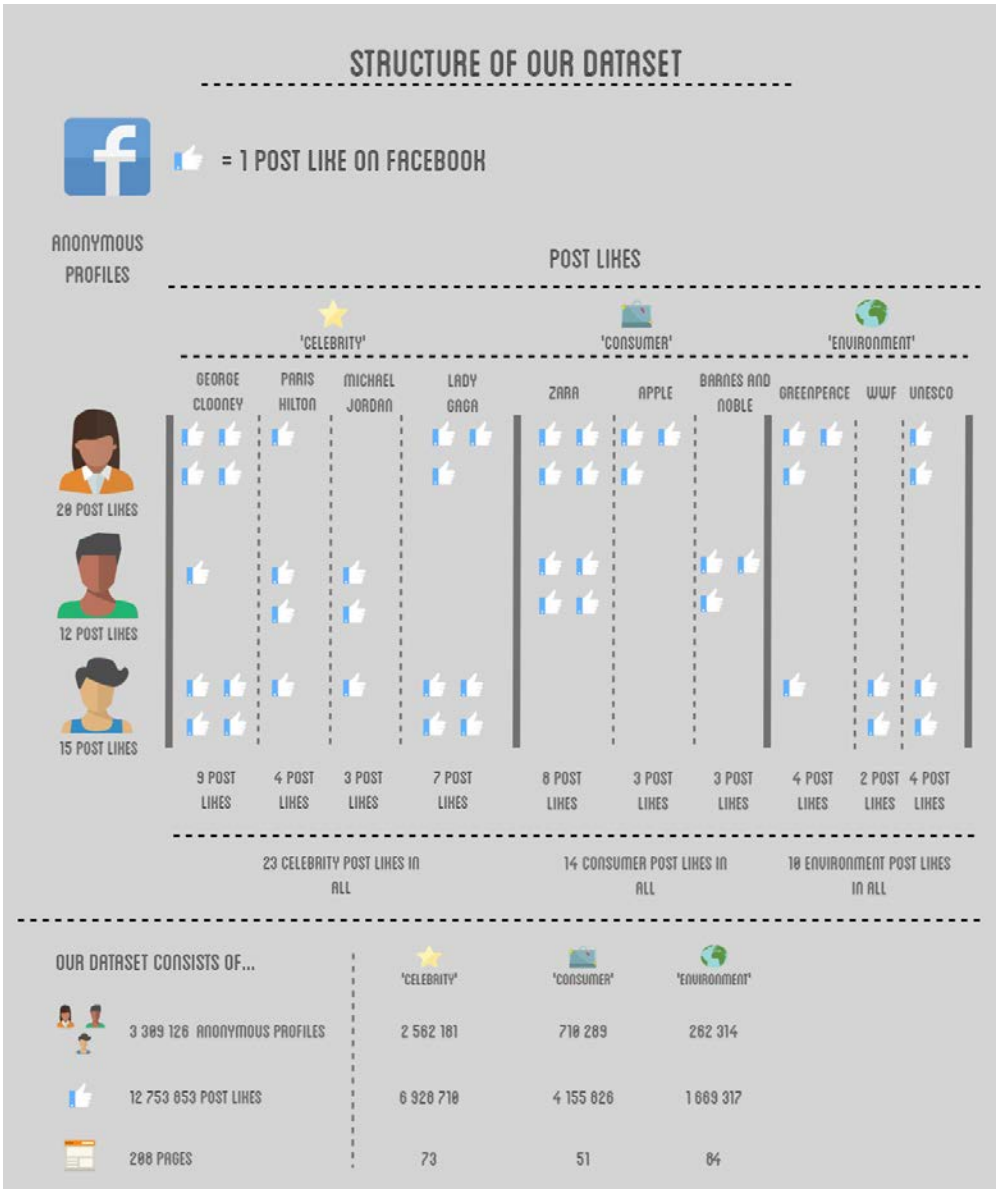

Figure 1: Structure of Dataset

As we can see in the infographic (Figure 1) for our dataset, the basic elements of the research are post 'likes'. These post likes are the Facebook activities that we examine. Every Facebook user in our dataset has liked at least one post, but most of them have liked many posts across many pages. The Facebook users used as an illustration in the infographic above represent three average users with post likes on different pages. The first user has 20 post likes on seven different pages, for example, and the second has 12 post likes on five pages.

As the infographic shows, these pages can be analysed according to thematic groups that distinguish pages based on the creator and the content. Using the

categorizations and lists of pages on Socialbakers.com—which is one of the biggest and most authoritative sources in the Facebook analytical industry, and which we also supplemented with our own system of categorization—, we divided the Facebook pages into three thematic groups. Using the group of celebrity pages we created the main research sample, while one group of consumer pages and one of environmental pages serve as sub samples for further analyses.

As the main topic is celebrities, the database focuses on the sphere of celebrities on Hungarian Facebook. The term 'celebrity' is based on the self-categorization (actor, model, TV personality, etc.) of public pages on Facebook.

Using the classification, 73 such Facebook pages consisting of pages that belong to the most famous Hungarian celebrities (e.g., musicians, bands, athletes, movie stars) were screened. Through this process we identified 2 562 181 people and 6 928 710 activities (post likes) in the celebsphere.

Second, we examined Facebook user preferences according to inclination to hold consumer values and environmentally friendly attitude. We posit that both consumers and environmentalists can be appraised based on the activity they engage in on social media platforms.

We used post likes of main shopping malls, brands and online stores (across all 51 pages) to identify consumers,[2] while the environmentally friendly group was compiled based on their association with one (or more) of a total of 84 pages which deal with environmental issues. An individual was deemed to belong to a 1) consumer, 2) environmentally friendly, or 3) celebrity audience group if they had liked at least one post ('been active') on the related pages during the period under investigation. For example, the first hypothetical user in Figure 1 is associated with a page by George Clooney or Lady Gaga (i.e. a celebrity group), and also belongs to all other groups. The second user is one of the celebrity audience of George Clooney, but not Lady Gaga, and belongs to two other page groups (not having 'liked' any of the designated environmental pages). The third user is similar to the second one (being associated with two groups of pages) but the groups are different: they include celebrity and environment.

The 'environment' group consists of 262 314 people and 1 669 317 activities, while the 'consumer' group consists of 710 289 people and 4 155 826 activities.

The distinction between 'post likes' and 'page likes' is significant. While liking a page may infer the intention to follow a certain issue, it does not necessarily mean that the user sympathises with the page issue or personality. However, 'liking' a post may be understood as specific statement of agreement with its content.

By applying Python computer language to the database, as well as creating cross-sections and testing correlations, we examined the connections between the different pages and groups.

This paper contains three network figures. Before we begin to interpret our findings and graphs (Figures 2, 3 and 4), we briefly review the process of their construction.

The network figures were created using Gephi, an open-source platform for network visualization and analyses. Every node in these figures represents a celebrity,

[2]The list of pages, groups and events is available on request from the authors.

while edges indicate the relationships between the celebrities. The thickness of the edges represents the intensity of the 'common fandom' of linked nodes. Returning to the infographic, we can define common fandom in an easy way. Two celebrities are said to have a common fan when a given Facebook user has liked at least one post on both celebrity pages. Using the example scenario (Figure 1) George Clooney and Lady Gaga have two common fans because the first and the third user liked at least one post on each page.

The structure of networks can be manipulated by so-called layouts, which are based on different algorithms. During the visualization process we used a layout called OpenOrd.[3] OpenOrd's algorithms made it possible to manipulate the figures based on the edge weights through a fixed number of iterations. At the end of the process we obtained a final illustration of a clustered network structure in which larger labels denote greater levels of fandom, and the proximity of nodes highlights cognate celebrities.

In the figures presented in this paper we have reduced the number of edges that are shown to facilitate understanding. The network illustrations thus created can be interpreted using three perspectives: size of nodes, degree of nodes, and clustering of nodes.

5. Findings

RQ 1 What is the basic topology of the Hungarian 'Celebsphere'? Who generates the most activity?

Creating an activity-based comparison of the celebrity sphere was very difficult. The lack of a common interpretative frame inhibited or overly limited the number of comparable celebrities. Actors and actresses are judged by their movies, musicians by their albums, and athletes by the number of gold medals they have won. These achievements are either not comparable, or only remotely so, so there was no good answer to this question.

In the world of Facebook, where nearly all celebrities and public figures have a page, it becomes possible to create the missing interpretative frame by visualising the structure of Hungarian celebrities based on their fans. Selecting post likes as the main metric for our comparison, we created the dataset required for this analysis.

As we discuss later, determining a basic topology for the celebsphere is not an obvious or easy task. Most celebrities have a presence in different areas of the media and the public sphere, so it is unclear whether any appearance and role is meaningful or current.

To simplify the creation of our topology, we first tried to identify the main 'celebrity factories' in Hungary. Foremost among them are talent shows, other music-related broadcasts, and talk shows, as these have been the most successful TV programs over the past decade. Bands and sport stars are also parts of the celebrity sphere, even though they appear less often on TV (for the detailed distribution, see Table 2).

[3] https://marketplace.gephi.org/plugin/openord-layout/ Accessed: 25-03-2017.

Figure 2 is a detailed illustration of the Hungarian celebrity network. Each celebrity is connected to others based on common fandom. As mentioned earlier, common fandom refers to the number of people who have liked posts on two or more celebrity pages.

In the figure, larger name labels means greater fandom, and thicker edges indicate greater common fandom between two celebrities. As can be seen, nearly all of the celebrities with the greatest audiences have appeared on TV shows at some point in the preceding years, typically as members of a jury, anchors, competitors or cameo guests.

Furthermore, we can see from this figure that the most popular pages are mainly linked to each other with strong ties, while less popular ones cluster around some of the larger ones. From this structure—based on common fandom—we may assume that the larger nodes are the leading celebrity pages, while the smaller ones are the subgroups of the celebsphere.

Returning to the issue of the first appearance vs. the current role of celebrities, we can conclude that the most successful celebrities have a primary profession—usually singers or athletes, as can be seen from Table 2—and take advantage of TV shows and web 2.0 platforms to extend their follower fan base, thereby creating the largest celebrity sites on Facebook.

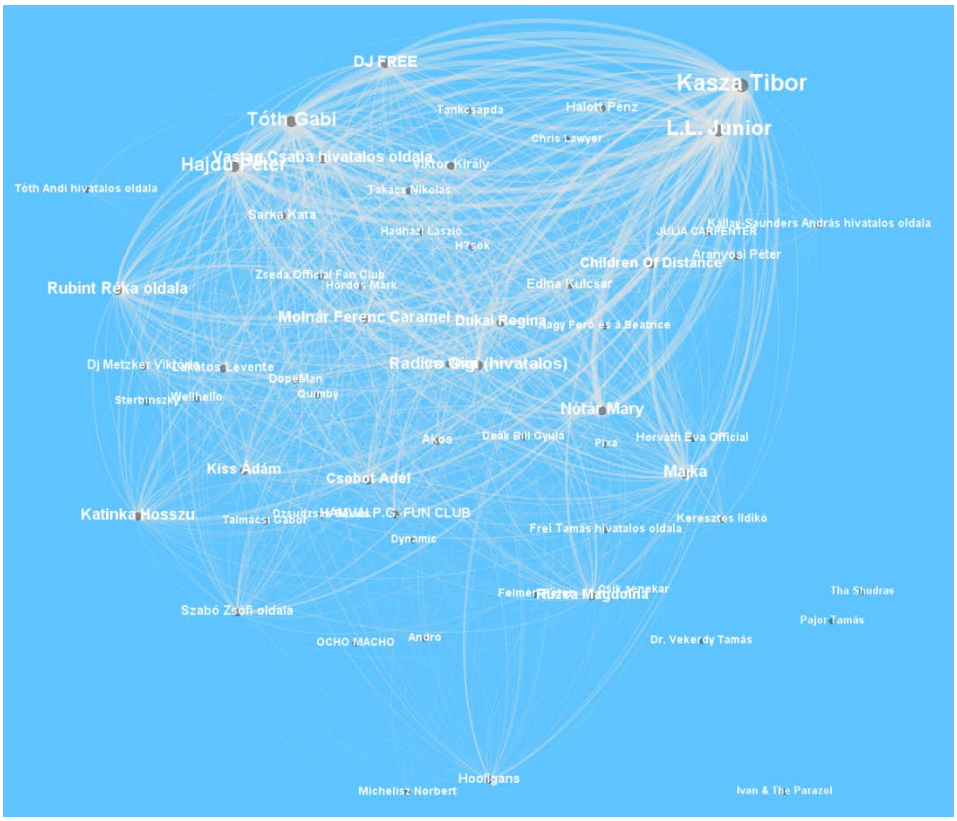

Figure 2: Hungarian celebsphere network based on Facebook fandom

RQ2 Can we observe a trend to 'demotization' in our list? If not, why?

'Demotization' in the present understanding means that, due to digital technologies and social media, there are many grassroots celebrities and amateurs who have achieved considerable visibility mainly through their online activity. However, after the above-described analysis of RQ1, we can conclude that on our list there are no such celebrities. How is this possible? It may be that such 'demotization' is not happening, and popular culture in Hungary is not following global trends. However, this is not the case. Simply examine the list of the most popular YouTube channels (Table 1).[4]

Table 1: Top 10 Hungarian YouTube channels (June 30, 2016)

Channel Name	Views	Subscriptions	Facebook page likes
Videómánia	156 835 055	555 133	304 381
PamKutya	103 847 505	417 791	207 411
TheVR	114 148 070	390 260	70 755
luckeY	86 667 372	371 123	66 362
UNFIELD	66 979 550	356 709	137 597
HollywoodNewsAgency	61 084 994	355 397	133 488
JustVidman	41 381 817	353 393	65 170
Peter Gergely	41 603 456	329 769	19 113
James ツ	76 735 880	285 240	24 797
GoodLike	30 026 030	255 633	103 452

Note that the names on this list do not overlap with those in the celebsphere identified in this research—but the owners of the video channels clearly receive a major share of public attention. Individuals who run video channels that have many tens of millions of views are obviously media stars, and potentially celebrities.

A second potential explanation is that these social media sites (in this case, Facebook and the Google-owned YouTube) maintain separation, not only technologically, but also in terms of celebrities and fans who maintain an almost exclusive loyalty to the respective platforms. This assumption also turns out to be unfounded. In most cases, YouTube's fashion bloggers, preachers, rappers and comedians have a considerable numbers of followers on Facebook as well.

The reason for the surprising lack of stars of Web2.0 in our celebsphere network is due to the method of page identification. As mentioned earlier, we used the celebrity list from the authoritative Socialbakers.com, but it appears that this website largely ignores micro-celebrities, although they may have many followers. We can only assume that Socialbakers defines celebrities in relation to their appearance in

[4] http://starnetwork.hu/youtube-statisztikak/youtube-top100-hu/ Accessed: 25-03-2017.

the mainstream tabloid media, and that micro-celebs just do not crossover to these channels.

Based on these facts we conclude that although the demotization of the celebsphere (the emergence of grassroots celebrities) may be a genuinely relevant issue, we cannot demonstrate the phenomenon using our dataset—so we leave it for later research.

RQ 3 Can we apply traditional typologies to the 'Celebsphere'? Does it make sense to differentiate between ascribed, achieved and attributed types of celebrities?

There have been a couple of attempts in celebrity studies to distinguish between different sources of fame. James Monaco, for instance, distinguished between the Hero, whose fame is established through their achievements; the Star, whose fame has developed through their public persona; and the Quasar, the accidental hero whose fame was created when they became the focus of attention (Monaco, 1978).

Rojek's often-quoted typology is slightly different, although the author also defines three ways of achieving celebrity-status. *Ascribed celebrity* status is based on lineage (for instance, being a member of the royal family). *Achieved celebrity* status is based on achievement and competition (great artists and athletes belong in this category). Finally, *attributed celebrity* status primarily refers to gaining attention through cultural mediation (e.g. the protagonists of reality television shows) (Rojek, 2001).

No doubt these are ideal types in the Weberian sense; i.e. as intellectual constructions that simplify a complex reality, and as such they may be useful. However, applying them to our Facebook celebsphere is rather problematic.

At first sight it is obvious that in our sample we cannot identify either quasars or ascribed celebrities as these individuals do not attract a sufficient number of active followers on Facebook. What is theoretically much more meaningful, though, is the difficulty of applying the categories of 'achieved' and 'attributed' fame, which appear to be rather meaningful distinctions.

Consider as an example two people from our list who may be regarded as the extremes of achieved and attributed celebrity: Katinka Hosszú and Regina Dukai.

Katinka Hosszú is a three-time Olympic champion and a world-record swimmer who has 438 thousand followers on Facebook. Using Rojek's categorization, she would belong in the category of achieved celebrities. However, she has also created the 'Iron Lady' brand, and carries out a well-designed and managed process of communication, both on social and mainstream media. The Iron Lady webshop sells goods such as clothes, vitamins, dietary supplements and Hosszú's auto-biography. She is even the star of a comic book series based on the superhero concept of the Iron Lady. Hosszú can be compared to Danuta Kozák—a five-time Olympic champion and 11-time world champion kayaker who is not even on our list of celebrities, having five thousand followers on Facebook. Both of them are obviously world-class athletes, but Kozák has not built a public brand and lacks Hosszú's marketing acumen.

At the other extreme of the celebsphere is Regina Dukai, a so-called model who is an obvious candidate for the description media-attributed fame, and a good example of a celebrity who is 'famous for being famous'. However, according to her

Wikipedia-page, Dukai has also publicly performed some songs, appeared in a movie and was an anchor on some television shows. This complicates our analysis because there are certainly singers and actresses, even on our list, who one would be inclined to call achievement-based celebrities. Although in the case of Hosszú and Dukai the application of achieved and attributed categories appears to be relevant, reality is not that clear-cut, even in these extreme cases. Unless some kind of normative system of classification is introduced, it is very difficult to say that specific pop singers, football players, actors or DJs are the creation of the media, or have won their fame through achievement. In other words, saturated media representation is so essential to our culture that, in the case of celebrity, achievement and media attribution are often inseparably interwoven.

RQ 4 Can we identify major value patterns among the supporters of celebrities? How do 'green' and 'hyper-consumerist' values appear in relation to the popularity of the celebrities?

In the research described in this paper we sought to identify the different patterns that exist between celebrities and their fandom. By examining their professions, the source of their fame and the links among them, we now compare the related pages to values not directly linked to the celebsphere.

As described earlier, one important feature of post-demographic measurement techniques is their use in addressing questions that were earlier outside the scope of analysis. The relationship between the Hungarian celebsphere, on the one hand, and different values such as environmentalism or consumerism, on the other, is such a question.

In the methodology section we have described the construction of the environmental and the consumer groups which are connected to different public pages. For example, user activity on Greenpeace Hungary's page was considered an indication of environmental interest, and grounds for classifying that user into the environmental group, as illustrated in Figure 4. The consumer group was created using the same approach. Celebrities can be examined through these groups; or, more precisely, the set of values that exist among the celebrities' fan groups. If a celebrity is described as 'low' on consumerism, this indicates that the given celebrity's fandom is less attracted to consumerism on average (i.e. only a small segment of fans like both the celebrities' page and a consumer-related page).

We sought to identify patterns through examining the proportion of environmental and consumer groups among the celebrities' fandom to lead us to a deeper understanding of celebrity culture and the different subcultures within it.

Figure 3: Network of Hungarian celebsphere based on the proportion of fans with consumer values

Figure 3 illustrates the network of shared celebrity/consumer fans. While the edges in Figure 2 represent common fandom (i.e. all the fans) of the linked nodes, in Figure 3 the edges represent shared *celebrity and consumer* fandom. For example, there may be 1276 common fans of two celebrities that potentially can also be classified as consumers—Figure 2 illustrates this situation. Imagine that there are only 697 fans out of the 1276 who can be classified as consumers. The edges of nodes in Figure 3 represent just these 697 consumer/celebrity fans (i.e. non-consumer fans are omitted).

It is clear from the illustration that the different nodes are larger compared to those of the first network illustration (Figure 2). Based on this observation and correlation analysis we conclude that there is a weak negative correlation between the size of a celebrity's fandom and the proportion of consumer followers.

This situation does not support the hypotheses that a positive correlation exists between these two factors, but highlights the fact that the celebrities with the greatest fandom are ranked lowest (in the last 20 places)[5] in terms of the proportion of shared 'consumer' fans (Table 3). Examples of such celebrities include Tibor Kasza, Péter Hajdú, and Mary Nótár.

We may interpret this finding as a consequence of the heterogeneity of the major fan groups. Such heterogeneity is primarily due to the frequent appearances of celebrities in the mainstream tabloid media, and their nationwide fame, which go hand in hand.

As can be sees, the fanbases of some celebrities (with smaller fangroups) are also listed among the last 20 in terms of consumer inclination. This suggests another explanation for the phenomenon based on homogeneity instead of heterogeneity. Such celebrities—for example, Quimby, Andás Laár, Tamás Pajor, and Csík Zenekar—have a well-defined subcultural fan base whose values are pronouncedly anti-consumerist and pro-environmentalist, as discussed later.

Turning to examine the top 20 celebrities according to the shared consumer fanbase ranking (Table 3), another pattern becomes clear. This group mainly includes DJs, rappers, and pop music-related celebrities in leading positions. In music videos which are associated with these individuals, consumerism is often promoted, as well as in the celebrity milieu more generally.

In terms of the environmentally inclined followers of celebrities, the first and most important observation is that there exists a strong and negative relationship between the number of followers in all groups and the proportion of environmental followers. A similar relationship can be identified between consumer and environmental values among celebrity fans. The more followers a celebrity has, the less pro-environmental their audience is, and the more consumer followers a celebrity has, the less environmental their audience will be. The analysis uses proportions rather than the absolute numbers of followers, so these relationships could be explained by the heterogeneous fandoms of the biggest celebrities, but the present authors suspect that subcultural influences play a role, as is also the case with consumer inclination.

Data illustrated in Table 4 reinforce this idea. Most of the celebrities in the pro-environmental top 20 are celebrities who can be classified as belonging to the alternative culture (typically musicians and bands who are less well-known among young audiences but who are successful among younger and older adults), which explains why their Facebook fandoms are smaller. As a result of the negative correlation between environmentalism and consumerism, we find similar celebrities in the environmental top 20 (Table 4) and in the bottom 20 of the consumer list (Table 3); Csík Zenekar and Gyula Bill Deák are good examples of this phenomenon, as is Katinka Hosszú, who appears both in the bottom 20 of the consumer list as well as in the environmental top 20, in spite of the massive size of her fandom (partially overturning our conclusion about the existence of fandom heterogeneity).

[5] These rankings are based on the percentage of existing consumers (Table 3) or environmental (Table 4) fans of celebrities. We assigned a percentage to all celebrities – calculated as the number of consumer or environmental fans / number of all fans – and used these to rank them. On the left side of Tables 3 and 4 we display the celebrities with the highest percentages (and on the right side, the lowest).

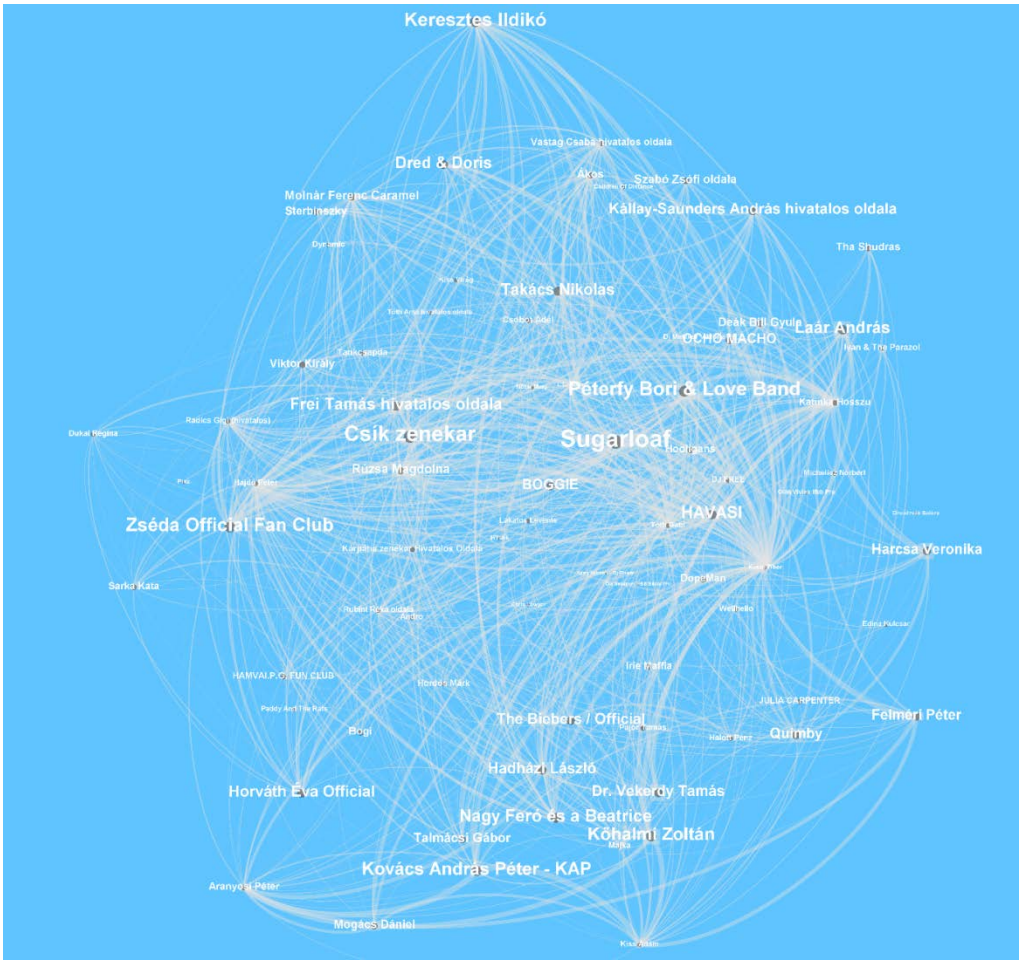

Figure 4: Hungarian celebsphere network based on the proportion of fans with environmental values

6. Conclusions

In this paper we have outlined some of the characteristics of the Hungarian celebsphere. In addition, we sought to prove that social media data in the era of the post-demographic paradigm can be very useful. Despite all the differences with traditional methodologies, the use of post-demographic digital methods opens up the opportunity to pursue new approaches. In the empirical part of the research described in this paper we addressed four questions which could not be answered (or not well) using traditional methods from within the demographic paradigm. The first question concerned the basic topology of the Hungarian celebsphere and activity generation. We provided a network illustration of the most well-known Hungarian celebrities within which big hubs and small subgroups could be identified (with hubs playing the leading roles). The conclusion was that most of the celebrities with the biggest Facebook pages have been successful due to TV appearances and have a very a structured Facebook presence, which is indispensable in terms of their fame.

The second question dealt with 'demotization' which relates to the role and presence of grassroots celebrities. We consider the phenomenon of demotization to be a genuine and important issue, although it could not be incorporated into the present research. The third question related to how to typologise the celebsphere. We categorize named celebrities based on the typologies of Monaco and Rojek. As mentioned, their theories are limited when it comes to dealing with current Hungarian celebrities, but by using interpretable categories we introduced a typology through examples.

The final research question dealt with different values such as environmentalism and consumerism from the perspective of celebrity fandom. We conclude that the size of celebrity fandom and the proportion of consumerist followers is negatively correlated, which may be due to the heterogeneity of fans. Celebrities with the most environmental fans tend to be a part of alternative culture.

A yearning for fame, as Andy Warhol observed, seems to be a universal characteristic of our time. The structural reasons for the development of a culture of celebrity are deeply rooted in our late modern societies. One explanation is that the commodification inherent to capitalist economies always needs new celebrities to stoke consumer desire. Another argument is that the need for celebrities stems from the fundamental flaws of liberal democracy. Democracy suggests equality—and the formal provision of equal political rights. In reality, however, social roles and the individuals who play these roles are rather differentiated and hierarchal from a material, symbolic and power perspective (Rojek, 2001). This tension between the declared 'rhetoric of equality' and the 'reality of unequal life possibilities' may be the basis for a longing for the extraordinary: the cult of celebrity. Whatever structural features explain our celebrity culture, it seems certain that it will remain a dominant force after whatever fragmentation and decentralization of the cultural sphere occurs due to the growing importance of social media.

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Appendix

Table 2: Celebrity Facebook page - Like rankings

LIKE - top 20 celebrity	Category	LIKE - last 20 celebrity	Category
Kasza Tibor	singer	The Biebers / Official	musician
L.L. Junior	singer	Sugarloaf	musician
HajdúPéter	broadcast star	Kovács András Péter - KAP	actor
Tóth Gabi	singer	Ivan & The Parazol	musician
Nótár Mary	singer	BOGGIE	musician
RubintRékaoldala	sport star	Bogi	singer
Radics Gigi (hivatalos)	singer	PajorTamás	singer
KatinkaHosszu	sport star	KárpátiazenekarHivatalosOldala	musician
DJ FREE	DJ	IrieMaffia	musician
Vastag Csaba hivatalosoldala	singer	Dynamic	musician
Majka	singer	DiaSalamon IFBB Bikini Pro	sport star
Kiss Ádám	actor	HAVASI	musician
Rúzsa Magdolna	singer	Oláh Vivien Ifbb Pro	sport star
Molnár Ferenc Caramel	singer	Paddy And The Rats	musician
Dukai Regina	fashion star	OCHO MACHO	musician
Children Of Distance	musician	FelmériPéter	actor
Ákos	musician	ViragVoksan - Dj Flower	DJ
CsobotAdél	singer	PéterfyBori& Love Band	musician
HAMVAI.P.G. FUN CLUB	singer	Hadházi László	actor
AranyosiPéter	actor	HordósMárk	sport star

Table 3: Celebrity Facebook page - Consumer fandom ranking

CONSUMER - top 20 celebrity	Category	CONSUMER - last 20 celebrity	Category
Dynamic	musician	Paddy And The Rats	musician
HordósMárk	sport star	Ivan & The Parazol	musician
Pixa	musician	PajorTamás	singer
Horváth Éva Official	broadcast star	Deák Bill Gyula	singer
Sterbinszky	DJ	Nótár Mary	singer
Bogi	singer	Quimby	musician
Sugarloaf	musician	L.L. Junior	singer
Sarka Kata	fashion star	KárpátiazenekarHivatalosOldala	musician
Kiss Virág	sport star	LaárAndrás	musician
Kállay-Saunders Andráshivatalosoldala	singer	Tankcsapda	musician
SzabóZsófioldala	actor	KatinkaHosszu	sport star
JULIA CARPENTER	DJ	Csíkzenekar	musician
Wellhello	musician	BOGGIE	musician
Andro	DJ	Radics Gigi (hivatalos)	singer
DJ MetzkerViktória	DJ	Ákos	musician
Chris Lawyer	DJ	Tóth Gabi	singer
The Biebers / Official	musician	Michelisz Norbert	sport star
Oláh Vivien Ifbb Pro	sport star	Rúzsa Magdolna	singer
Hősök	musician	Kasza Tibor	singer
Molnár Ferenc Caramel	singer	HajdúPéter	broadcast star

Table 4: Celebrity Facebook page - Environmental fandom ranking

Environmental - top 20 celebrity	Category	Environmental - last 20 celebrity	Category
Csíkzenekar	musician	ViragVoksan - DJ Flower	DJ
LaárAndrás	musician	DiaSalamon IFBB Bikini Pro	sport star
Frei Tamáshivatalosoldala	broadcast star	Chris Lawyer	DJ
PéterfyBori& Love Band	musician	DzsudzsákBalázs	sport star
Quimby	musician	Children Of Distance	musician
HAVASI	musician	Tóth Andi hivatalosoldala	musician
Kovács András Péter - KAP	actor	Nótár Mary	singer
Hadházi László	actor	Pixa	musician
Nagy Feróés a Beatrice	musician	Dynamic	musician
KeresztesIldikó	singer	DJ MetzkerViktória	DJ
Sugarloaf	musician	L.L. Junior	singer
Zséda Official Fan Club	singer	Hősök	musician
Rúzsa Magdolna	singer	Oláh Vivien Ifbb Pro	sport star
Deák Bill Gyula	singer	Edina Kulcsar	fashion star
BOGGIE	musician	Andro	musician
KatinkaHosszu	sport star	Dukai Regina	fashion star
FelmériPéter	actor	Kiss Virág	sport star
PajorTamás	singer	Majka	singer
Ákos	musician	Wellhello	musician
IrieMaffia	musician	Bogi	singer

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Seasonality Pattern of Suicides in the US – a Comparative Analysis of a Twitter Based Bad-mood Index and Committed Suicides

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Abstract

Is it possible that a general negative social climate exists, which, on the one hand, manifests itself in the number of suicides committed, and on the other hand, appears in the content of tweets posted on social media? In this paper, we are attempting to identify the seasonal and weekly patterns of suicide-related tweets and compare them with similar data that shows the ratios of committed suicides in the US. For this work we used the data stream freely provided by the online social networking site Twitter to collect geo-located tweets in the US.

In order to calculate the negative mood Twitter–index three terms (words) were used related to suicide (suicide) and bad mood (depression, depressed). The raw daily occurrences of these three words were summarised and then divided by the number of all geo-located daily tweets in the US collected in the framework of the project.

The weekly fluctuation of the temporal distribution of suicides and the ratio of bad mood messages on Twitter fit together well. Tweets show a deterioration of mood on Sundays more intensely; this tendency is more moderate in suicide data. Monthly data, however, are much more challenging to interpret, since the fluctuations show a completely opposite tendency than we expected. We present two possible explanation for this unexpected result.

Keywords: Suicide; Seasonality; Bad-mood; Big Data; Twitter.

1. Introduction

The use of Big Data creates numerous new opportunities to analyse and to understand the mechanisms of the social world (Lazer et al., 2009). However, there are also many questions about the utilisation of this kind of data. In most cases (especially when using online data), the lack of external validity is one of the main concerns (Lewis, 2015). In a field as young as this one, it is useful to compare the results with other well-known social trends: if the results based on this kind of data are comparable with the earlier results based on traditional techniques that have more external validity, we can get closer to understanding the validity of the data source better. In this paper, we are attempting to test this kind of validity using a case of suicide-analysis in the USA, in particular by comparing data about the population with data obtained from the online social networking site Twitter (which we can consider as Big Data). It is important to note that this study is not the first in connection with this topic.

A paper from 2014 (Jashinsky et al., 2014) analysed the spatial correlation of suicide and tweets about suicide. They found that the emotional charge of Twitter messages and the suicide rates in the population show significantly similar spatial patterns in the territory of the United States. We are looking for the same correlation, but in the variation of time. Necessarily we do not suppose, that the people who commit suicide, are the same people who show negative emotions on Twitter, we only hypothesise that there is a general social and emotional climate that changes in space and time. This climate affects both Twitter messages and the number of suicides. Therefore, we do not think that the correlation between the two phenomena implies a cause and effect relationship, but we applied a causality-scheme, in which there is a common cause of the emotions that appear in the Twitter data and also of the number of suicides.

It is a well-known phenomenon in suicide research that the incidents of suicide follow a clear seasonal pattern. There are minor differences between countries, but the main trend is that the ratio of suicides is high in the spring and summer, and low in the winter (Warren, Smith and Tyler, 1983; Massing and Angermeyer, 1985; Corcoran et al., 20014; Zonda, Bozsonyi and Veres, 2005). There is also a strong weekly pattern: the risk of suicide is high on Mondays and much lower at the weekends (Massing and Angermeyer, 1985). In this paper, we are attempting to identify the seasonal and weekly patterns of suicide-related tweets. We are using geo-located tweets that have been collected by the Department of Physics of Complex System of Eötvös Lorand University, Budapest since 2012. Using this data, we can compute the seasonal and weekly patterns of suicide-related tweets and compare them with similar data that shows the ratios of suicides committed in the US.

2. Twitter in Social Sciences

Several studies have been published in recent years where data from Twitter was used in different social science analyses. Some of these studies used Big Data techniques while others did not. We would like to review a few important studies which have used the Big Data approach below, as we believe they illustrate the applicability of Twitter data for the purposes of social sciences quite well. These studies involve different research areas, but those conducted about health behaviour, public opinion and social network aspects appear to be the most prominent.

Paul and Drezde (2011) analysed more than 1.5 million health-related tweets. The temporal and spatial distribution of illness and symptom-related posts had strong correlations with the population data published by health authorities. Having analysed the posts of 210 000 Twitter users, Abbar, Mejova, and Weber (2015) found that daily calorie intake figures calculated on the basis of meal-related posts have 0.77 correlation with obesity index figures broken down by states in the US. With the help of data from Twitter, is was possible to come up with a better model for obesity and diabetes distributions at the level of counties. Mitchell et al. (2013) also published analyses in connection with lifestyle; they collected 80 million words of Twitter posts from the US. They examined the co-occurrence and correlations of words with the help of large-resolution spatial databases. They discovered interesting relationships between the contents of Twitter posts and the lifestyles of citizens living in different region of the US.

Dodds et al. (2011) developed an alternative survey method drawing exclusively on Twitter data. They argue that their results are in line with those deriving from traditional survey methods. Jahanbakhsh and Moon's (2014) study should also be mentioned in connection with survey methodologies, as having analysed 32 million Twitter messages before the 2012 presidential election they found that Obama's popularity trend and his expected victory could be accurately traced and predicted based on Twitter data.

There are two recently published studies, which are excellent examples of social network analyses. These analyses are particularly important with regard to the current study because they are based on the same Twitter database that has been used in our study. Szüle et al. (2014) replicated one of the most famous experiments of sociology, Milgram's small world project, on a social graph generated from the network of Twitter users. Having analysed the network of 6 million geo-located Twitter users, they found that in general any user can be reached in 3 to 6 steps starting from any other user. It is a novel finding, however, that the topology of networks within and across cities differs significantly. Kallus et al. (2015) also published a study on social networks, where the authors analysed the networks of 5.8 million geo-referenced Twitter users on a global scale. Their most important finding was that despite the fact that the network is global, actual relationships emulated the regional structure (administrative units) of societies.

As the above-mentioned examples show it clearly, the use of Big Data deriving from social media content is increasingly popular in social science. This phenomenon is reflected by the fact that in 2014 a new journal was released by Sage, titled Big Data and Society. The handling and analysis of this kind of data and also the opportunities

offered by it are different from classical survey data, which is what is usually employed by social scientists. National or international representative samples are believed to have high external validity[1]. The generalisation of the results from Twitter or other social media analyses is more problematic. Although there are scientific papers that try to investigate the user-population of these online applications (Pennacchiotti and Popescu, 2011; Sloan et al., 2015; Culotta, Ravi and Cutler, 2015), we do not have precise knowledge about the composition of Twitter users and far less about those who make their profile public and are, therefore, researchable[2]. However, the internal validity of Twitter and other social media data is higher, as this data was not created for research; research is only an additional possibility. Intentional distortions in the answers or the effect of the interviewer do not pose problems during the analysis; we get more honest data. Nevertheless, because of the same reason – it is not primarily created for research – the data is not clear, it is almost always noisy, so researchers have to put more effort into the cleaning process. However, the most important aspect for our paper is the role of time in this data. When analysing (inter)national representative surveys, researchers mostly work with cross-sectional data. Even longitudinal studies have limited time-points, so time can only be handled as a discrete variable in most social research. On the contrary, we can collect Twitter data every second, so it is possible to treat time as a real continuous variable and examine trends and returning patterns. As we will discuss later, we would like to detect a climate that has an effect on people's moods, and as we know that there are seasonality and long-term trends in this climate, the time-based opportunities of Twitter data are absolutely essential in our research.

Although we have emphasised the differences between big social data and survey data, it is equally important to note that the methods and concepts of analysis are not radically different compared to the ones used on survey data. Of course, because of the high number of cases and low external validity, significance tests should be used with caution[3]. Nevertheless, aside from some statistical and technical issues, the concept of the analysis is not radically different. Moreover, it is essential to keep in mind social scientists' conceptual approach when they are analysing massive datasets. Although the statement 'it does not matter why it works, it only matters that it works' is popular among data scientists, the ability to ask good questions and the confirmatory analyses of theories are necessary if we do not only want to understand how social processes work, but we also want to explain them. Thus, this new type of data does not annul previous knowledge but subjects it to new ways of applications and challenges. In the latter part of this paper, we also use classical methodological concepts, for example Lazarsfeld's theory of indicators, correlation analysis, ANOVA, etc.

[1] It is important to keep in mind that refusing to answer and substitutions also make the sample and external validity biased.

[2] The reliability of the data in the profiles is also questionable in some cases.

[3] If we want to know whether educated people earn less or not, this cannot be tested validly on Twitter data using the significance levels of statistical tests because we do not know the population to whom the results of these tests apply.

Because of the reasons above, Twitter data is not really suitable for the exact measurement of social phenomena or making predictions (Gayo-Avello, 2012; Lazer et al., 2014), but it can be considered more of a measurement of latent mood.

3. Seasonal pattern of suicide

The change of seasons induces different organic, behavioural, and psychological changes in people living in the temperate zone. These changes are, on the one hand, adaptive/maladaptive responses of the organism, in particular of the nervous system, to the environmental changes brought about by the change of seasons. On the other hand, as a result of the seasonal embeddedness of social life (what Emil Durkheim called changes in the dynamic density of society), seasonal changes also have an effect on human behaviour, besides psycho-somatic factors, through different social factors.

It is an old observation that self-destructive deeds reach their peak in the springtime and early summer months, while the lowest number of suicides are committed in the late autumn and winter months. This phenomenon can be witnessed in both hemispheres of the globe (Warren, Smith and Tyler, 1983; Massing and Angermeyer, 1985; Corcoran et al., 20014; Zonda, Bozsonyi and Veres, 2005).

There are essentially two paradigms that aim to explain the distinct yearly seasonal fluctuation in the incidence of suicides. Representatives of the neuro-psycho-biological approach believe that the biological effects of certain environmental parameters (sunshine, temperature, air pressure, etc.) resulting from the change of seasons might be held responsible for the seasonal changes in suicidal behaviour. The socio-demographic approach, on the other hand, disputes the exclusive validity of the biological explanation on the grounds that seasonal fluctuation is strongly influenced by several psycho-social and social variables, for example, age, gender, settlement type, social status, and days of the week. The significant effect of the different days of the week is particularly interesting (the number of suicides is high on Monday and low over the weekend), as there are obviously no systematic changes in atmospheric-environmental parameters linked to the days of the week. Social life, and thus the dynamics of social relations, are, however, significantly influenced by the days of the week. Therefore, it can be hypothesised that the systematic changes observable in the number of suicides during the week are caused by weekly fluctuations in the dynamics of social relations. These social relations and also reflections on social reality should be tangible through various social network channels. In the next section, we will focus on this particular aspect.

4. Suicide and bad-mood in tweets - conceptual background

We have so far reviewed Big Data studies that have been published in the field of social sciences in recent years. We drew attention to those aspects of validity that need to be addressed when analysing Twitter data and suggested social phenomena that might be in the background of the seasonal fluctuation of suicides. In the next section, we are going to shed light on how Twitter-based sentiment analysis could be linked with the temporal dynamics of suicides.

In our analysis, we looked for Twitter posts with geographical reference to the United States, which contain words referring to negative emotional states and/or suicide/depression.

The population prevalence of suicide is fortunately approximately only a dozen people for 100 000 inhabitants; therefore, it is quite unlikely that we would come across the Twitter post of a person planning actual suicide. Nevertheless, we have reasons to believe that the general emotional climate, which in certain cases might induce suicidal behaviour among those susceptible, probably also affects those not planning to commit suicide. Therefore, its indirect effect might be detectable in the emotional load of Twitter posts (in connection with a similar mechanism see Eichstaedt et al., 2015).

This negative affective conditioning must be particularly strong if it is to appear on social media surfaces since it is a well-known fact that social media users are likely to present a picture of themselves and their environment which is more positive than reality (Stenros, Paavilainen and Kinnunen, 2011). Social media, therefore, act as spontaneous filters, which only allow the display of the effects of the negative emotional-mood climate if this exceeds a certain threshold. Therefore, it can be expected that the lowest points in the fluctuation of collective emotions will also be present in Twitter users' posts.

Beyond the proposed theoretical and principle-based arguments, there are two more specific indications that suggest Twitter messages expressing negative emotional states probably display a pattern similar to that of suicides committed.

In their study, Jashinsky et al. (2014) examined the spatial distribution of Twitter messages with negative emotional loading within the US and compared it to the spatial distribution of suicides, and they found significant correlation between the two. Based on the similarity of the spatial patterning of the two distributions, we are also expecting to find similarities in temporal fluctuation. We are hoping to reveal similar temporal fluctuation in our present study. Cody et al. (2016) in their article titled *Public opinion polling with Twitter* examined the relative frequency of several thousands of words appearing on Twitter over a period of seven years. The monthly relative frequency of the word 'happy' over the seven years examined displays the reverse tendency of the aggregated monthly occurrence of suicides committed. Based on this result, it can be assumed that words related to negative emotional states might display a seasonal pattern that is in line with the occurrence of suicides.

5. Data and methods

We used the data stream freely provided by the online social networking site Twitter through their Application Program Interface (API) that allows the downloading of approximately 1 per cent of all publicly sent messages (tweets).[4] In this study, we focused on that part of the data stream where the actual location of the user is indicated clearly. These so-called geo-located tweets originate from users who chose

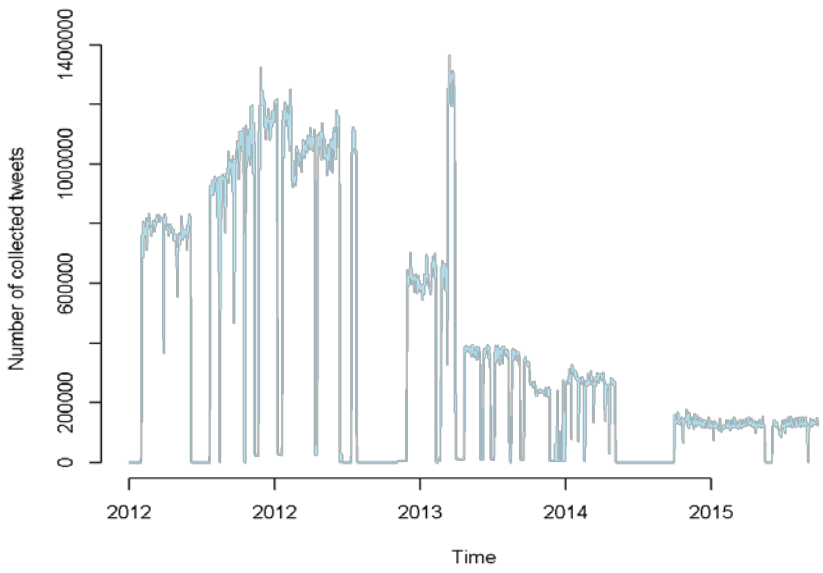
[4] For the 1% rate of Twitter messages, see one Twitter employee's comment on the official twitter community forum: https://twittercommunity.com/t/is-there-a-limit-to-the-amount-of-data-the-streaming-api-will-send-out/8482 Accessed: 25-03-2017.

to allow their mobile phones to post their precise GPS coordinates along with a tweet. The total geo-located content was found to comprise only a small percentage of all tweets; therefore, by applying data collection focussing only on these, a large fraction of all geo-tagged tweets can be acquired (Morstatter, Pfeffer and Liu, 2013).

More than 626 million geo-located tweets were collected between 2012 February and 2016 August from the United States of America. Tweets were marked as coming from the USA if their longitude fell between -130 and -70 degrees and their latitude between 24 and 52 degrees. The messages and their metadata were organised into a large relational database that enabled fast and efficient querying (Dobos, 2013) at the Department of Physics of Complex Systems of Eotvos Lorand University, Budapest.

Although this is a large amount of data, the daily frequency of tweets was far from uniform. The number of sent tweets in the US increased over the given period of time, but the number of collected tweets decreased (seeFigure 1). One reason for this might be a change in the algorithms of the Twitter API, which was used for the data collection. The exact algorithm is hidden from the users, but it is known that Twitter sometimes makes changes in the tweet sampling processes (Felt, 2016). The applied data collection design has also changed over the period at the university. In order to enable them to answer special research questions, the researchers altered the technical details of the downloading process. Besides this, data collection on ELTE servers also stopped many times because of different reasons (e.g. blackouts in the electricity system).

Figure 1. Number of geo-located tweets in the US on a daily basis



To handle the latter problem, all the days where the number of collected geo-located tweets was under 35 000[5] were omitted from our analysis. Consequently, although the entire time period from February 1st, 2012 to August 31st, 2016 contained 1705 days, 514 days were dropped due to this reason.

In order to calculate the negative mood Twitter–index, suitable and reliable indicators had to be found. Initially five terms (words) were selected to create the index, these were related to suicide (suicide), bad mood (depression, depressed), and pills used to alleviate depression (Prozac, Zoloft). In this selection, we relied on Jashinsky et al.'s (2014) paper, but instead of searching for long terms, we focussed on unique words.

Table 1 List of search words, and stop words applied

Search term	Stop words	Initial number of tweets	Used number of tweets
suicide	Attack, bomb, bomber, squad, Williams	81638	66538
depression	Economic, concert	59770	52689
depressed		142781	137442
Prozac	LilMiss, Bananas, Clause	1747	1614
Zoloft		672	652

Naturally, not all the filtered tweets related to bad/negative mood, so our data was quite noisy; therefore, this noise level had to be decreased. For this, we attempted to identify stop words that signal different meanings in tweets. We created word-clouds from all tweet contents based on the frequency of the words in all of the selected tweets. Then, in the case of every selected word, we tried to identify unusual words in the word-clouds. Sometimes these stop-words were obvious (like 'bomb' in the case of 'suicide'), but there were also other surprising findings[6].

Another problem that had to be handled before starting the analysis was that not all the users were persons; institutions can also use Twitter, and some of these institutions tweet very often. Therefore, all the users who had more than 10 tweets per used search words were omitted from our further calculations. After these omissions our data was still noisy, but the quality was much better[7].

In the next step the data was aggregated at the daily level, so the occurrence of any given word in the tweets was counted per day. As we pointed it out earlier, the data generating and collecting algorithms were changed many times over the data

[5] The threshold level applied was 10% of the number of average daily tweets.

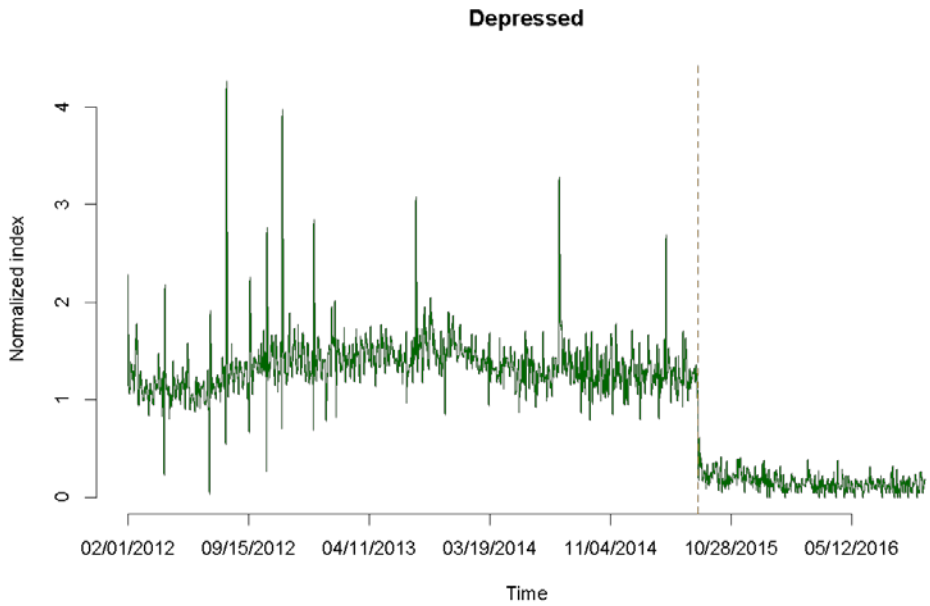
[6] 'Clause' (as in Santa Clause) could be cited as one of the interesting findings since it is not straightforward how this word relates to Prozac. The solution is probably quite obvious for those who are familiar with the famous 'Friends' TV sitcom, as there is a scene in it when Phoebe (one of the main characters) ends a discussion with the following sentence *'You are like Santa Claus on Prozac, at Disneyland, getting laid.'*

[7] Obviously not all the tweets were related to suicidal thoughts, but there were many which were exactly tweets about suicide. Here are some examples:
'I just found out one of my old friends tried to commit suicide I feel sick', or 'Strong sense of suicide, I really wanna quit.', or 'Planning my suicide, writing my letter. #whocares #nobody #endingthispointlesslife', 'I'm depressed and I've learned to accept it. Goodnight world.', 'I've never been this depressed everything's falling apart.'

collection period. To handle this issue, the number of daily tweets for each word was divided by the total number of geo-located daily tweets in the US collected in the project. After this normalisation, the average daily tweet number was fitted to one. So for every day, we had the relative importance of the words, compared to the whole US geo-located dataset. This latter standardisation method might help in the comparison of the different search terms. However, the analysis of normalised indices revealed some further problems.

As could be seen in the time sequence of the normalised 'depressed' search term, there were some very high peaks in the given period. These peaks usually signal a special event or a unique happening in society. This could be a film premiere (e.g.: Suicide squad), a death (suicide) of a famous person[8] (e.g.: Robin Williams), or a suicide in a TV-show. As mentioned earlier, we had identified some stop words in the initial phase of the project to handle these special events during the period. Despite our efforts, this filtering was not perfect; some peak days still remained in the time series. To increase the reliability of our indices, all these outlier days were filtered out from our analysis[9].

Figure 2. Normalised index of the occurrence of the word 'depressed' on a daily basis



[8] There is a tendency, that after the suicide of famous people, suicide rate increases due to imitation (Philips, 1974). But as we would like to track the general trends and patterns and not the unique ones, we decided to omit these days from the rest of the analysis.

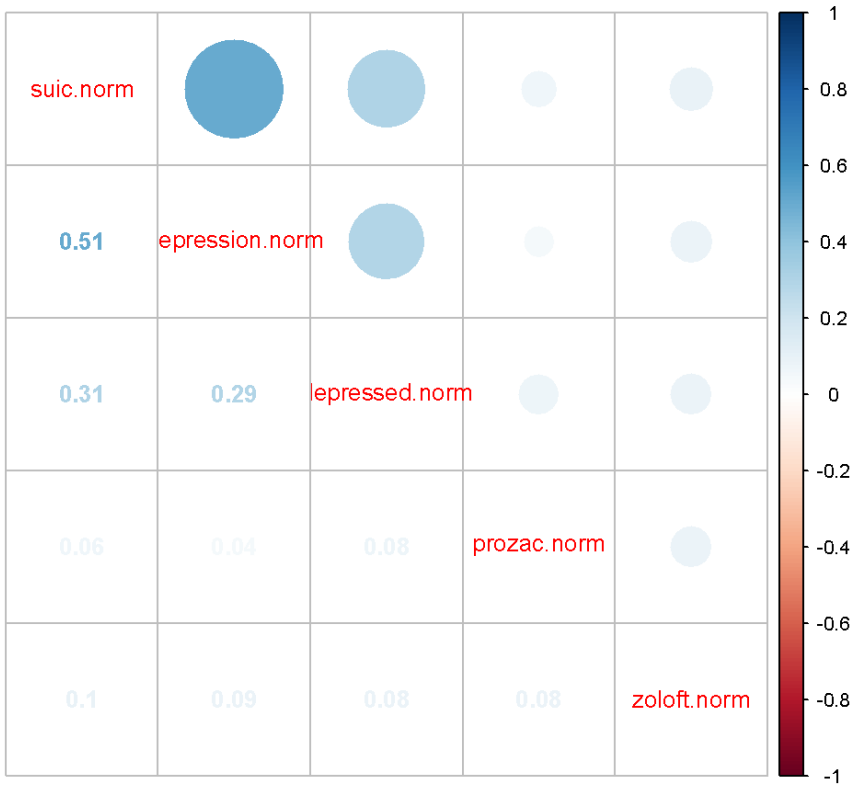
[9] We filtered out all those days where any of the normalised indices were higher than 3.

There was another anomaly in the time sequence. The mean level of daily normalised tweets suddenly dropped in the case of all indices. The volume of decrease varied between the indices (e.g.: it was higher in the case of 'depressed' than in the case of 'suicide' – see Figure 6 in the appendix). This change could be hard to explain, as these indices were all normalised to the number of daily tweets. The turning point is April 2015, so we needed to search for explanations within this time period. We hypothesised that this could be related to a change in the API, or also to a change in the data collection process. In the end, we decided to disregard all the days after this event, as the process of generating the available tweets probably differs in the two time periods. Finally, 838 days remained in our analysis. During the above data validation processes, nearly 20 percent of the tweets containing the word 'suicide' were filtered out, but this rate was only around 4 percent in the case of the word 'depressed'.

If we assume that all the five search words are related to the same phenomenon – bad mood – then the daily frequency of these indices has to be strongly correlated with each other.

The correlation matrix of the five normalised time series (Figure 3) clearly shows that the daily distributions of the words 'Prozac' and 'Zoloft' are independent of the others. This suggests that these terms were too rare to be included in our calculations. Therefore, we decided to leave out these two indices from our further analysis. The correlation between the other three variables was significant: strong between 'suicide' and 'depression', and average between 'depressed' and the other two words. In order to create our negative mood index, the raw daily occurrences of the three words were summed and then divided by the number of all geo-located daily tweets in the US collected in the framework of the project. The bad-mood index was also balanced to mean equal to one, in order to assist further interpretation.

Figure 3 – (Graphical) Correlation matrix of the normalised occurrence of the five search words on a daily basis



In order to calculate statistics for the suicides committed in the US, we used the CDC WONDER Online database[10]. The database contains information about multiple causes of death between 1999 and 2014. We filtered the data to include death caused by suicide only. In some cases the day of the suicide was missing, so we omitted those cases from our further analysis. Over these 15 years, 560 000 suicides were committed in the US, and the yearly suicide rate increased by nearly 30 percent between 1999 and 2014.

For reasons of anonymity, the exact number of suicides committed daily cannot be extracted from the database; therefore, we needed to use data aggregated by days of the week. Thus, we have no precise knowledge about the exact number of suicides on 7 February 2002 for example, but we know the total number of suicides in February 2002 for each day of the week (e.g.: the total number of suicides on Wednesdays in February 2002). In order to suit our analytic aims, this data form needed to be

[10] Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2014 on CDC WONDER Online Database, released 2015. Data derives from the Multiple Cause of Death Files, 1999-2014, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Available at: http://wonder.cdc.gov/ucd-icd10.html Accessed: 18-08-2016.

normalised. We created two types of databases, one for the days of the week, and one for the months. In the case of the days of the week, the total number of suicides was divided by the number of that specific day of the week in that particular month. As there was a clear increasing tendency in the number of committed suicides, the data also had to be normalised with the yearly trend. In the case of months, the data was aggregated to months on a yearly basis (using the sum function), and this number was divided by the number of days in that month. This data also needed to be normalised by the yearly trend of suicide.[11] As the usual Twitter users are probably younger than the average US population we also calculated the above mentioned suicide statistics for the 15-44 age cohort. As the days of the week and monthly distributions of suicides did not differ in the case of the 15-44-year-olds and the entire population, the 15-44 subpopulation data was not used in further parts of the paper.

6. Results

6.1 Days of the week

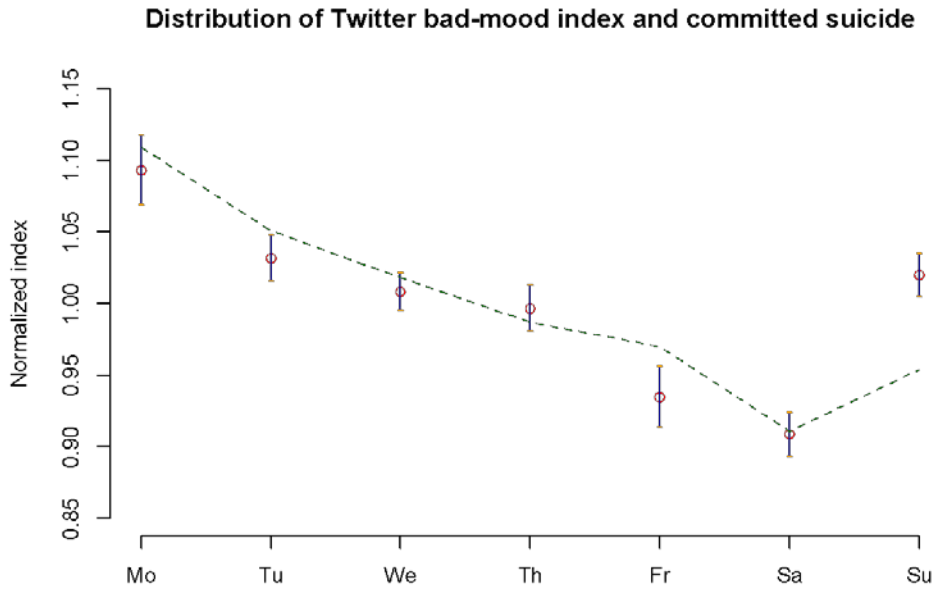
When analysing suicides committed between 1999 and 2014 in the US, a weekly fluctuation is easily identifiable. On average, most suicides were committed on Mondays, which is followed by a decreasing tendency reaching its lowest on Saturday. Thus, the number of suicides decreases as Monday is getting more distant and the weekend is approaching. On Sundays a slight upward correction can be witnessed, that is the suicide rate on Sundays is slightly higher than on Saturdays, but is it still lower than the figures measured on Fridays. The difference between the days is significant ($p=0.00$ on ANOVA tests)[12], and the difference between the highest and lowest figures is 21 percent.

The negative emotional climate identified on the basis of Twitter data displays a very similar distribution over the course of the week. From the high value characteristic of Mondays, the number of tweets suggesting bad mood decreases significantly by Tuesday and stagnates at this lower level until Thursday. On Friday, another change can be witnessed in the emotional climate, the number of bad mood tweets decreases even more, reaching its lowest on Saturday (although the difference between Saturdays and Sundays is not statistically significant). On Sunday, a rebound can be observed in the Twitter negative mood index; the number of negative tweets jumps to the level characteristic of the middle of the week. On the next figure, a dotted line indicates the temporal fluctuation of actual suicide data, while error bars show the daily averages of the bad-mood index and their confidence intervals.

[11] This normalisation was done, because when we analysed the Twitter data, we used the same methodology. For that very reason, the normalisation of the population data was necessary for the comparison of the two datasets. (We also checked the weekly and monthly population trends without the normalisation procedure, and we found that the results were similar to the ones that we present in this paper.)

[12] From a theoretical perspective, in the case of twitter data it is appropriate to use significance tests. In the case of suicide data the situation is more complicated, as we have full data, not just a sample. But from Bayesian perspective it is an acceptable viewpoint to calculate significance values. On the other hand, because of the large sample size, we used higher significance-levels in the analysis: instead of the general 0.05, we applied a level of 0.001.

Figure 4 - The weekly fluctuation of suicides committed in the US (green, dotted line), and the variation of the bad-mood index (error bar)



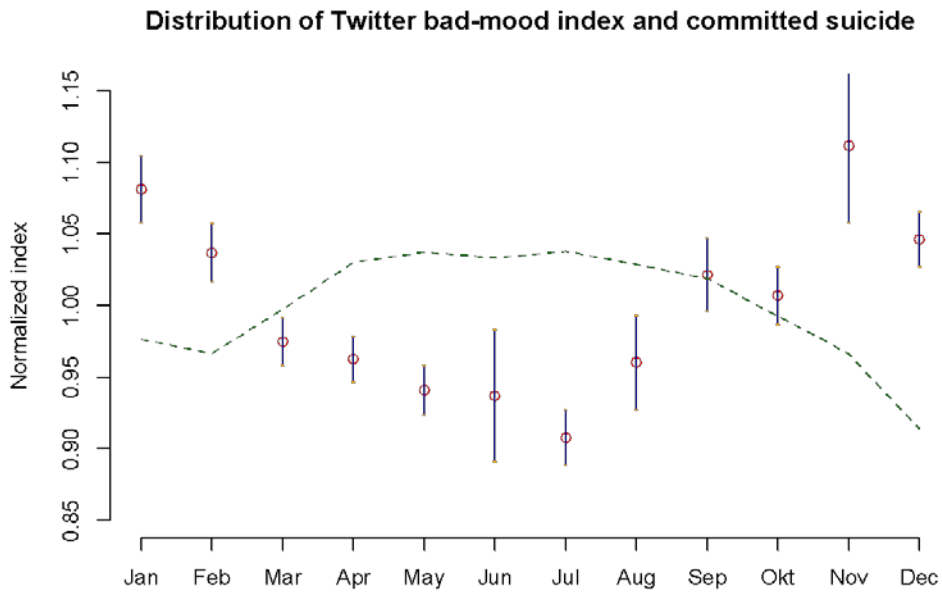
The figure displays the similarity of the two temporal distributions well. The most remarkable difference can be observed in the values for Sundays. The mood of average American Twitter users is already starting to deteriorate by Sunday based on the words analysed, but this can hardly be witnessed in actual suicide rates.

Although the statistical relevance of correlation is quite limited when calculated on such a low number of cases (N=7); for the sake of illustration, we would like to note that the correlation between the figures was 0.87, which means that there is a strong and positive relationship between the social network and the population data.

6.2 Months

The monthly fluctuation of committed suicides follows the trend that can be expected based on the literature, which we have already described above[13]. The index starts from the base value of under one in January, and it decreases ever further in February (it is hypothesised that Valentine's day might contribute to this effect[14]). After this, the number of suicides starts to increase, and it stagnates from April until July at a relatively high value. Afterward that, the number of suicides starts to decrease only slowly at first, then quite rapidly, reaching its lowest value in December. Seasonality over the months is less marked than within the week, the difference between the maximum and minimum values is 'only' 14 percent.

Figure 5 - The monthly fluctuation of committed suicides in the US (green, dotted line), and the variation of the bad-mood index (error bar)



The fluctuations in bad mood climate reconstructed on the basis of Twitter data seem to be moving in opposite directions from suicides. Winter months (from November till January) can be characterised by relatively more frequent negatively loaded tweets (November is especially outstanding). In the months of transition (February, September, October) negative tweets are relatively fewer (but their number

[13] Some researchers investigating the relationship between suicides and antidepressants argue that taking medication could weaken or might even eliminate seasonality from suicide time series (Sebestyen et al., 2010). American data provide no support for this hypothesis, what is more, between 2012 and 2014 findings suggest even stronger seasonality effects.

[14] In connection with holidays see also: Zonda et al., 2009.

is still above average), while in the other months, and especially in the middle of summer, this figure reaches its minimum. The correlation between the fluctuations of the two indices is -0.78.

7. Discussion

In our study, we attempted to find answer to the following research question: Is it possible that a general negative social climate exists, which, on the one hand, manifests itself in the number of suicides committed, and on the other hand, appears in the content of tweets posted on social media? Researchers analysing the spatial aspects of this question (Jashinsky et al., 2014) came to the conclusion that it is possible to hypothesise and identify such a climate. In our current study, we attempted to grasp the dynamic, temporal aspect of this question, but our results fail to provide a straightforward answer. The weekly fluctuation of the temporal distribution of suicides and the ratio of bad mood messages on Twitter fit together well. Tweets show a deterioration of mood on Sundays more intensely; this tendency is more moderate in suicide data. Since it can be assumed that accumulated feelings of depression are in the background of many cases of suicide, we believe that this temporal delay does not contradict our hypothesis.

Monthly data, however, are much more challenging to interpret, since the fluctuations show a completely opposite tendency than what have expected. We can put forward two hypotheses based on our results.

1. As has already been pointed out in the section discussing the seasonality of suicides, researchers basically hypothesise two drivers in the background of the seasonal fluctuations. One is a (neuro-) biological explanation, and the other is social. These theories are not mutually exclusive; the two explanations can co-exist. In the case of weekly fluctuations, it would be very difficult to posit any biological factor; therefore, only social influences can have an explanatory role there. In this regard, it is quite reassuring that the weekly fluctuation of negative social climate reconstructed on the basis of Twitter and the weekly fluctuation of committed suicides are practically identical. In the case of monthly seasonality, however, it is plausible to posit biological drivers as well (even if their precise mechanisms are not known at the moment, and only hypotheses exit about them). These biological drivers might even override social ones. If we believe that it is only a relatively small fraction of society that is at risk of committing suicide, then we might also think that this biological effect which exerts its influence in spring-summer does not really concern great masses of people ('only' those, for example, who suffer from severe depression). Therefore, no sign of this can appear in the negative climate identified on the basis of Twitter. This line of argumentation also suggests that social drives would influence the natural course of this process in the opposite direction; therefore, biological drives must be very strong to be able to override this influence.

2. Our other hypothesis is related to the general emotional load of tweets. In an earlier part of our paper, we already cited Cody et al.'s (2016) study, where the temporal fluctuation of the word 'happy' could easily be identified based on the

collected data. Their results showed that Twitter users use the word 'happy' more frequently in the winter than in the summer. Based on this article, we expected to find an opposite tendency in connection with the words reflecting bad mood. As our results show, this was not the case; winter was the peak for the words we analysed as well while summer brought lower results. What can be concluded from this? We may hypothesise that the ratio of emotional tweets is not evenly distributed throughout the year. People might be more likely to tweet a higher number of emotion-related messages in general in winter than in summer, regardless whether the emotions are negative or positive. In order to check this assumption, we also analysed the frequency of the word 'happy' in the tweets geo-located in the US. The temporal fluctuation of the word 'happy' and the negative mood index (we used normalised indices in both cases) had positive correlations above 0.3. This might suggest that in our subsequent analyses we should try to operationalise a further index that would show the parity of positive-negative mood.

Further questions and limitations

It is important to mention that as the explanation of trends in Twitter data, and the correlation with the number of suicides, alternative explanations are possible. However, it is also possible that the cause that affects the mood cached in the tweets and also the number of suicides, is the same cause that affects the frequency of other dimensions in the tweets as well. As we do not have a chance to conduct experiments in this research field, we can never catch real causality, just plain correlations between variables.

Besides the practical interpretation of our findings, it would be worthwhile to consider the lessons that can be drawn from our work in a wider context. Although we touched upon problems of validity in the theoretical section, we had difficulty implementing it in the empirical part of our study. The facts that we have no information on, i.e. the exact demographic composition of Twitter users, which users apply geolocation, or whether the API made accessible by Twitter filters the tweets somehow, all pose challenges to validity. Studies like our current one would like to contribute to this debate on validity by attempting to validate the processes reconstructed based on Twitter along external criteria. Our study also shows that this is not an easy task. Despite the complexity of the task, we believe that there is an increasing need for such studies, adding that in our opinion the most promising direction would be the publication of more, primarily confirmatory, studies. If we can pose sociological questions that can be answered within the Big Data paradigm, then in the long run it will not be a question whether the Big Data approach needs sociologists or not. We hope that our analysis will also be useful in the sense that it demonstrates how sociology might benefit from the Big Data approach.

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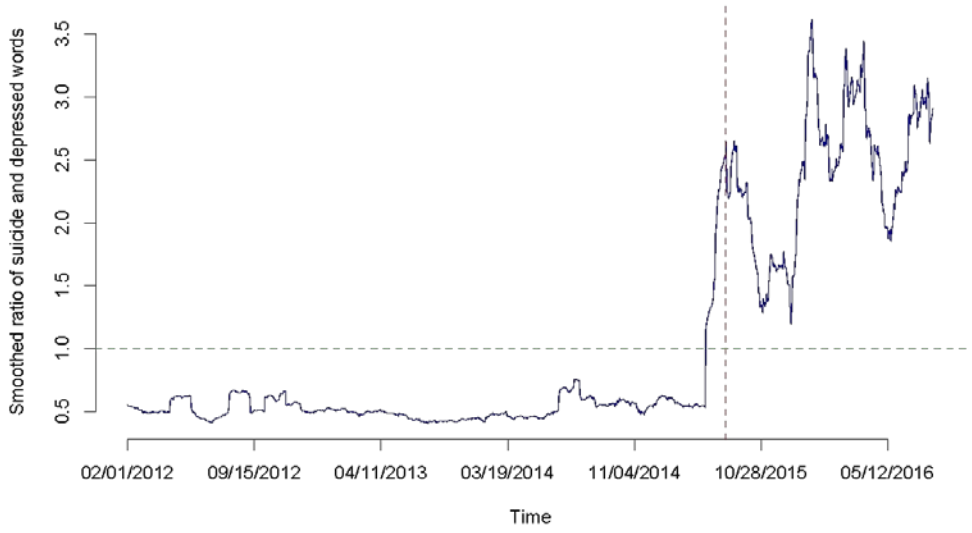
Appendix

Figure 6. Smoothed ratio of 'suicide' and 'depressed' words on a daily basis



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The Boundaries and External Connections of the Hyperlink Network of Hungarian Websites in Romania

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Abstract

The current paper describes exploratory research into the hyperlink network of Hungarian organizations in Romania. The research examines where the boundaries of the organizational system lie, and the way actors are connected to other Hungarian, Romanian and international organizations. The aim was to combine classic sociological knowledge about the Hungarian minority and its organizations with the theory of social network analysis and hyperlink analysis. The research finds that the hyperlink network of Hungarian websites in Romania is highly interconnected. Results also show that the members of the network exhibit comparably strong ties to Hungarian-language and Romanian-language websites, but the greatest proportion of external connections are with international sites. We found that the structural positions of actors within the examined network was not correlated to the distribution of external connections; actors in the network developed connections to Hungarian-language, Romanian-language and international websites regardless of their network positions.

Keywords: Hyperlink network analysis; Social network analysis; Hungarian minority from Romania; Organizations; Automated data collection.

1. Introduction

The Hungarian minority from Romania may be considered a 'society' which has its own reality (Bárdi, 1999; Kántor, 2004; Kiss, 2006). The differentiation between a minority society and a majority does not occur through everyday life interactions, but emerges through institutions (practically, organizations) (Brubaker - Feischmidt – Fox - Grancea, 2006). Thus, Hungarian organizations that act to sustain ethnicity and which satisfy communal demands that majority organizations are unable to fulfill are of elevated importance (Kiss, 2006). They are connected to both Romanian organizations and organizations from Hungary–for example, they receive various resources (including information and knowledge, in addition to funding) in different ways: from internal sources and from the majority society through other organizations (Brubaker et al., 2006; Kiss, 2006). They are also interconnected with international organizations.

The current paper discusses the results of exploratory research that examined where the boundaries of the organizational system are, and how the actors within it are connected to other Hungarian, Romanian, and international organizations. The research puts emphasis on investigating the central actors in the network, as well as their external and internal connections. There has been much theoretical discussion about the structure and connections of this organizational sphere (Bíró, 1998; Kiss, 2006), but very little empirical research. Implementing an exhaustive survey that analyzed the connections of Hungarian organizations in Romania would not only be expensive, but also hard to execute. The methodology applied here is hyperlink network analysis, where the observed hyperlink network is interpreted as a social network. This is in line with the approach of an increasing number of researchers who use hyperlink analysis to understand social phenomena and networks (Barnett et al., 2011; Heimeriks et al., 2006; Park, 2003; Park et al., 2002). Our units of analysis were the websites that operate from Romania and their Hungarian content, while we attempted to map their entire hyperlink networks using automated methods, including an internet bot developed using Python programming language and language recognition facilities. Although the hyperlink analysis of websites may seem to be far-fetched in terms of the social network analysis of Hungarian organizations from Romania, we argue that a hyperlink analysis is valid. Many hyperlink analyses have already been used to describe the physically scale-free nature and small-world properties of networks (Adamic and Adar, 2005; Albert, Jeong and Barabási, 1999; Newman, 2003). The findings of such research imply that there are influential actors in networks that support the flow of information and can help contextualize our results, showing how connected Hungarian websites in Romania really are in reality.

Automated link extraction is a good method for testing theoretical assumptions about the connectedness of organizations. The current study uses literature about Hungarian minorities and Hungarian organizations in Romania to understand the structure of the hyperlink network, and takes into account hyperlink network literature as well. Accordingly, the article is also an attempt to integrate the two approaches.

2. Hungarian society and institutions from Romania

The Hungarian minority society in Romania can be considered a complex society that has its own elite and its own organizational system (Bárdi, 1999). Although there is no consensus about the theoretical framework with which to investigate ethnic minorities, most studies treat such minorities as independent entities (Kántor, 2004).

Two hypotheses exist to describe how dependent Hungarian organizations are on the two major societies and how Hungarian minorities are related to Romanian society. The first is that the Hungarian minority creates its own reality and society within the Romanian one (Bárdi, 1999; Brubaker et al., 2006). In this framework, the institutions in the Romanian and the Hungarian community in Romania have similar functions. There are Hungarian kindergartens, schools, universities, churches, media and NGOs that make it possible for ethnic Hungarians to socialize almost completely in Hungarian, although many of these organizations, such as schools, function within the same system as their Romanian counterparts. The socialization of individuals in the 'Hungarian world' happens through an institutional system that is mainly responsible for the preservation of the minority (Brubaker et al., 2006). Kántor's framework (Kántor, 2000) describes national elites (politicians and intellectuals) as the force behind the definition and stabilization of the minority group's boundaries. The elite desires to build an independent society through the politics of creating separate institutions and creating a discourse of 'togetherness'. This institutional framework integrates not only informal relations, but organizations, alliances and policies (Brubaker et al., 2006).

The second hypothesis is that the 'Hungarian world' in Romania is an enclave that is embedded in wider society (in this example, Romanian majority society) and functions as a part of it. However, this world is also strongly connected to Hungary. At the level of the organization, it is practical and almost unavoidable that Hungarian organizations from Romania will be connected to Romanian organizations as they are part of the same administrative system. Their sources of finance include the Hungarian state (Pápay, 2014), as Hungarians from Romania often define themselves as part of the Hungarian nation (Kántor, 2004). Both hypotheses probably contain some elements of truth: the Hungarian minority exists somewhere between the 'Hungarian world' and the 'enclave' (Brubaker et al., 2006).

The most important indicator and criterion of ethnic affiliation is language (Brubaker et al., 2006). The Hungarian language is a strong glue which creates connections between Hungarian organizations (for example, Hungarian media in Romania can easily quote Hungarian news outlets). Ethnicity can be analyzed at least three levels (Barth, 1996). The micro-level focuses on the individual, and the shaping of individual identities (Barth, 1996; Hires-László, 2016). According to Brubaker (2006), the language use of individuals in everyday life is a tool of everyday communication, but not a goal. Use depends on the communication partner's language and the situation, although shared knowledge of a language is a substantial criterion of ethnic affiliation. However, individual use of the Hungarian language is not the main indicator of ethnic minority status. Reproduction of the minority occurs at the second level, which is the level of leaders, entrepreneurs and ethnic rhetoric (Barth, 1996; Hires-László, 2016). This research described in this paper takes place at

this level, since we have attempted to analyze the websites of organizations that communicate in Hungarian. The first research question is thus 'to what extent are Hungarian websites in Romania connected to Hungarian and Romanian websites?' There is also a third level of analysis, which is the level of state politics and global discourse (Barth, 1996; Hires-László, 2016).

Relevant organizational research dedicates most of its attention to NGOs (Bíró, 1998; Kiss, 2006; 2010; Kiss et al., 2004; Pápay, 2014), and their ties to state-financed organizations. It is common knowledge that the NGO sector plays a key role in the functioning of the Hungarian community in Romania. However, it has also been argued that the structure of the current institutional system has some anomalies (Kiss, 2006), and is the result of numerous historical-social processes (Bárdi, 1999; Bíró, 1998). Compared to the NGO sectors of other European societies, there are a greater number of organizations with a cultural profile (Kiss, 2010). Even the financing systems which are available reproduce a culture-centric NGO sector as the major sources of funding are the Romanian and the Hungarian state (Pápay, 2014), just as the Hungarian minority from Romania is connected to (and dependent on) both Hungarian and Romanian majority society (Kiss, 2006). According to Biró (1998), 80 or 90 per cent of Hungarian organizations from Romania have permanent ethnic goals whose priority is prestige-building in response to the majority community. Such organizations obtain resources based on the ideological considerations of external sources, not from the level at which they are active.

The current study focuses more on the structural characteristics of the network, not on the types of actors within it. At this point we make a minimum of assumptions about the structure of the sector under examination, and the connections within it.

Another key element of interest in the research is who the central actors in the network are. We assume that their connections should be differently interpreted to the ties of marginal actors. Connections with the outside word are measured through the connections of these central actors, as they are hypothesized to play a distinct role according to hyperlink analysis literature. According to the literature about Hungarian organizations from Romania, the central actors are QUANGOs, or quasi-governmental NGOs (Ágh, 1999). The Hungarian minority elite has created numerous institutions within the NGO framework to replicate the governmental institutions of the majority society and to fulfill governmental functions. However, these NGOs do not have a civic nature. Instead, they can be characterized through their relationship with majority government institutions, not by their opposition to them.

3. Hyperlink networks

Hyperlinks may be considered the basic structural element of the internet. They represent ties between websites that facilitate simple and direct contact between individuals and groups, regardless of national borders. Hyperlinks, whose function is to communicate and coordinate, are an important structural component of the World Wide Web (Park, 2003).

In the growing social science literature, hyperlink networks are interpreted as communicational systems of knowledge production and knowledge dissemination

(Heimeriks et al., 2006). Heimeriks and Besselaar (2006) interpret hyperlinks as associations between different websites, web pages, or web spheres. These ties of collaboration may emerge between users and (co-)producers of knowledge, and surface in clusters or communities. Park (2003) distinguishes between social networks and communication networks. The former consist of individuals, groups, organizations, and nation states that are in any kind of social relation with each other, while the latter are composed of individuals that are linked by information flows. Hyperlink networks can be considered a form of communication network, while nodes are websites (which may be created by individuals, groups, organizations, or nation states) whose edges are hyperlinks that represent flows of information (Park, 2003). Hyperlinks may therefore considered to be collaboration channels between actors, and communicational ties that facilitate the flow of information. There is evidence of a strong organizational incentive to form connections: bridging of social capital in this manner can increase the ability of an organization to mobilize resources (Park et al., 2002).

The analysis of a (hyperlink) network of websites shows the presence of highly connected nodes. Hubs with numerous incoming edges (a large in-degree count) suggest the existence of an organizing principle that Barabási (2016) refers to as 'scale-free property'. Barabási and Albert (1999) provide a description of a dynamic algorithm that can be used to model scale-free networks: in this framework, nodes are introduced gradually and over time, while edges are formed in a preferential manner (newly introduced nodes are more likely to develop ties to actors that are already more connected). The Barabási-Albert model can simulate networks whose degree of distribution follows a power law distribution rather than a Poisson distribution process, as suggested by earlier work about random models such as that of Erdős-Rényi (1959). Power law distribution can be formulated thus:

$$p_k \sim k^{-\gamma}$$

where k is the degree and γ is the degree exponent. For directed networks such as hyperlink networks, distribution should be approximated separately for in-degree and out-degree distribution. Barabási, Albert, and Jeong (2000) show that the topology of hyperlink networks exhibits universal scale-free properties: although the hyperlink network of websites is gigantic in size, the internet overall seems to follow scaling law processes, hinting at the existence of a very interactive, self-organized system. This study also assumes that the network of Hungarian websites in Romania is a scale-free network: we expect to find a relatively small number of vertices that are highly connected (i.e. which have a large number of incoming or outgoing edges), while the majority of nodes have a considerably smaller number of ties. Barabási and Albert (1999) emphasize how the average shortest path length (the mean of the shortest paths between every pair of vertices) changes as a function of network size in a scale-free network such as a hyperlink network. This metric is highly important since it gives an indication of how simple it is on average to find any vertex (starting from an arbitrary node) by following the intermediate edges that separate them. The authors' findings reveal that a network of websites forms a small-world network: unit growth in the size of the network does not entail linear increases in the length of the average shortest

path; the relationship is instead logarithmic. Nodes (or websites, in the case of hyperlink networks) attempt to gain access to or distribute information in the network. One efficient strategy for doing this is connecting with influential neighbors in the network so as to reach many other nodes. The tendency to connect to influential nodes amplifies the emergence of hubs and leads to improved paths of information transmission (Adamic and Adar, 2005; Adamic, Lukose, Puniyani and Huberman, 2001), resulting in a well-connected network, regardless of size. This study also quantifies how easy it is for nodes in the network of Hungarian sites in Romania to reach other sites, a metric of the level of connectedness.

A hyperlink network is formed by culture and intercultural communication, globalization theory, economics, and culture (Barnett et al., 2005). The internet is a centralized structure in terms of globalization, in which there are semi-peripheries and peripheries. There is also evidence of decentralization in the global hyperlink network. Decentralization means the emergence of regional areas and other units shaped by geographical and cultural homophily. These decentralized units exhibit independence and actively reduce the tendency to centralization (Barnett et al., 2011). Halavais (2000) claims that one can still 'see' national borders on the internet. Transnational interaction and domestic integration may be simultaneously present (Stark et al., 2005).

4. Research questions/hypotheses

Hungarian minority society in Romania has been described as a society that has its own elite and its own organizational system (Bárdi, 1999). The reproduction of the minority occurs at the 'second level'; the level of leaders, entrepreneurs and ethnic leaders, where the main actors are the institutions created by the elites. This institutional framework consists of informal relations, organizations, alliances and policies (Barth, 1996; Brubaker et al., 2006; Hires-László, 2016; Kántor, 2000). Besides organizations' websites and online media outlets, a few blogs were also included in our sample, all of which can be located at the second level of the minority community (Barth, 1996). The most important indicator and criterion of their ethnic affiliation is language (Brubaker et al., 2006). Accordingly, we relied on automated language recognition to identify our units of analysis.

Centralization and decentralization can occur on the internet at the same time when regional areas shaped by geographical and cultural homophily represent themselves as separate units (Barnett et al., 2011; Halavais, 2000; Stark et al., 2005). Based on these theories, we expect the hyperlink networks of Hungarian websites in Romania to be highly interconnected. We define interconnectedness as the ability of a site in the network of Hungarian websites in Romania to reach another website in the same network. This property is quantified through the concept of average path length and network diameter that we detail further in the description of our methodology (Barabási, 2016). We assume that the easier it is to reach any node, the more connected and more cohesive the network in question is.

H1: The hyperlink network of Hungarian websites in Romania is highly interconnected.

Earlier empirical results are used to put our findings into context. We compare numerous metrics from our network to information from other real-world networks such as hyperlink networks.

After examining the interconnectedness of the hyperlink network, the next question that should be answered is 'what ties does this network have with the outside world?' Hungarian organizations from Romania are connected to both Hungarian organizations from Hungary, Romanian entities (Kiss, 2006), and, supposedly, to other international organizations. First, to identify whether the Hungarian community in Romania can be better described as a different community to the Romanian one, or as an enclave that is perfectly embedded in Romanian society (Brubaker et al., 2006), we seek to identify whether Hungarian organizations connect to Romanian organizations at a different intensity or in a different way. We assume that Hungarian organizations from Romania are densely tied to Hungarian organizations from Hungary for many reasons. For example, they may be partly funded by the Hungarian state and state-financed organizations (Pápay, 2014), while a common national identity can also create bonds (Kántor, 2004). A common interpretation of a hyperlink network is an information (knowledge) exchange network that can also reflect collaboration (Heimeriks et al., 2006). In the case of an informational network, language can also be a powerful instrument for connecting Hungarian organizations to Hungary. Thus, we formulate the research question whether ties can be interpreted as communication paths for information exchange that favor Hungarian language partners, or if they take the form of collaborative exchanges that are strategically more advantageous to local (Romanian) partners.

RQ1: Do members of the network of Hungarian websites in Romania exhibit stronger ties to Hungarian-language than Romanian-language websites?

To explore the patterns of ties to the outside world, it is important to examine how the structural positions of the different actors affect their connections to the Hungarian, Romanian, and international sphere. As noted earlier, it appears beneficial for such actors to connect with both Romanian and Hungarian partners, but ties to international actors may also provide access to knowledge that may not be present in the local sphere. Central members may play a key role as producers and disseminators of knowledge, so the effect of centrality on external patterns of connectivity is a relevant topic for investigation.

RQ2: Do Hungarian websites in Romania with more central positions have more external connections?

5. Methodology

This chapter provides an insight into the methods of data collection and analysis which were applied. Data were collected in an automated manner and the results were manually checked to ensure their validity and to filter out irrelevant observations. Hyperlink networks may be interpreted as social networks, so the tools of social network analysis were considered applicable (Jackson, 1997).

5.1 Data collection

As noted earlier, we attempted to map the hyperlink network of Hungarian websites in Romania to reveal the network's internal structure and its connectedness to outside actors. The large number of sites necessitated the use of automated methods of analysis. Our custom-made internet bot had two main tasks: firstly, to identify the ties (hyperlinks) between relevant websites; secondly, to collect textual information from the web pages to permit determination of their language.

The unit of analysis is single websites. Manual inspection of the sample revealed that the majority of websites in our sample could safely be considered to belong to organizations, so we made the decision to refer to these websites as organizations. As noted earlier, three levels of an ethnic society can be distinguished, the second level being where the reproduction of society happens (Barth, 1996; Brubaker et al., 2006). The few personal websites in our database belong to the second level of ethnic society.

It is important here to provide an insight into the technical details of the process of data collection. A website contains a number of hyperlinks that point either to its own subpages, or other websites. The research interest in this case is in the latter: collecting the hyperlinks to different sites allows us to map the hyperlink network of interest. Websites also contain textual information that needs to be processed to identify the language. Making such a language classification was crucial to addressing the hypotheses and research questions. A custom-made internet bot was created to undertake this task. The computer program was developed in Python, and is able to process a large number of websites in parallel and thus collect data in a short period of time. The bot opens the websites of interest, collects hyperlinks from the main page and (up to a hundred) subpages, and analyzes site-related text to determine its language. We chose a standalone language identification tool named langid.py[1] that has been pre-trained on numerous languages, including Hungarian and Romanian.

The following paragraphs describe the method of sample building. The web bot started its life cycle by processing a starting sample that was collected from a public database[2] of Hungarian websites in Romania compiled by Transindex[3]. The next step was to analyze the hyperlinks collected from sites in the starting sample. Texts from every website were collected and processed to determine their language, but hyperlinks were only collected from sites with Romanian country code, top-level domains (.ro) with content written in Hungarian. Inaccessible sites were not included in the sample. Subsequent rounds of data collection followed the same logic. A total of six cycles were executed until the data saturation point was reached (the sixth iteration collected data about largely redundant websites). We also manually filtered out websites that were most likely members of the Hungarian hyperlink network in Romania and identified pages that were not present in the starting sample. It seems

[1] For more information on the project's GitHub repository: https://github.com/saffsd/langid.py Accessed: 21-03-2017.

[2] The database can be found at: http://netkatalogus.adatbank.transindex.ro. Accessed: 21-03-2017.

[3] It should be noted here that the Transindex sample also contained websites with non-Romanian, top-level domains (.hu, .com, etc.).

safe to assume that the overwhelming majority of Hungarian websites in Romania have been mapped and the sample sufficiently represents the whole population.

We made the decision to exclude certain domain names from the database. Websites connected to the most popular search engines (such as Google.ro), social networking sites (such as Facebook.com), and blog services (for example, blogspot.ro) were not parsed to prevent the inclusion of a large number of potentially irrelevant sites. Inclusion of these sites in the database would have resulted in more analysis-related challenges and necessitated the additional step of a costly manual filtering process (this exclusion did not apply to the first cycle of web bot activity).

5.2 Limitations of the data

One limitation of the database is the selection mechanism for the websites, as sites were selected mainly through identification of the country-level domain. The first web crawl collected all the websites included in the Transindex sample, but later cycles only identified websites as members of a network with Romanian top-level domains (.ro) and Hungarian textual content. This sampling criterion may have led to the exclusion of sites that had other country-level domains (.hu for example), but which are in fact part of the network of Hungarian websites in Romania. This limitation is somewhat offset by the fact that the first cycle of data collection included all sites in the starting sample, regardless of their domains. The same logic applies to the identification of external partners. There may be websites that use Romanian domains and contain Hungarian content, but which are not maintained from Romania; the same may be true in the case of Hungary. One reason for this is the presence of diasporas.

Another important limitation is that we did not collect data for the Romanian hyperlink network as a whole. Analysis of Hungarian websites in the context of the entire Romanian world wide web would have been advantageous (allowing us, for example, to identify whether the network of Hungarian websites in Romania is a clearly defined community in terms of the whole Romanian hyperlink network), but we did not have the resources to map the entire hyperlink network. We therefore made the decision to limit our attention to Hungarian websites.

5.3 Database

Using the automated method detailed earlier, we were able to map 1091 websites and 97858 hyperlink connections between members of the network of Hungarian websites in Romania. Since such hyperlinks navigate the visitor from one site to another, we consider this network to be a directed network and analyze it accordingly. After filtering out multiple edges, 2220 unique connections remained. We decided to use a simplified network approach (multiple edges and loops removed) because the amount of redundant hyperlinks was highly variable and we were more interested in the existence (or lack) of ties between websites. Figure 1 illustrates the visualized network of websites within the Hungarian network in Romania. The nodes exhibited an average of 2.04 connections to other websites in the network.

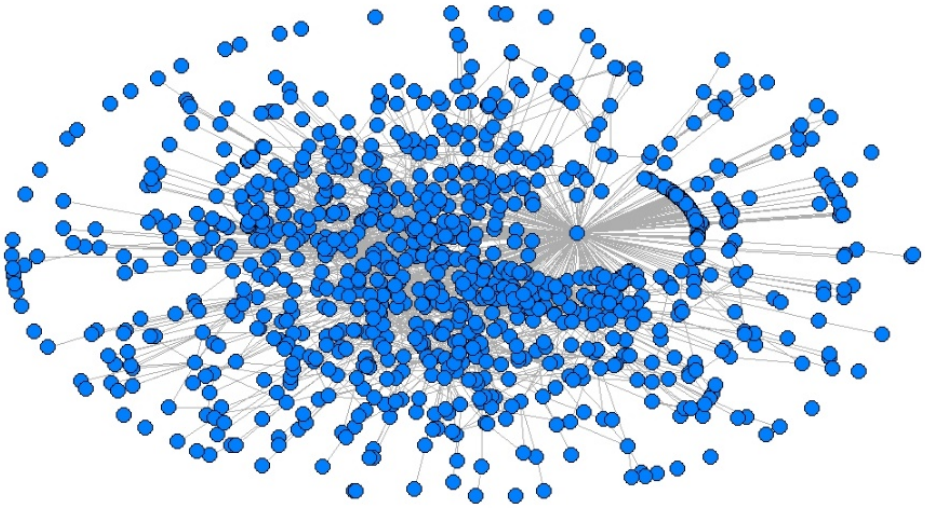

Figure 1: Visualization of the hyperlink network of Hungarian websites in Romania

The external connections of the Hungarian websites in Romania were reduced to 2434 unique websites that were functioning at the time of the data collection. The total number of ties amounted to 147719 and the removal of multiple ties resulted in 3822 unique connections. These connections were exhibited by a total of 986 Hungarian websites in Romania that had 1.89 connection on average to external partners.

The network of Hungarian websites in Romania included a large number of different actors, including numerous organizations, media outlets, cultural foundations, universities and many others. Table 1 lists the actors with the largest number of incoming hyperlink ties. As mentioned earlier, we consider the hyperlink network of Hungarian websites in Romania a scale-free network, so these sites can be safely referred to as hubs (the most connected vertices in the network). The website *hargitamegye.ro* belongs to the local government of Hargita County in Romania which has a mostly Hungarian population and uses Hungarian as its administrative language. *Rmdsz.ro* is the website of RMDSZ (Democratic Alliance of Hungarians in Romania), the largest political party for the Hungarian minority from Romania. *Communitas.ro* belongs to Communitas, a QUANGO created and sustained by RMDSZ whose goal is to allocate state funds to the Hungarian minority and related organizations. The other websites on the list (*transindex.ro, erdely.ma, szekelyhon.ro, kronika.ro, 3szek.ro, maszol.ro*) belong to media outlets.

Table 1: Nine websites in the network of Hungarian websites in Romania with the greatest number of incoming hyperlink connections

Website	Number of incoming connections (in-degree)
transindex.ro	74
communitas.ro	65
hargitamegye.ro	42
erdely.ma	41
szekelyhon.ro	39
rmdsz.ro	31
kronika.ro	31
3szek.ro	29
maszol.ro	20

It is important to note that the Hungarian websites in Romania notably prefer to develop ties to other members of the network, as opposed to ties with external partners. There is a greater chance of a website in our sample connecting with another Hungarian website in Romania than another random website. The average proportion of external partners amongst all connections is 37.6 per cent, and the median 33.3 per cent.

We identify 47 weak components in the sample network. An overwhelming majority of the nodes, however, are part of a single larger one consisting of 966 websites, while the other components usually have 2 websites. Manual inspection revealed that we can safely assume that the numerous small components are mostly due to the presence of websites containing highly outdated content and plain text. These websites were part of the initial sample provided by Transindex.hu, but eventually proved to be a dead end in terms of data due to their old content, references to dysfunctional sites, or lack of hyperlinks to other sites.

5.4 Concepts

In this study we use the term interconnectedness as a measure of how simple it is for a visitor who starts out at one of the websites in the sample to reach any other page in the network of Hungarian websites in Romania. We therefore use the concept of connectedness in a different way to Barabási, who defines connectedness as the existence of a path between two arbitrary nodes in a network (2016). The present researchers were more interested in the measure of distance between any two nodes. In networks, distance can be measured using path length, which refers to the routes that follow the edges of a network, and is the number of links of which a path consists. The average shortest path is the arithmetic mean, while the network diameter is the maximum of the shortest path lengths between any pair of network vertices. We use average path length and diameter to assess the level of connectedness of our network (Barabási, 2016).

6. Results

6.1 Interconnectedness

First, consider our first hypothesis: *the hyperlink network of Hungarian websites in Romania is highly interconnected*. To examine the truth of this statement, we investigate the connectedness of the websites in the sample.

Before discussing network measures, it is important to note that we identified 47 weak components in the sample network. An overwhelming majority of the nodes, however, are part of a single larger one consisting of 966 websites, while the other components usually have 2 websites. Manual inspection revealed that we can safely assume that the numerous small components involve websites containing highly outdated content and plain text. The websites that belong to the small components were part of the initial sample provided by Transindex.hu, but eventually proved to be dead ends in the process of data collection due to their old content, references to dysfunctional sites, or lack of any hyperlinks pointing to other sites.

The degree distribution of the network of Hungarian websites in Romania follows a power law. Since it is a directed network, both in-degree and out-degree distribution are analyzed. As noted earlier, scale-free networks exhibit degree distributions that can be well approximated by a power law. The exponent of the power law fit for the in-degree distribution is 2.578, while the fitted exponent for out-degree distribution is 2.14. The p-value for a Kolmogorov-Smirnov test was sufficiently high, affirming that the data could have been drawn from the fitted power law distribution. Appendix 1 includes numerous statistics from real-life networks, besides the network of Hungarian websites in Romania. The two other hyperlink networks included in the table also exhibited power law exponents in the range of 2-3, but in their case the exponent of in-degree distribution (2.1) was smaller than the exponent of out-degree distribution (2.4 and 2.7). We conclude therefore, that the network of Hungarian websites in Romania is a scale-free network.

As discussed earlier, the average path length and diameter of the network are considered the most important metrics for quantifying the interconnectedness of the network of Hungarian websites in Romania. Figure 2 is a histogram displaying shortest

path lengths for every pair of nodes. While the maximum length of the shortest path between any two nodes (the network diagram) is 21, the average shortest path length is 6.71 and the mode of these distances is five. We conclude that, on average, a site in the network of Hungarian websites in Romania can be reached from any other page by following a path that leads through five or six other websites.

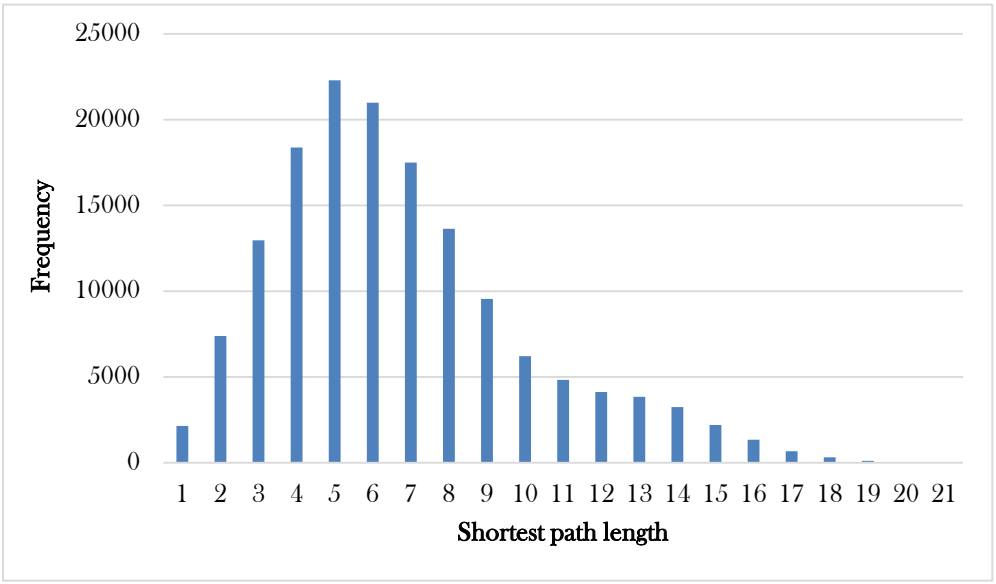

Figure 2: Shortest path lengths between any two nodes in the network of Hungarian websites in Romania

This is considerably less than the average shortest distance measured in the case of nd.edu (11.27) and the Altavista hyperlink network (16.18). This indicates the considerable interconnectedness of the network in question, compared to the hyperlink network of the internet.

The research thus finds that the hyperlink network of Hungarian websites in Romania is highly interconnected: the numerous actors in the examined network are connected as a 'society'.

6.2 Ties to the Hungarian, Romanian and international spheres

We have already seen that the network of Hungarian websites in Romania is quite interconnected, but have also identified a strong preference for connections with other members of the network, as opposed to external partners (the average proportion of external partners for the websites in the network of interest is 37.6 per cent). This subchapter provides a summary of results concerning ties to the Hungarian, Romanian, and international sphere.

We begin with a discussion of the first research question (*RQ1: Do members of the network of Hungarian websites in Romania exhibit stronger ties to Hungarian-language than Romanian-language websites?*). As mentioned earlier, we used an automated language detection process to identify the languages used on the websites in

the sample, including sites that are not part of the network of Hungarian websites in Romania. We now turn to examining the languages we were able to identify on the websites of external partners. Here, we refer to languages that are not Hungarian or Romanian as 'other'. This group overwhelmingly consists of major international languages such as English or German, but less commonly encountered languages such as Slovakian, Dutch, and Swedish also occur sporadically. We classify websites with content written neither in Hungarian nor in Romanian as 'international websites'.

Table 2: Languages used on external websites

Language	Frequency	Per cent
Other	1016	41.7%
Hungarian	711	29.2%
Romanian	707	29.0%
Total	2434	100%

As can be seen from Table 2, slightly more websites (711) used the Hungarian language than had content written in Romanian (707). It is also apparent that most external partner websites used other languages (we remind the reader of one of the main limitations of this study: that the Romanian hyperlink network as a whole was not mapped out). The one-sample Chi-square statistic is 77.454, which is statistically significant at $p<0.99$. We therefore state that most websites that are externally connected to Hungarian sites in Romania are international, and the number of actors with Hungarian and Romanian content is approximately equal. Thus, we cannot detect a significant preference for Hungarian sites as opposed to Romanian ones, but international partners represent the majority (41.7 per cent) of external agents. We argued earlier that Hungarian organizations in Romania function within the same system as their Romanian counterparts (Brubaker et al., 2006) and they receive financial contributions from both Romanian and Hungarian sources, but their language and national identity should tie them to Hungarian-speaking websites. The aforementioned reasons for the distribution of connections to Romanian and Hungarian sites may balance each other out.

As suggested by the second research question (*RQ2: Do Hungarian websites in Romania with more central positions have more external connections?*), we also attempted to identify the presence of relationships in the structural positions of members of the network of Hungarian websites in Romania. As noted earlier, in-degree centralities are a viable indicator of this in our case, since the incoming ties for each node are assumed to provide a good estimate of structural positions in the

network. We attempted to estimate the strength of the relationship between structural positions (mainly in-degree centralities) and the proportion of partners, but could not identify a significant effect. The Pearson-correlation between the proportion of Hungarian-language partners and (normalized) in-degree centrality was 0.0303, which is very close to zero. We were also unable to identify a significant and strong correlation between structural position and the proportion of Romanian (0.0182) or international partners (-0.0404).

These results indicate that the members of the network exhibit stronger ties to international external partners than to either Hungarian or Romanian-language websites. External partners with Hungarian content do not seem to be favored above sites with Romanian text. Results also show that the structural position in the network of Hungarian websites in Romania does not affect the pattern of connectivity with the Hungarian, Romanian, or international sphere.

7. Further research

The use of social network analysis in this study of the network of actors in a minority society proved to be a useful approach. Due to the multitude of different types of ties between Hungarian organizations in Romania, we argue for the broader utilization of the technique to gain deeper understanding of the interdependence between these actors, and to better identify communities in the network.

The hyperlink network of Hungarian websites in Romania offers many opportunities for future research. As noted earlier, the decentralized nature of the network should be studied in-depth, and more detailed research is needed to distinguish between different kinds of actors. The network database could be expanded by including variables that can be used to break down the websites into organizational and/or geographical categories. This kind of classification, if factors such as the flow of monetary resources were controlled for, would enable researchers to explain the clustering patterns observed in the network. Mapping of the Romanian and Hungarian hyperlink network would permit the identification of the real positions in the network of Hungarian websites in Romania in a broader context.

The data collection process for this research involved the extraction of textual information from websites, and the corpus that was created makes quantitative text analysis possible. It would be beneficial to study phenomena such as emerging (political, geographical, etc.) topics in the network.

It is worth mentioning that the Transylvanian Hungarian community may exhibit regional differences. While in 'Szeklerland' there is a separate Hungarian reality (i.e., one distinct from Romanian society, or, in other words, a small Hungarian community within the Romanian state), the use of language, employment policy and the financial maintenance of Hungarian institutions are more problematic in the ethnically mixed territories (Bárdi, 1999). It would also be interesting to examine the spatial fragmentation that is possibly present in the network.

Although we were able to map the ties between the relevant websites, the nature of these connections leaves room for further research. It might be beneficial to classify these ties based on the context in which they have emerged. For example, an analysis

of the textual context of the hyperlinks would make it possible to identify partnerships or financial ties, which information could be used in further analyses.

8. Conclusion and discussion

The paper has described exploratory research that mapped the network of Hungarian organizations in Romania using hyperlink network analysis.

The social scientific literature about the Hungarian minority in Romania tends to distinguish three levels (micro-meso-macro) of minority society, where the second level is responsible for the reproduction of society itself. The leaders of the minority create institutions that are independent alternatives to the institutions of the majority, leading to the emergence of a community with a separate reality. In the case of the Hungarian minority in Romania, the Hungarian language is of central importance in creating and sustaining the identities of members. Even though research has examined numerous Hungarian minority organizations, only a few studies have mapped the networks of these entities.

We argue for the utilization of hyperlink analysis in the study of the network of Hungarian organizations in Romania. Hyperlink connections are considered communication-based paths of knowledge production and dissemination, and there are organizational incentives for revealing these ties. The tools of social network analysis are applicable in the analysis of hyperlink networks. The rapid growth of the international hyperlink network also shows signs of decentralization which has resulted in the emergence of national, regional, and other borders on the internet. We assume that pages of the Hungarian minority in Romania are components of such a decentralized community.

We employed automated methods to map the network of Hungarian websites in Romania and to reveal the ties of its members to the Hungarian, Romanian, and international spheres using an automatic language recognition process. The sampling method may have resulted in some instances of misclassification, which is one limitation of the research described in this paper. The database went through a process of manual inspection which validated the reliability of the data by helping to filter out irrelevant observations. Our units of analysis were websites in Romania (not necessarily those with a Romanian top-level domain) with Hungarian-language content. We mapped the network using a starting sample provided by Transindex.hu, and then by traversing hyperlink connections. A further research limitation is that the whole Romanian hyperlink network was not mapped.

We were able to show that the network of Hungarian websites in Romania is strongly interconnected, forming a community with a separate reality. When choosing external partners, websites from Hungary do not seem to be preferred to sites with Romanian-language content. Thus, there appears to be a balance between the factors that incentivize Hungarian minority organizations to develop ties to either the Hungarian or the Romanian sphere. There is, however, a strong preference for international (neither Hungarian nor Romanian) partners. The research was unable to demonstrate any relationship between structural positions in the network and patterns of connectivity with external partners.

Further research could segment the organizations in the network of Hungarian minority organizations into categories. Since we could not distinguish between different types of actors in the network, only macro-level analysis was possible. A more fine-grained analysis would involve controlling for, among many other factors, organizational profiles, geographical regions, or sources of financing.

Analyzing the hyperlinks of Hungarian websites in Romania may seem to be an approach that is positioned outside the classic theory of minority studies, but the two approaches can be integrated. Hyperlink network analysis, according to which hyperlink connections are considered communication-based paths of knowledge dissemination, can stand on its own. The approach provides researchers with an opportunity to reveal relationships that may be more complex and costly to discover using other, more traditional methods. The opportunity it offers researchers to examine the network of Hungarian entities from Romania, while taking into consideration the literature on Hungarian minorities, should not be missed.

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Appendix 1 – Network parameters

	Network	Type	Number of vertices	Total number of edges	Mean degree	Mean vertex distance	Exponent a of degree distribution if the distribution follows a power law	Transitivity	Clustering coefficient	Degree correlation coefficient	Citations for network in bibliography
social	telephone call graph	undirected	47000000	80 000 000	3.16		2.1				8. 9
	email messages	directed	59912	86 300	1.44	4.95	1.5/2.0		0.16		136
information	WWW nd.edu	directed	269504	1497135	5.55	11.27	2.1/2.4	0.11	0.29	-0.067	14. 34
	WWW Altavista	directed	203549046	2 130 000 000	10.46	16.18	2.1/2.7				74
	citation network	directed	783339	6 716198	8.57		3.0/-				351
	Roget's Thesaurus	directed	1022	5 103	4.99	4.87	-	0.13	0.15	0.157	244
	word co-occurrence	undirected	460 902	17 000 000	70.13		2.7		0.44		119. 157
	Hyperlink network of Hungarian websites in Romania	**directed**	**1091**	**2220**	**4.08**	**6.73**	**2.58/ 2.14**	**0.0854**	**0.2672**	**-0.036**	
technological	Internet	undirected	10 697	31992	5.98	3.31	**2.5**	0.035	0.39	-0.189	86. 148
	power grid	undirected	4 941	6 594	2.67	18.99	-	0.10	0.080	-0.003	416
	software packages	directed	1439	1 723	1.20	2.42	1.6/1.4	0.070	0.082	-0.016	318
	software classes	directed	1377	2 213	1.61	1.51	-	0.033	0.012	-0.119	395
	peer-to-peer network	undirected	880	1296	1.47	4.28	2.1	0.012	0.011	-0.366	6. 354

ANTHONY CHARLES *

Generating Authentic Understandings of Participation: Working with Young People

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Abstract

Young people's right to participate has intensively been the subject of law, policy and practice at supranational, nation state and devolved administrative levels. Although often constructive in nature, the rhetoric of 'participation' is largely controlled by adults. As a concept, participation is associated with a number of potentially positive outcomes. However, as research with young people aged between 11-18 years in Swansea, Wales, suggests, significant problems exist concerning the definition and understanding of participation. In this article, what young people said when they were asked to explain what participation meant to them is presented and explored. Critically, through the research, new understandings of participation that pose profound challenges, notably concerning the very nature and operation of participation, were offered. For instance, eschewing traditional concepts, young people revealed that, to them, participation was founded on: understandings of their intention and communication when participating; the importance of relationships; and the reality that participation is located within everyday decision making. Drawing upon research findings, it is argued that young people not only offered better than current understandings of participation, but that what research participants said is transformative and has serious implications, suggesting the need for changes in legislation, policy and practice.

Keywords: Young people's participation; Children's rights; Decision making; United Nations Convention on the Rights of the Child (UNCRC).

> 'Oh yeh, they go on about it [young people's participation] saying it's this, that, and everything. It's like the world's gonna end if we don't get involved in certain things. And we are like, uh? It's not like that. But there's no use arguing... it's not what they [adults] think.'
> (David[1], Young Person)

David's view, filled with frustration, reveals an interesting reality. The reality that David exposes is one wherein he and, as will be discussed below, other young people, whilst relishing and desiring opportunities to be involved in decision making, believe that their conception and practice of participation varies greatly from the ways that adults understand that right. David's opinion offers a challenging lens through which 'participation' as a concept and an action can be seen. Much literature exists concerning young people's 'participation rights': these being located at supranational[2], national[3], and devolved governmental levels[4]. Certainly, young people's participation remains topical, and the continuing emphasis upon pertinent law, policies and frameworks (for example, the United Nations Convention on the Rights of the Child) seems unlikely to abate. Pragmatically, often innovative approaches to promoting young people's participation in decision making are designed and implemented across a range of governmental and NGO activities. Yet, arguably, these focus upon largely structural, civics-orientated and legalistic understandings of participation and result in the offering of opportunities that are designed to 'slot' young citizens into formal types of decision making (Taft and Gordon, 2013). It can nevertheless be argued that the generation of conceptual and definitional frameworks, allied to the provision of structural opportunities, are valuable, and can lead to positive outcomes for young people (Shephard and Patrikios, 2013). However, there is limited evidence to suggest that young people consider adult-inspired definitions of participation, and provision that flows from these, to reflect their personal and lived understanding of decision making (Charles, 2012).

That young people's participation in decision making may be understood as a multi-dimensional and complex phenomenon is not, in itself, controversial (Hopkins, 2013). It might be expected that lateral understandings of 'participation', as defined by the UNCRC for instance, necessarily include both formally defined and informally created understandings that embrace the spaces, places, audiences and actors that are involved in its evocation (Lundy, 2007). Despite this, throughout the proliferation of laws, policies, strategies and local initiatives, participation of a certain flavour, namely that which is institutional and processual, does appear to be predominant. This is not to level undue criticism at those who seek to promote young people's participation, sometimes in formal ways: such action can have beneficial outcomes. However, when young people have been asked about what constitutes participation, discordance between adult and young people understandings becomes visible. Possibly, the 'good

[1] In this article, a number of quotations from the young people who took part in the research which is described are included in the text. To protect the identity of the children, pseudonyms have been used.
[2] European Commission (2010) EU Strategy for Youth 2010-2018. Strasbourg: European Commission
[3] Cabinet Office (2013) Positive for Youth – Progress since December 2011. London: Cabinet Office
[4] Welsh Government (2014) Children's Rights Scheme. Cardiff: Welsh Government

intentions' of adults have led to the inadvertent obfuscation of young people's views. Certainly, an examination of the historical legacy of child-rights development does suggest that, somewhat ironically, young people's participation in the development of critical rights-related policies and strategies is sometimes an afterthought. The case of the UNCRC's development helps to illustrate this point (Lundy et al., 2015).

The structural emphasis on young people's participation, both definitively and via processes such as national policy fora and local governmental schemes, is often accompanied by statements which use a language of partnership that focuses on constructing conduits through which voices can be heard (McEvoy, 2015). In themselves, these are constructive. However, the virtual embedding of young-people-focused participative mechanisms and policies which inform these create two consequences for young people which are, as yet, unresolved. These are, namely, that definitive statements that underpin the participation agenda are created by adults. This adult-driven 'agenda' is evidenced by a significant corpus of policy declarations that aim to promote young people's participation in decision making: declarations that young people did not create. In practice, these enable adults to claim that young people's right to participate in decision making is being respected and supported[5]. The interface, in this context, between policy and practice becomes somewhat linear and auditable; i.e. policy-derived definitions 'clarify' what is meant by participation, and formal, frequently adult-initiated processes create 'participation delivery' structures. Furthermore, and perhaps unintentionally, the deployment of structural authority to create specific spaces, places and audiences for young people's participation can result in the inveigling of young people's participation (c.f. Lancaster and Broadbent, 2003). By this it is meant that the utilisation of a specific language of participation which is inextricably linked to process and structure may obviate exploration of other key foci which matter to young people, thereby reinforcing a type of participative orthodoxy which is antithetical to those for which it was initially designed (Rinaldi, 2005). These points are important, not least because participation in decision making has multiple impacts upon young people and, as an arguably impactive concept and activity which is regularly undertaken by them, it is arguable that the 'orthodoxy' of participation should be challenged by those for whom it has been designed. This is something that Article 12:1 of the UNCRC would appear to endorse, since the decision to adopt specific understandings of participation is something that affects many young people. According to the UNCRC, this is a matter about which they should be able to express a view.

This article seeks to understand young people's views, and, in doing so, challenge the 'habit' of adults to define, without reference to young people, the concept of participation. Additionally, the largely structural manifestation of 'participation' and its embedding within process will be explored, with young people offering radical and powerful alternatives to the current participative orthodoxy. Drawing directly upon research undertaken in Swansea, this article reports what happened when young people were asked to share their views, opinions and experiences of participation. Also, the views of young people regarding what they

[5] See for instance, Welsh Assembly Government (2009) Sitting on their Council, standing up for their rights: School Councils in Wales. Cardiff: Welsh Assembly Government

deemed to be an appropriate definition of participation, one that was grounded in their real-life experiences, and the primary location of their decision making, are considered. Reflecting upon what young people said, it is argued that the new understandings of participation which they offered are not only important, but are capable of transforming participative policy and practice.

1. Giving young people a voice: Enabling participants to shape and lead research

Messages from research suggest that there is indeed discordance between what adults and young people understand concerning 'participation'. Reflecting this, an innovative research process which situated young people as leaders of that process was constructed. Rather than create a piece of research which merely tested or compared understandings of participation, a different approach was adopted. Moving away from types of research where adults dictate methodology, and young people are passive participants, an alternative process was enabled. Drawing upon a lateral application of Article 12 of the UNCRC, a methodology was enabled that unashamedly sought to accord young people key roles in the research (Pinter and Zandian, 2015; Graham et al., 2015). The research from its inception was founded on a desire that young people should be situated at the heart of the inquiry process. In fact, and to ensure young people's meaningful participation, a multi-stage process was created consisting of: a concepts and design development stage that was comprised of two main types of activities. Firstly, there were exercises through which young people could explain and explore what 'participation' meant to them, and next, young people led a methods-generation process to design research instruments and determine how levels of young people's participation could, in their view, best be measured; the concepts and design development stage was followed by a larger scale stage of research, the methodology of which was co-designed with young people, using, for instance, research instruments designed by them, and which was addressed to sample groups identified by young participants. It should be noted that this article focuses upon what young people said when they were asked to explain and explore what participation meant to them. Other aspects of the wider research process described above are considered elsewhere.

In a very real sense, the research was child-focused and exploratory, and was intended to acknowledge that young people are experts in their own lives (Clark and Statham, 2005), can be active and invaluable research participants (Van Blerk and Kesby, 2013), and are capable of offering cogent and incisive views concerning critical aspects of their social and personal lives (Iwasaki et al., 2014). The approach adopted and the viewpoints taken concerning young people were considered to be important because they were underpinned by the need to listen to young people, situate young people at the heart of research, and could safeguard against the imposition or development of adult-centric understandings of participation (Jacquez et al., 2013; Kellett, 2003). Within the research, the role of the adult researcher was limited to being that of 'least adult' (Mandell, 1991): one that expressly required partnership working with young people, support for their active participation in the inquiry (in a variety of roles) and constant protection against adult domination of the process (Morrow, 2009).

The research documented in this article was a qualitative enquiry process, and one which sought to understand young people's views, opinions and lived experiences of participation. This stage of research was intended to offer a range of young people aged between 11-18 years an opportunity to consider, reflect, articulate and lead discussion in response to the following key questions:

- What is participation?
- Who is involved in your participation?
- Where does your participation occur?
- How does your participation occur?
- What effects flow from your participation?

Two groups of young people were, via gatekeepers within institutions, invited to participate in the research. The first group of young people were students at a local secondary school aged between 11-16 years. The second group were individuals who were working with local youth justice and resettlement and aftercare services aged between 11-18 years. These two groups represented an attempt to engage with individuals who could be considered 'mainstream', and 'less easily accessible'. The decision to seek the views of young people with different experiences was considered to be critical, since decision making, as the literature indicates, can manifest in often diverse manners, depending upon the environment, location and expectations that are placed upon young people. In order to understand participation in an holistic way, a broad range of participants needed to be involved in the research.

Within school, regular engagement with non-streamed classes occurred, ensuring that a mixture of young people participated in the research. This type of engagement mechanism was not simply convenient: rather, it facilitated the bypassing of the tendency for an 'academic achiever'-centric approach which sometimes characterises research with young people (Kirby, 2004; Matthews et al., 2000). Research took place 'on site' at the school, with teachers sitting in class as observers, but not active contributors.

For those young people who were 'less easily accessible', an individualised approach to participation in the research was adopted, to recognise and accommodate the vulnerable nature of many participants. Support workers accompanied the young people to research sessions, which took place in safe locations that were preferable for them such as rugby clubs or community centres. Rather than being tokenistic, these engagement opportunities were offered so that young people with often very different experiences of participation could take part in the research. School students in particular felt that this was important because:

> 'Like, I know one boy who looks after family members, his parents are in trouble with the law and he's getting a hard time from the family and his school. He probably makes bigger decisions than most of us. So, it's really important that people like have a say... You can't really talk about participation and then leave some people out.'
> (Linda, Young Person)

The principal methods used during this aspect of the research were:

An initial stage of group discussions, lasting one hour each that were spaced across a school year, beginning in the autumn term. In these group sessions, there was a focus on young people generating, explaining and contextualising their views regarding the questions which were posed to them. As indicated above, for the less easily accessible participants, individualised engagement occurred, and sessions took place during the same timeframe within which school pupils participated in the research. These sessions varied in length, from approximately half an hour, to in excess of an hour, depending on the topic and willingness of the young participants. Within group discussions and during individual sessions, young people were encouraged to interpret the questions that they were offered: for example, 'where does participation occur?' and to ground their responses not in what an adult might want to hear, such as reflections on how their school promoted rights, but rather, their experiences. During sessions, individual young people were invited to write down their thoughts using sticky notes, offer vignettes (if they considered that these were relevant) to further illustrate these, and to engage in discussion so that a broad range of thoughts and experiences could be shared. Thus was generated a large corpus of data concerning what particular aspects of 'participation' meant: on a practical basis, the visible representations of the sticky notes, together with the vignettes were complemented and expanded by group discussion, during which further sticky notes and vignettes were offered. This element of the research was characterised by robust discussion and challenge from peers about why certain views were held.

Ecological modelling was then used to facilitate a process of relationship discernment and prioritisation. For example, when talking about 'who' was involved in their participation, young people defined layers of relationships flowing from those most closely associated with them, to those who were distant (Figure 1).

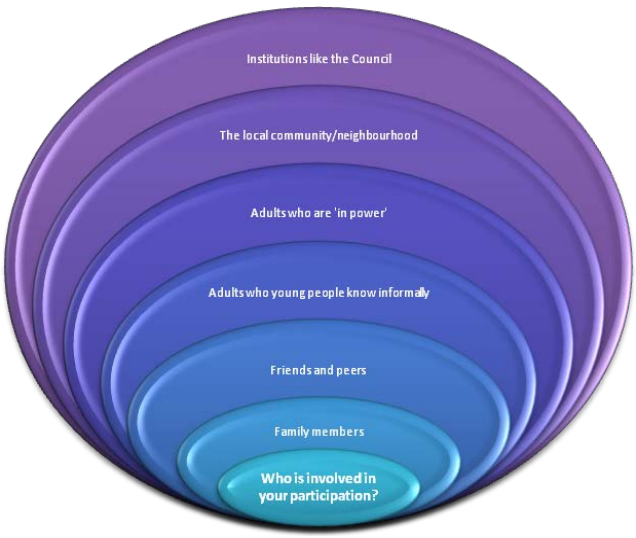

Figure 1 - Output from ecological modelling concerning 'who is involved in your participation?'

Following group discussions that promoted the generation and sharing of ideas, further engagement with the young people took place. During this engagement,

feedback from different groups was offered to young participants. For example, students in Year 7 considered what those in Year 11 said. This part of the methodology was reflexive and resembled a 'House of Lords' approach to the consideration of the views of others (Palgi, 2007). Hence, the views of young people across the school years were shared with each other, and then with those who were 'less easily accessible' (and vice versa). Reflection occurred, with a process of scrutiny, refinement and the posing of questions taking place. Importantly, this process resulted in a spectrum of ideas, experiences and opinions being shared, debated and sublimated into clearer understandings of participation in its various dimensions.

Young people's participation in this stage of the research had powerful consequences. Not only was a significant corpus of data created, but, and crucially, the operation of the 'Lords' effect deepened the quality of data and the ways in which it was understood, contextualised and appreciated. For example, whilst it may have been anticipated that young people would err on the side of generating more policy-styled definitions of participation, they instead followed a path which was arguably (to adult policy makers at least) heterodox. Also, the in-building of reflexivity achieved something else, and this was that the often very different life experiences of young people were shared, enriching discussion. Further, the blending of views and on-going process of challenge and discussion led to the articulation of often consensual, informed opinion. A particularly noteworthy facet of the research process, directed as it was by the young people, was that less easily accessible participants, who often had had to make quite different decisions to most school pupils, were able to offer their views, inspiring further discussion and encouraging lateral thinking. As Richard commented, his experiences, whilst sometimes painful, could be used to positive effect:

> 'I mean, I could so make a difference, I really could. I'm not dumb. Yeh, I've gone through the system a bit, but that's made me a stronger person... I know what it's like not to be allowed to do things, even the simple stuff and it's hard. But it doesn't have to be that way... '
> (Richard, Young Person)

In total, 99 young people, aged between 11-18 years old participated in the concepts and design development stage of the research. More detailed information regarding the sample group is contained in Table 1 below.

Table 1 – Details of the young people who were engaged in the concepts and design development stage of the research

	Number of young people	Sub-Total
School pupils		
Year 7	25	25
Year 9	26	51
Year 10	23	74
Year 11	19	93
'Less easily accessible' young people		
Youth Inclusion Project attendees	2	95
Resettlement and Aftercare Programme participants	4	99
Total		**99**

Reflecting upon the role of young people within the research process, it is noteworthy that, given the 'least adult' role of the researcher, young participants were encouraged to organise and facilitate leadership of their discussions. During the research, a fluid approach to leadership swiftly became evident. For example, in group work, a democratic approach to electing leaders was adopted (without reference to the researcher); provision of space for those who had specific contributions to make (especially when they had poignant personal experiences to share) was consensually determined; and robust but respectful discussion took place, with young people, including those who might not usually have participated, making contributions: such was the passion that the research evoked in them. Beyond leadership, a variety of roles were performed by young people, amply evidenced when some of them sparked debate about what should be focused upon within exercises, and group work that concerned the ways that data could be presented, ranked and made sense of. A critical facet of this research was that, whilst an adult researcher developed a 'skeleton' framework for inquiry, this was fleshed out, contextualised and applied by young people in ways that were meaningful to them. Although the research process possessed a framework, an organic, young-person-led approach to engagement occurred: young people played a powerful and determinative role in the research. The contrast between the role of the young people and the adult researcher was not forgotten during discussion and, as Wyn accurately noted when new understandings of participation were being developed, the researcher as an adult did not:

> '... know everything. You might work at the University, but you still need us: that's why you're here!'
> (Wyn, Young Person)

2. How young people understand 'participation'

It is impossible, within this article, to relate the full spectrum of views that were offered during the research. However, and for the purposes of this article, the clear views offered by young people concerning the following issues are presented:

- Talking about young people's participation: Adults have their own views
- New understandings of young people's participation

In the narrative below, key messages articulated by young people are offered. Such messages were discerned via a process of thematic analysis (Ritchie and Spencer, 2002; Aronson, 1994). By analysing young people's data through thematic analysis, their voices were heard, and a framework for understanding participation applied without the need for data to be restricted by a pre-existing lens (see Smith and Firth, 2011). This type of analysis was adopted since hearing young people's voices was pivotal, and, since the research was exploratory, with young people not, for instance, evaluating existing materials such as participation-related policies, nor being asked to think about participation in a specific way (they made choices about particular emphases), such an approach allowed the things that they considered to be important to become visible.

2.1 Talking about young people's participation: Adults have their own views

A critical facet of the research within which young people engaged was that it sought to provide a conduit through which they could articulate their understandings of 'participation'. The range of data generated in response to the question of, 'what is participation' was significant and, in terms of adult-generated definitions, generally critical. Repeatedly, young people expressed the view that statements and practices which were allegedly participation-focused did not actually reflect the realities that they experienced. There was a perception by young people that, effectively, two understandings of participation currently existed: that promoted by adults; and that experienced by young people. This reality was explained by the young people; for instance, Ben said that:

> 'Let's be clear about this yeh? Is this about our participation or the participation that they [teachers and adults] talk about to us? C'mon, do you want us to be us when we answer or say what others have said? If it's us, we might not say something you like...'
> (Ben, Young Person)

Whilst Ben's statement is laden with pessimism, his opinion reflected that of many other young people. However, beneath the pessimism of young people, a counter-view was voiced; one that reinforced the centrality and unique capacity that they had to create an authentic definition of participation. This counter view was tempered though by a resentment which coalesced around the standpoint that adults were subtly, through, for instance, 'participation initiatives' (Sloam, 2016; Coyne and

Gallagher, 2011; Lansdown, 2010) trying to embed specific understandings of what form young people's decision should take (this normally being structural), and the rationale that underpinned participation. Young people's tolerance of this adult-inspired agenda was evident, but, for many, adults' use of their power to impose this agenda (even subtly) was having an adverse effect on the fabric of participation itself:

> 'They don't see what they're doing, the adults... You can't have it both ways. You either want people to get involved... or you don't. The best we get given is that older people sort of look down on you and say, 'That's what you have got to do. Play the game.' We either have to play by their rules or we don't get any say. How is that right?... We're putting up with them for now...'
> (Adrian, Young Person)

Enthusiastically arguing that their participation in decision making was an omni-present aspect of everyday life, young people said that existing definitions of participation 'locked' them and the very practice of decision making into a limited space, whereas it was pragmatically much wider. When explaining what participation meant to them, young people suggested that explanations needed to move away from traditional foci and instead be more holistic:

> 'Do we discuss what we do in school, or can we talk about when we're at home, when we're with our friends around the village, or somewhere else? Or, do we talk about it all? There's so much we could say.'
> (Alys, Young Person)

Demonstrating an ability to discern and explain the complexity and multi-dimensional nature of their decision making, young people made it clear that new understandings of participation were needed. Adamantly and repeatedly, young people research participants claimed that existing definitions of participation were sterile and devoid of interactional reflexivity. In the view of young people, statements and policies developed by adults did not capture nor reflect their experiences of participation.

Challenging the status quo, young people argued that three central problems exist concerning extant and largely adult-inspired understandings of participation:

- Adults control how participation is understood, and such understandings do not accurately reflect how it is actually lived and experienced by young people.
- Current understandings of participation tend to relate to the actions of individuals rather than acknowledging the more complex social fabric of peer groups, friendships, families, interest groups, political movements and communities.
- Appreciations of young people's participation in decision making concentrate largely on processual and formal engagement opportunities whilst, in reality, most decision making occurs in the mundane or, to use research participants' terminology, the 'boring' space of everyday life.

The problems identified by young people were unexpected, yet revelatory. What young people said concerning the concept of participation revealed the critical importance that they attached to their decision making and the necessity for appropriate understandings of participation to be created.

3. New understandings of young people's participation

Through research, young people articulated new and potentially deeply impactive understandings of their participation in decision making. Three new and complementary understandings were offered and these were, in the view of young people, crucial to appreciating how they participated in decision making and illustrated the importance that they attached to this aspect of their lived realities.

3.1. Actually making participation happen

Young people were very clear in articulating the view that, in order to understand their participation, adults had to understand how it 'actually' happens. At a first glance, the term 'actually' may seem a little odd. However, and to ensure that what is reported from the research remains authentic, this term is used because it flows directly from what young people said. Repeatedly, young people adopted a specific type of language when they described what they thought 'actually' happened when they participated, and what participation 'actually' meant to them. Rebecca usefully explains why this terminology matters:

> 'You wanted us to talk about participation. This is *actually* what it is. You asked us, and now we are telling you, from what we know, this is *actually* it, and this is *actually* what we understand about it.'
> (Rebecca, Young Person)

The term 'actually' was ascribed specific meaning by the young people and, throughout the course of the research, they repeatedly explained that their use of 'actually' meant that they were relating a truth that they understood. 'Actually' was not a slang term, but a value-laden and powerful descriptive tool.

Two 'actuallys' were identified by young people: intention, and then communication. Each of these will be discussed in turn.

3.1.1. You must actually intend to participate

Young people believed passionately that participation could not occur unless there was an actual intention to participate. Participation was not something that could happen by accident or proxy: instead, young people stated that they had to use their free will to participate. Thus, participation sprang directly from the young people themselves. The necessity of intention was deemed to be fundamental by young people. Interestingly, this 'actually' was understood in somewhat abstract terms when

the outcome of participation was considered, eschewing an adult notion that participation is a beneficial activity because it creates positive outcomes[6]. When asked whether intention and outcome were linked, young people suggested that they were not necessarily intertwined:

> 'We all make decisions all the time. But, we don't always know what's going to happen when we do make them. Other people can get involved and they might change things, sometimes for the good, sometimes for the bad. All we know is if we want to do it. We haven't got crystal balls we can look into, so sometimes you've just got to get on with it.'
> (Christine, Young Person)

Such an understanding might appear self-evident, yet a nuanced, underpinning argument buttressed this 'actually': intention was the lodestone of participation, and, whilst specific participative outcomes may be desired, the simultaneous reality that other people intend to make decisions too can commute or amend decision making outcomes. Whilst the final outcomes which flow from participative acts might not necessarily be absolute, nor even positive, the critical importance of intention is, since without it, decision making, according to young people, does not meaningfully take place.

Young people recognised that they could be forced to participate in something and that, sometimes a type of complicity occurred within the process of participation: yet, this had consequences. If, for instance, a person was coerced into making a decision, it was adamantly argued that the quality of that decision would be lower than if a purer application of intention had occurred. Developing this argument further, 'best' and 'worst' quality types of participation were defined, based upon the ability of a young person to act upon their intentions. These typologies were linked to the quality of participative outcomes. Therefore, if forced to make a decision, young people suggested that this would represent low quality participation and would, in their view, most likely result in a poor quality, if not negative, outcome. The possibility of intention being usurped by coercion was taken very seriously by the young people who claimed that adults engaged in types of activity which were hypocritical. Whilst adults might promote a rhetoric of participation, they often, in practice, instead sought to limit participation and themselves direct what young people should do. Michael's frustration in this respect was clearly visible because he felt, at various stages in his life that he had:

> '... been robbed. It's a bit rich them [adults] telling us to more for ourselves then robbing us of being able to do it. What's that saying?... Yeh, that's it, giving with one hand then taking away. But they can't take away me wanting do something, that's mine.'
> (Michael, Young Person)

[6] HM Government (2011) Positive for youth: A new approach to cross-Government policy for young people aged 13-19. London: Department for Education.

Reflecting upon the interplay between intention and coercion, young people felt that whilst it was rare for adults to directly compel them to participate, a more subtle approach was frequently adopted, which was a form of manipulation (Hart, 1992). The perceived willingness of adults to manipulate young people's use of their intention to participate generated strong reactions. At times indignantly, young people felt that interference by adults in their intention to participate was unjust and could impact not only on decisions which were made, but also on the ways that they understood and practiced decision making:

> 'This is where the adults get it so wrong. If you try to force someone to do something, that's not participation. Even when it's really subtle like in the class when a teacher sort of persuades you, that's not participation. You see? You don't make that decision, it's taken from you... To participate, you have got to want to do it. End of.'
> (Kyle, Young Person)

There was an aspect of reflection within the process of a young person actually intending to participate. Young people asserted that once they had decided to make a decision they internally, and sometimes without overt thought, clarified what that decision would be. Explaining this further, young people said that once an intention to make a decision occurred, this naturally proceeded into thought about what this could entail in practice. Intricately, young people described how intention operated, and this involved the exposition of significant detail. Hence, when Daisy described how intention became a reality when she wanted to visit friends, she said that:

> 'You don't go just, 'oh I'm off there' do you? No, you run through how it could all work... Like me, I wanted to see my friends, they live about 5 minutes away on the bus. I decided I wanted to see them, do you see that? Then, I had to think of all the little things that I needed to do before I could see them. It's like you take that next step in your head.'
> (Daisy, Young Person)

The views of the young people concerning this aspect of their participation were powerfully stated. Across age ranges and both the mainstream and less easily accessible groups of participants, the centrality of intention was reinforced, sometimes in very strong terms. The power of a young person to make a decision was something that excited passion and, without reference to seminal documents such as the UNCRC, the understanding of young people that they possessed, inviolably, the right to intend to participate, was repeated frequently during the research. Rather than reflecting more processual or mechanical approaches (which is arguably what much policy currently promotes), this more abstract understanding of what actually happens in decision making goes further and provides a new and interesting lens through which participation can be seen.

3.1.2. Participation must actually be communicated

The young people also identified a second, and equally important understanding of how participation 'actually' happened. This was that participation had to be communicated. Building upon their use of intention, young people said that they then had to actually communicate this. It was interesting that young people, whilst being very specific and precise concerning what intention meant, were more flexible in their understanding of communication, and identified a range of forms for this, for instance, e-communication or via physical means.

Communication was understood to be much more than a mere act of notification. Rather, for the young people, 'communication' had two components: engaging with others; and secondly, actually making their participation operational. Marissa provided a practical scenario which revealed the rationale of this understanding:

> 'You know, I might want to go and hang out with my friends after school. So, I can make a decision, but just sitting there knowing I can make a decision's nothing. I have to get up, tell my friends to meet me and that I'm going out, then tell my parents I've decided to go out and then go. So there's lots of telling people going on. What's the point in keeping it to myself? You've got to tell someone else otherwise the decision doesn't work.'
> (Marissa, Young Person)

The two components of communication which were associated with participation deserve further explanation. With regards the need to engage with others, young people stated that participation was not something that a person did on their own. Opposing notions of individualism, participants instead emphasised communities, networks of friends, families and wider society in a narrative that reflected social capital discourses which coalesce around, for instance, social networks, trust and attachment (Schaefer-McDaniel, 2004; Morrow, 1999). Juxtaposing the centrality of intention with the need to engage with others, young people expanded and layered what happens post-use of intention. Since decision making normally involved other people, communication became a part of the internal process of participation, leading individuals to think about and conceive of what they were doing, as well as focusing their attention upon how their intention would manifest itself. This process was described by Rhys:

> 'Yeh, I can decide some things, but you know, you've got to know what you're doing too... So, when I want to go to town I've got to tell my Dad, then sort out who I'm going with, what bus and where we go. So, there's a few things there I have to think about. It's not as simple as just saying, 'I'm off to town'. So when you tell someone, you've got to have thought about what comes next.'
> (Rhys, Young Person)

Uniting the ways in which they understood participation to actually happen, young people dissected the process of participative interaction, revealing a systematic

cycle of participative 'actuality', i.e. that was what they understood actually happened. The cycle is presented in Figure 2 below.

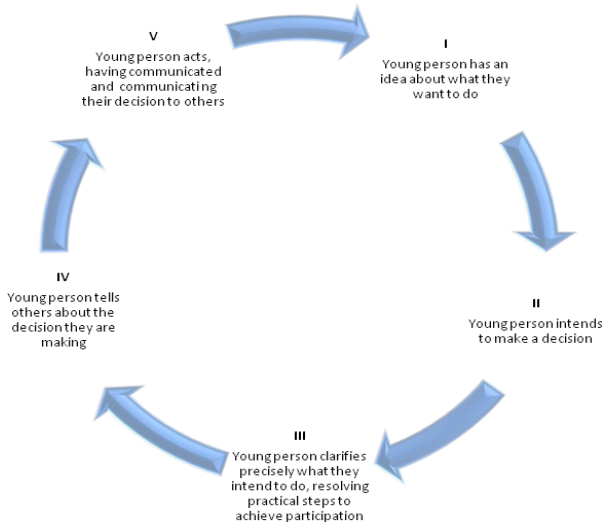

Figure 2 - The cycle of participative 'actuality'

In Figure 2, points I and II constitute what happens when intention is used, points IV and V relate to communication, and point III is the bridge where both understandings meet and synergise. The cycle of participative actuality is important, because it make visible, important aspects of young people's understanding of participation, namely that it is grounded within and created by the individual and those around them. As stated by Matt:

> 'Making a decision starts in you, then you go somewhere else with it... You can't just pass something like a law and make people make decisions. Nah, it's about you, what you think about, what you want to do, who's gonna be there as well, who you tell: really, how you go about it...'
> (Matt, Young Person)

The articulation of new understandings about young people's participative intention and communication, and the ways that these enable decision making to actually happen is striking, and moves beyond traditional, policy-focused discourses. Such understandings offer a unique and (for adults) challenging way of understanding participation.

3.2. Participation is a relationship

Young people's views regarding intention and communication, and the ways in which these enable participation to actually happen are concerned with how the decision-making process occurs. The young people identified though a second

understanding of participation: that it is a relationship. Echoes of this reality became evident when young people spoke about communication; i.e. communication had to occur with someone, and it was, in the view of those who participated in the research, the case that relationships were deemed to be fundamental to the working of participation (Spencer et al., 2000).

Rejecting the importance of individualised forms of decision making, young people said that relationships within participation had positive value:

> 'Well, you don't just go and say I'm doing this on my own, even if you don't like it when you are in a group. People will tell you pretty soon what they think of that. You have to work with people to get a decision, you see, it's a sort of shared participation.'
> (Gethin, Young Person)

Rebuffing a neo-liberal type of emphasis on the autonomy of the individual, sharp criticism of dialogue that spoke of 'me' was voiced. Rather than accept the importance of the individual, young people instead promoted collegiality, families and neighbourhoods (Putnam, 2000). This narrative was, by young people themselves, acknowledged as contrary to contemporary debate, but yet, possibly transformational:

> 'They [politicians] are on telly all the time, saying young people should do this and that... They make out that by doing stuff on your own, you can make a difference. That's not really the truth though is it? You don't really make a difference on your own. You can do some stuff, but when you do it with others, your mates, the people you know and even your families a lot more happens. Why don't they talk about that?'
> (Jacob, Young Person)

Offering a strong case for a more relational type of understanding of participation, young people hinted at a type of proportionality, which they suggested was inherent in participative activity (c.f. Article 12:1, UNCRC). What the young people stated was that, although individuals may possess the power to make decisions (they reflected, for example, on the power of intention which they possessed), there was a corresponding need for constraint. As Steven helpfully reflected:

> 'There is no 'I' in team. We all live with other people and mix with others, so you know, whatever you decide to do can affect everyone else.'
> (Steven, Young Person)

Constraint in this context was not seen as a 'brake' on participation, but a natural consequence of acknowledging that individualistic types of decision making could be hurtful, selfish or damaging to others. Whilst not articulating specific constraint mechanisms, young people mooted that there was a need for individuals to reflect on the consequences of their actions. The deeply reflective approach to participative constraint advocated by young people was seen to be in contrast to the actions of some adults, who, when discussing decision making, promoted a strong

concept of individualism. Such a view was rejected by young people and received, unsurprisingly, much criticism:

> 'It's like they say you should be selfish. It's like the Pot Noodle advert, it's all me, me, me. Well, they [adults] can say that, but we don't think it. If you want to make things better, you have to get other people to work with you. It's really hard if others are against you and you don't get anywhere. No wonder they [adults] are never happy if they behave like they tell us to.'
> (Aled, Young Person)

Expanding their explanation of the cycle of participative actuality, young people proposed that a balance between the participative potential of individuals and the need to work within a communal framework was necessary. Explicitly, it was recognised that participation was a constant and multi-layered phenomenon: at the same time, many individuals made decisions and there were consequences from each of these. This constant state of participative activity was like:

> '... a spider's web, you knock one bit and all the bits know about it...'
> (Menir, Young Person)

To promote relationships and to embed decision making within them, it was suggested that individual participation should be seen in the context of it being a type of co-equality, in which a form of subsidiarity exists. Individuals can make decisions, but these should be operationalised in partnership with others. Such a communal pooling of participative power could create beneficial impacts, notably a higher quality of decision making (where individuals inform and support each other), shared knowledge of participation techniques, and a broader use of participation to create positive outcomes. Elizabeth's views here are helpful:

> 'I'm a member of my youth club. You get to choose what sort of things you can do there. But sometimes, even though you've decided, you've got to talk to the worker and run through things. They don't normally stop you, but you get little comments and things. They help you to understand things you hadn't thought of...'
> (Elizabeth, Young Person)

It is interesting to note that, although often critical of adults, the young people, as Elizabeth demonstrates, still believed that relationships with adults were, in participation terms, important. All relationships, between young people, their peers and adults were seen as critical, both for individuals and society as a whole (Morrow, 2005). Poignantly, even though the young people believed that adults sought to manipulate their participation, they nevertheless saw the power of participative relationships as being potential opportunities for the refining of understanding and the evolution of future decision-making partnerships. In that context, a strong, yet sometimes tension-filled conception of relationship was described: one that reinforced the need for adult recognition of young people's power to participate, based on the

exercise of their intention, communication and through relationships, and not affected by the corrosive effects of coercion.

3.3. Participation is found primarily in the mundane

The third understanding offered by young people reflected their belief that their decision making is located primarily in the mundane. By 'mundane' is meant types of decision making that concern everyday life and existence. Mundane participation was differentiated by young people from formal and structural opportunities for engagement[7]. Through exploring different types of decision making and their locations, young people gave a low priority to formally constituted participative spaces such as school councils (Wyness, 2009). Such a conclusion was reached because, in their lived experiences, young people infrequently participated in formal decision making. Whereas it was tacitly acknowledged that formal types of participation could play a significant role in helping them to get their voices heard, young people felt that, to properly understand and situate their decision making, the primary focus of that understanding should be on the mundane.

The demarcation between formal (or what young people called 'big') and 'boring' (the term young people used to refer to mundane, but nonetheless important) decision making was considered to be important. Broadly, young people exhibited a cynical view of formal decision making. Lucy, for instance, said that:

> 'I am part of a committee where I live which wants to make a difference for kids in the area. To be honest, it's interesting, but I don't see it as changing much for anyone... perhaps those of us in the group.'
> (Lucy, Young Person)

Reflecting upon the emphasis by adults on formal types of decision making, young people stated that most of their decision making was 'boring', yet often profound (Chawla and Heft, 2002). Rejecting the perceived orthodoxy that participation needed to be linked to formal structures, young people believed that the power and practice of participation resided mainly in what could be described as unimportant decisions, such as how young people should spend their time at home:

> 'I choose to do loads of stuff all the time and to me, that's 'participating'. When I get home from school, I can go on my computer or just lie on the bed or, I don't know, ring my mates. Does anyone else really care? Doubt it! But I do...'
> (Stephen, Young Person)

Rejecting an overt emphasis on formal decision making by adults, young people highlighted the discordance between adult-promoted participative rhetoric which

[7] National Assembly for Wales (2016) Llywydd commits to establishing a Youth Parliament, National Assembly for Wales, 19th October 2016. Available at: http://www.assembly.wales/en/newhome/pages/newsitem.aspx?itemid=1632 (accessed 19th October 2016)

suggested that structural decision making was something that should be encouraged. In fact, it was argued that this type of promotion obfuscated the true meaning of participation and created instead a much more limited discourse concerning participation (Hart, 2013). This, in young people's views, skewed discourse and diminished the reality of an omni-present state of decision making by young people. It was suggested that adult-favoured formal approaches to participation also led to the perpetuation of a misrepresentation; one that, ironically, could exclude rather than embrace and develop, young people. Conversely, mundane decision making was seen as an instrument that reinforced participative power and opportunity and which actually enhanced young people's lives. Commenting on his own life, Osian, when asked about his own engagement in decision making said that it was largely:

> '... boring. Yeh, that's it, most of it is just boring when you think about it. You know, I get up and I decide to have a shower, then I have breakfast, and I get ready for school. That's me making decisions all the time, but really, it's boring... just what we do all the time.'
> (Osian, Young Person)

Unequivocally, preserving a focus upon mundane or 'boring' decision making was the young people's priority and was deemed to be central to understanding their participation. It was noted too that in reality, mundane decision making had transformational impacts upon young people's lives and often enabled them to make a difference. For example, Patrice said that:

> 'I look a lot after my granddad. He's really ill and lives with us. So, as well as making decisions about me, I help him too. So, I have to decide, when he's bad and my parents aren't about when he needs some things, when I need to call my parents or someone else for help, or just when me and him should just sit and have something to drink. I have to make lots of decisions. Some of the decisions aren't really big and I think that most people wouldn't think they are important: I doubt many adults count that as important. But, they are important to him and me. That's what counts.'
> (Patrice, Young Person)

Patrice's example of mundane participation makes a critical point. Whereas much decision making may be mundane, this does not mean that it does not matter. Instead, and perhaps radically, the young people suggested that mundane decision making matters a great deal, but since adults have rationalised understandings of participation, this essential and life-changing aspect of decision making is ignored.

Interestingly, young people believed that the emphasis, in policy and within structures, on formal, or 'big' decision making, was intentional, and negative. Through formal, adult-created and controlled structures, young people's participation could be regulated and conformed to adult expectations. Partly, it was suggested, this happened since adults did not know how to respond to young people's decision making because they were scared of its effects:

> 'They [adults] are like, 'Come on, get involved'. When you do, it's not normally something you can do much about. They [adults] plan everything and then you have to do as you're told. That's not getting involved, that's just doing as you're told. They [adults] just go up the wall when you actually do something you feel you should, or even just want to... it's almost like they are afraid and don't trust you...'
> (Pedr, Young Person)

However, although cynicism was expressed, young people suggested that if adults listened to young people's views about participation, they would, rather than wishing to regulate engagement in decision making, celebrate what happened in relation to mundane matters. There was space for formal decision making, but this should build upon the much more frequent and important reality of mundane participation. Certainly, the skills, practice and experiences created through involvement in mundane decision making itself could give birth to potential that, instead of being ignored, might actually enhance structural forms of participation.

4. Reflections and conclusion

Young people's understandings of participation sit at the heart of this article. As indicated above, there is an almost universal acceptance by governments, NGOs and activists at supranational, national and local levels that young people's participation is important and should be promoted. However, what the research described in this article demonstrates is that, for all of the fine rhetoric, young people consider adult-inspired understandings of participation to be deficient. The key reasons for this conclusion are that:

Adult-devised understandings were, in the view of young people, made by adults and for adults, not young people. The reasons for this appear various, but include the convenience of compliance with an adult-driven participation agenda, the retention of power, and a misunderstanding of what young people's participation means and can achieve.

Participation is not something that can be constrained or fully explained within policy or legislation. The young people eloquently spoke of the personal and transformative power of participation and the reality that it springs directly from them, through their use of intention and communication, potentially enhancing their relationships and everyday lives. Certainly in terms of public policy, there is little recognition of this. Such power matters, and could have profound impacts upon young people's development, the formation of future civic society and the direct participation of young people in differing types of participation initiatives.

Clearly, the research suggests that in order for young people's participation to be meaningfully appreciated and comprehended by adults, new understandings of this topical concept are required and this article forms a solid foundation for future examination of this reality. Importantly, the new understandings of participation offered by young people sit very uneasily with more traditional and contemporary policy and 'participative' practice. Despite this, what the research undertaken in partnership with the young people found was that a more sophisticated understanding

of participation exists: that which flows from individuals to the relationships that they have, and is exercised frequently in everyday life and circumstances. These understandings offer governments at global, European, British and local levels a pathway for developing new and meaningful responses to young people's participation. In Wales certainly, with the impending re-launch of a national young people's assembly, the type of insight offered by young people will play a critical role in informing future government policy.

Whilst it is emphasised that this article does not seek to denigrate or undermine efforts by adults to promote young people's participation, its tentacles are far reaching, offering adults, especially decision makers, better understandings which can transform opinion and practice. Furthermore, the findings cannot just inform, but radically change debate concerning young people's participation. In particular, the implications of the findings offer an invaluable opportunity for governments, NGOs and pan-national partnerships to respond directly to what young people have said, and, drawing upon their views, to transform the very essence of contemporary debate concerning participation as a global priority, thereby creating a new and vibrant vision of young people's decision making. This vision, which would necessarily be grounded in partnership, could constructively be used to bring about the revision, re-alignment and enhancement of existing approaches to what is a popular and often-promoted facet of young people's lives.

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PÉTER RÓBERT, DÁNIEL OROSS AND ANDREA SZABÓ * Youth, Precarious Employment and Political Participation in Hungary

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Abstract

Young Europeans' political responses to the economic crisis have neither been uniform nor overly promising for the future of democratic Europe. We seek to identify potential causal relationships between young peoples' employment status and choice of political participation (i.e. both traditional and non-traditional forms of political participation, as well as emerging alternatives). Although politicians and academics highlight that young people are increasingly disengaged from conventional politics, and papers have been published about different aspects of this topic, young peoples' perspectives and generational differences are rarely taken into account simultaneously. In this paper we characterize the consequences of the economic and employment conditions of youth on political engagement. Our paper focuses on Hungary, which has struggled with youth unemployment.

The paper involves secondary data analysis of cross-national surveys, involving six datasets (2004, 2006, 2008, 2010, 2012, 2015) from the European Social Survey (ESS). Results indicate that greater involvement and responsibility in the workplace increase political participation, whereas the impact of the other labour market indicators (unemployment, work flexibility) on political participation is not straightforward.

Keywords: Young people; Employment status; Political participation.

1. Introduction

Since citizens' political and social disengagement is strongly related to their perception of inequality in society (Loveless, 2013: 471), and higher levels of inequality reduce citizens' support for democracy (Krieckhaus et al., 2014: 145) the 2008 economic crisis challenged social cohesion, inclusiveness, and investment in national democracies. Economic insecurity has since risen for nearly all age groups, but youth have been particularly hard hit. Young citizens[1] are most likely to be faced with unemployment and unstable career prospects, and thus feel alienated and disenfranchised from society. In this context, it is important to understand how unemployment and unstable working conditions are contributing to young peoples' political participation.

Following the 2008 crisis, the use of flexible, fixed-term contracts and alternative forms of temporary employment increased, leading to an increase in earnings-related risk and job insecurity for young people at the start of their professional careers. 'Generation Y' is distinct from its predecessors in terms of the precariousness of their place in a society they struggle to enter (Bauman, 2012). This cohort is likely to experience increasing cynicism about work and systemic uncertainty about the future, with little to guide their expectations of what tomorrow will bring. Although we have seen crowds of young people protesting that 'their future has been taken away', we have little evidence about the effects of these forms of employment on political participation.

Individual economic status directly impacts political engagement, with economic status positively correlated to political engagement – from political interest to voting (Verba et al., 1979; Verba et al., 1995). Young Europeans' political responses to the economic crisis have neither been uniform nor overly promising for the future of democratic Europe.

We investigate the nature and extent of youth employment conditions and opportunities in Hungary, with a view to assessing the consequences of youth unemployment and poor employment prospects on political participation and engagement, and thus on the social cohesion and democratic legitimacy of Hungarian society.

2. Literature review

2.1. Changing forms of political participation

Scientific discourse on the participation of young people has oscillated between two extremes. Young people are often described as the apolitical harbingers of an incipient 'crisis of democracy' (Bessant, 2004; Furlong and Cartmel, 2007). Discussions revolve around declining political interest, falling participation, and low turnout at elections in Europe. On the other hand, young people are also heralded as innovators of politics, as creators of sophisticated new forms of participation,

[1] Following the Eurostat system of categorization, young people are defined as being from 15–29 years of age.

especially online (Coleman, 2006). It may well be the case that the upcoming generation is simply more interested in inventing novel forms of political participation (Phelps, 2004; 2012). The argument has been put forward that citizens today, especially younger generations, seem to prefer to participate in the extra-parliamentary realm.

The emergence of new forms of political participation presents a theoretical challenge. Stolle and Hooghe (2011) argue that it might reduce age- and gender-based inequality. Using the Political Action Survey, as well as the European Social Survey, the authors observe that gender differences with non-institutionalized participation have been substantially reduced, and in some cases even reversed, and that women tend to be more active in this regard than men. Younger people also clearly have a preference for non-institutionalized forms of participation. Based on data from the ISSP survey, Marien, Hooghe and Quintelier (2010) found that non-institutionalized forms of participation increase inequality in terms of education, but strongly reduce or even reverse gender and age inequalities. As such, both institutionalized and non-institutionalized forms of participation have specific (dis)advantages from the perspective of preserving equal access to democratic decision-making procedures.

We expand the study of political participation to include not only traditional but also non-traditional forms of political engagement and prospective alternatives. Based on earlier findings of Oross and Szabó (2013; 2017), we differentiate three participation categories. Since electoral participation ('voted in last national election') is the most important form of political participation within the Hungarian context, we distinguish it as the first form of political participation.

'Traditional' forms of political participation refer to participation in political organizations (political parties, unions), as well as forms of participation related to these organizations (such as campaigning, participation at meetings, wearing the symbols of these organizations, etc.).

'Direct' forms of political participation are those that require personal involvement but do not require long-term commitment on behalf of actors (e.g. direct forms of protest such as sit-ins, blockades, and other expressive and symbolic acts). Direct forms of political participation require few resources, are low risk and require low levels of commitment. They include the signing of statements, petitions and initiatives.

As for the link between employment status and political participation, the literature (Lorenzini and Giugni, 2012: 333-335) focuses on the capabilities and competencies useful for political participation that can be acquired in the workplace through work-related experience (Brady, Verba and Schlozman, 1995; Pateman, 1970; Schur, 2003; Sobel, 1993). In this regard, we can distinguish between the *spillover model* and the *civic skills model* (Adman, 2008). The spillover model assumes that participation in the workplace offers individuals opportunities to learn how to participate and to develop roles related to social and political participation (Pateman, 1970; Sobel, 1993). According to this model, 'participation supports participation'; that is, involvement and responsibility in the workplace impacts political participation (Sobel, 1993). Moreover, participatory mechanisms at the workplace are an opportunity to develop a sense of political efficacy (Carole Pateman cited in Adman, 2008: 118). The civic skills approach argues that people participate when they

have resources (e.g. time, money, civic skills), when they have a psychological predisposition towards engagement (e.g. an interest in politics) and when they are recruited (e.g. by voluntary associations or individuals) (Brady, Verba and Schlozman, 1995: 271). Research into the political participation of unemployed youth found that this cohort were more dissatisfied with politics (Bay and Blekesaune, 2002; Bynner and Ashford, 1994). However, unemployed and employed youth participate in voting to a similar extent (Banks and Ullah, 1987; Bynner and Ashford, 1994).

Current research on the topic (Lorenzini, 2013: 182) has pointed out that in terms of the effects of unemployment on political participation, we cannot assume that unemployment represents financial, social, and psychological deprivation for all unemployed youth. It is also difficult to ascertain whether employed people are different from unemployed people, ceteris paribus (Schur, 2003). Moreover, other studies have questioned the direction of the relationship between employment and political participation, as well as the very existence of the relationship itself. Cohen and Vigoda (1999), for example, found that political participation can explain attitudes and behaviors in the workplace, reversing the relationship between the two variables. To solve this puzzle, Adman (2008) tested the effect of work on political participation using panel data. The effect found through a cross-sectional analyses does not hold when one takes into account the temporal ordering of events (first being involved in a specific workplace setting, then participating politically). In terms of new forms of political participation, employment status has only a limited impact on political participation, affecting only consumer activities (Lorenzini and Giugni, 2012).

Increasing social inequalities have mobilized young people, from Southern Europe to Northern America. Both the 'Indignados' and the 'The Occupy Wall Street' movement brought the problem of widening social inequality into razor-sharp focus (Castaneda, 2012: 10; Hickel, 2012). Whereas there has been scholarly debate about the specificities of these movements as political responses to the economic crisis, few studies have analyzed youth political participation in relation to employment status.

2.2. Labor market flexibility and employment relations

This study brings together two fields of research: political participation – mostly investigated by political scientists, and employment relations – mostly analyzed by sociologists and economists. This requires greater elaboration of the independent variables from the perspective of employment.

Employment relations are typically investigated at the individual (micro) level, and are considered important features of social and political integration. Individual employment relations are embedded into the organizational structure of the labor market. While the labor market operates at a macro level, its consequences for individuals (e.g. being employed or unemployed, working under more or less flexible employment conditions) appear at the individual level. In this way, both macro conditions and regulations create differences at the micro (individual) level. Individuals in society are affected in an unequal way by (macro-level) organizational and institutional arrangements, which make employment relations one dimension of

social stratification. This is not a new but a rather well established concept (Baron, 1984; Kerckhoff, 1995).

One main feature of these processes is the transformation of standard employment relations into non-standard ones, increasing the flexibility of working conditions. This transformation has been the subject of sociological and labor market studies since the 1980s (Boyer, 1988), which expanded around the turn of the century (Strath, 2000; Kalleberg, 2000). Authors claim that labor market flexibility is part of the emergence of risk society, but the danger of such risks and precarious employment, a typical outcome of labor market flexibility, differs for individuals. Consequently, flexible labor conditions increase social inequality. This process has been ongoing for a few decades and has shown how the risk of unemployment and also the risk of being precariously employed is distributed unequally among individuals, increasing polarization (Breen, 1997; Kalleberg, 2011). How social risks arise, how labor market flexibility endangers social safety, and how social inequalities consequently emerge is particularly evident in post-communist societies where full, standard employment conditions disappeared for a significant proportion of the labor force after the collapse of socialism (Cazes and Nesporova, 2003).

Although the direction of causality is frequently debated, this study claims conceptually that:

1) employment relations – measured here using the incidence of unemployment and the features of precarious employment – are distributed unequally among individuals;
2) unemployment and precarious employment weaken the social integration of individuals (not investigated here);
3) unemployment and precarious employment have negative consequences on behavior (e.g. political participation) and this latter relationship may be analyzed by defining various forms of political participation, as outlined in the paper.

There are conceptual grounds for selecting indicators for employment relations based on the literature. 'Unemployment' may not need much explanation in terms of social and political (dis)integration, but see Gallie et. al (1994). Current unemployment matters most, but earlier experiences with unemployment can also have a detrimental impact. In terms of 'precarious employment', the form of any contracts is a crucial indicator, as fixed-term contracts increase employment uncertainty (Schömann et al., 1998). Standard employment refers to jobs with an eight-hour daily work load. Part-time jobs typically used to be taken by women (who could thus combine work and child care) but labor market flexibility has increased the variety of working time arrangements for all employees, with attendant consequences on social life (O'Really et al., 2000). Finally, research indicates that a low level of job autonomy is also a characteristic feature of precarious employment (Kalleberg, 2011; Letourneux, 1998).

2.3. Case selection

In this paper we focus on Hungary, which has struggled with youth unemployment, and whose situation is typical of semi-peripheral EU countries.

1. After the regime change in 1990, more than one million people lost their jobs. This caused significant, almost unsolvable problems in the labor market (Laky, 1996). By the end of the 1990s employment stabilized at a persistently low level (Gazsó and Laki, 2004; Gazsó, Laki and Pitti, 2008) and was accompanied by a long-term unemployment rate averaging six percent. Regarding their integration into the labor market, four social groups were most affected: young people, people with a low level of education, elderly employees, and Roma.

2. The global financial and economic crisis (2008-2009) exacerbated the already fragile situation (Szabó, 2013). In terms of macro-economic performance, Hungary fared worse than the EU28 average, but Hungary is not considered to be a crisis country in the way that Italy, Spain, and Greece are. After the 2008 economic crisis, youth unemployment remained 'just below' the EU28 average in Hungary[2], which is why it can be considered a typical, semi-peripheral EU country.

3. After the elections in 2010, the new government adopted a number of measures that resulted in a substantial improvement in the employment statistics (Messing, 2012). Early retirement was restricted, rules relating to disabled pensioners were modified, and the government launched a public works program (Koltai and Kulinyi, 2013). Despite the fact that the statistics had undoubtedly improved by 2013 in comparison with the EU (among 20–64 year olds) the labor force participation rate of Hungarians was still the fifth lowest (63.2 per cent; the lowest was in Greece at 53.2 per cent)[3]. The long-term (more than 1 year) unemployment rate was 50.4 percent, 3.7 percentage points worse than the 2012 figure published by the Hungarian Central Statistical Office[4]. Those excluded from the labor market have huge difficulty in finding their way back, since the average duration of unemployment rose from 17.6 months to 18.0 months in 2013. It is extremely problematic that the youngest segment of potential employees (15–24 years old) are faced with unfavorable employment and unemployment conditions: their employment rate only reached 19.8 percent (and unemployment rate 27.2 percent) (KSH, 2014).

4. As for changes in participation trends among the whole population, the level of participation in non-electoral forms of political participation compared to electoral participation is still low; electoral participation is 2.5 to 3 times higher than the most preferred other form of participation (Kern and Szabó, 2011: 22). The level of non-electoral participation is low in Hungary and the difference between young people and

[2] Youth unemployment data is from the Organisation for Economic Co-operation and Development: OECD (2015) Youth Unemployment Rate (Indicator). DOI: http://doi.org/10.1787/c3634df7-en Accessed: 28-03-2017.

[3] Eurostat (2014) Employment rate 1992–2013. Available at: http://epp.eurostat.ec.europa.eu/tgm/refreshTableAction.do?tab=table&plugin=1&pcode=tsdec420&language=en

[4] KSH (2014) A KSH jelenti. Gazdaság és társadalom 2013. I–IV. negyedév (The Central Statistical Office Reports. Economy and Society 2013. I-IV. Quarters). Budapest: KSH.

adults in this regard is high because young Hungarians take advantage of very few forms of non-electoral participation (Oross and Szabó, 2016). Unlike young people in crisis countries, young Hungarians were not mobilized by recent movements that were a political response to the economic crisis.

3. Research questions

We seek to identify potential causal relationships between the increase in labor market inequalities for youth and their political attitudes and choice of political participation (e.g. expanding forms of both traditional and non-traditional forms of political participation, as well as emerging alternatives). Beyond considering youth unemployment we focus on the use of flexible, fixed-term contracts and alternative forms of temporary employment because young people are typically employed in these ways (Bertolini, 2012). Since there is little evidence about the impact of unstable work conditions on political participation, we seek to reveal if young people employed in flexible work participate less, or are rather more active in new forms of political participation.

In light of the topic of this paper – the relationship between labour market inequalities and political participation – the employment situation in the country is a possible contextual effect, having an influence on activity and behaviour. Based on official national statistics, Figure 1 provides information about the employment rate, participation in the labour market, and unemployment in Hungary for the period 2004-2015. Figure 1 also shows that in Hungary participation in the labour market was steady from 2004-2008 (employment rate of around 58 percent; unemployment rate around eight per cent). The 2008 economic crisis had an immediate and negative impact (employment rate 61 per cent; unemployment 10-13 per cent) that lasted until 2012/2013. Since 2013, due to the public employment program introduced by the government in 2012, the trend has been towards a rise in employment and a decrease in unemployment among all age groups.

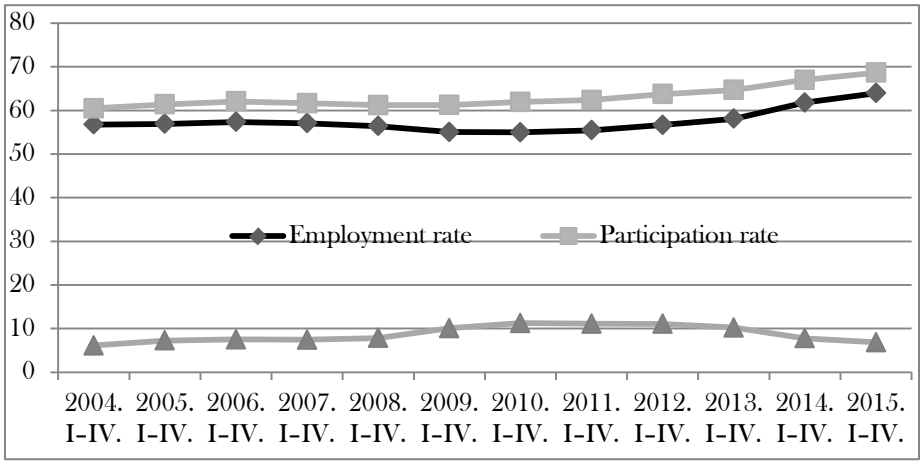


Figure 1. Employment, Unemployment and Participation rates in Hungary (age groups 15–64) (2004–2015). Source: Hungarian Central Statistical Office

4. Hypotheses

1. 1a, Based on the civic skills approach we expect unemployed youth, all other things being equal, to be less likely to participate in elections than employed youth.

1b, Although young Hungarians have not been mobilized by recent movements, we suppose that the rise in social inequality and lack of space in institutional politics for their claims has increased the likelihood of traditional and direct participation of unemployed young people compared to their employed peers.

2 2a, On the basis of the spillover model we assume that flexible, fixed-term contracts and alternative forms of temporary employment generate less participation in the workplace and offer fewer opportunities for learning how to participate. Considering the civic skills approach we argue that young people with flexible, fixed-term contracts have less resources with which to participate. We therefore expect these young people to be less likely to participate than employed youth.

2b, Following the 2008 economic crisis, we may expect renewed interest in political issues and a revival of political activism. This kind of 're-politicization' should be especially pronounced for young people with flexible, fixed-term contracts and alternative forms of temporary employment as they have more civic skills and social contacts than unemployed youth, can organize themselves, and are likely to be affected strongly by the negative externalities of the crisis (e.g. uncertain future prospects). In particular, we expect these young citizens to be active in direct forms of political participation.

5. Data and methods

In this paper we employ European Social Survey data from rounds 2–7. Thus, our data cover roughly one decade from 2004-2014. Round 1 was omitted because one of the predictor variables used in the analysis (job autonomy) was not available. Data about Hungary from these six rounds were merged, leaving approximately eleven thousand observations. A process of pooled data analysis was carried out to allow the investigation of changes over time by taking the level of significance in temporal variation into account. Design weights were employed for the data, as was a process of age selection; only respondents aged 15–65 were investigated.

It is also worth mentioning that the fieldwork for the Hungarian surveys did not match perfectly the official timing of ESS data collection rounds; the Hungarian survey was delayed three times in the period between 2004 and 2014. The exact timing of collection of Hungarian data may be important as concerns interpreting and understanding the results, particularly in light of the political events in the country around the time of the survey period. These events involved elections for the national or the European parliament, and other relevant political events that may have had an impact on political activity. Table 1 provides a summary of the time period covered by the Hungarian data from 2005-2015.

Table 1. Timing of Hungarian data collection and important political events

Round	Year/Season	Election act(s)	Important political events
Round 2	2005 Spring	–	-
Round 3	2006 Fall	2006 Spring: Parliamentary Elections 2006 Fall: Municipal Elections	* Prime Minister Ferenc Gyurcsány's speech in Balatonőszöd in May 2006[5] * Political instability * Violent street demonstrations in Budapest in October 2006[6]
Round 4	2009 Spring	2009 Summer: European Parliamentary Elections	* Economic crisis in Hungary *Resignation of Prime Minister Ferenc Gyurcsány New Prime Minister
Round 5	2010 Fall	2010 Spring: Parliamentary Elections 2010 Fall: Municipal Elections	* New centre-right government with two-thirds parliamentary majority (Prime Minister Viktor Orbán) * New Fundamental Law
Round 6	2012 Fall	–	* 'One Million for Freedom of Press in Hungary' (Milla) demonstrations (Wilkin – Dencik – Bognár, 2015) * Pro-goverment 'Peace March' (Békemenet) demonstrations[7]
Round 7	2015 Spring	2014 Spring: Parliamentary Elections 2014 Spring: European Parliamentary Elections 2014 Fall: Municipal Elections	New two-thirds parliamentary majority for centre-right Fidesz–KDNP

Dependent variables

Turning to measurement, the main dependent variable is political participation. We conceptually distinguish between three forms of participation, as outlined above in the theoretical section; this distinction also appears when defining the variables.

[5] See: http://news.bbc.co.uk/2/hi/europe/5359546.stm
[6] See : http://news.bbc.co.uk/2/hi/europe/6081974.stm
[7] See http://www.bbc.com/news/world-europe-16669498

Voting is a dummy variable used to indicate whether (1) or not (0) a respondent participated in the national parliamentary elections (for this variable, 18 is the lower age limit, in line with the related Hungarian legislation).

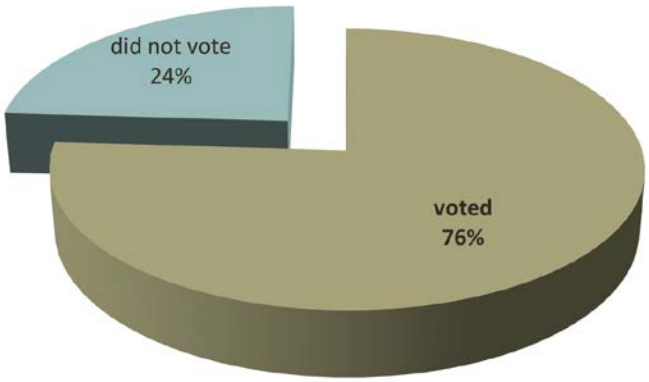


Figure 2. Voted at last general elections (%).Source: ESS Round 2-7.

Beyond voting, we differentiate between *traditional political participation* and *direct political participation*.[8] The first form of participation is based on four questions from the ESS core questionnaire, coded as dummy variables:

- Contacted politician or government official in last 12 months
- Worked in political party or action group in last 12 months
- Worked in another organisation or association in last 12 months
- Worn or displayed campaign badge/sticker in last 12 months

The second form is based on 3 similar questions from the ESS core questionnaire:

- Signed petition in last 12 months
- Taken part in lawful public demonstration in last 12 months
- Boycotted certain products in last 12 months

[8] Different attempts at conceptualization have engendered an emerging methodological consensus according to which research that focuses on explaining political participation should seek to identify and cluster different forms of participation. "Traditional" forms of political participation include participation in elections and in political organizations (political parties, unions), as well as forms of participation related to these organizations (such as campaigning, participation at meetings, wearing the symbols of these organizations, etc.). "Collective" or "direct" forms of political participation are those that require personal involvement but do not require long-term commitment on behalf of actors (e.g. direct forms of protest such as sit-ins, blockades, expressive and symbolic acts). Direct forms of political participation require few resources, are low risk, and require low levels of commitment. These include the signing of statements, petitions and initiatives.

In principle, simple counting of these activities would have led to a scale of 0-4, and 0-3, respectively. In practice – as descriptive results will show –, both measures are very unequally distributed; the majority of respondents did not participate in any traditional or direct political activities. As prediction using such dependent variables would have been problematic, we constructed a simple typology to distinguish four categories: passive (neither traditional nor direct participation); only traditional participation; only direct participation; both forms.

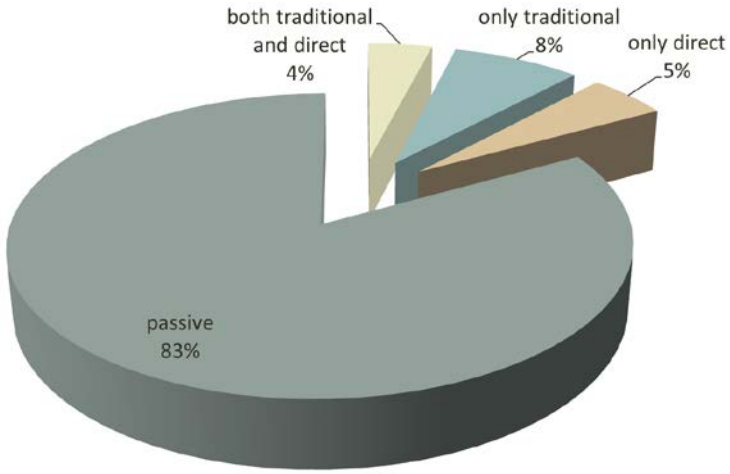


Figure 3. Different forms of political participation (%).Source: ESS Round 2-7.

Control variables: Features of work

Regarding independent variables, the main focus of the study is the role of the labour market position in determining political participation. As outlined in the conceptual section, labour market integration is expected to affect political behaviour. In this regard, unemployment is expected to have a negative impact on participation. Unemployment was measured for the respondents' current situation, as well as for the past. The indicator of current unemployment is a dummy variable taking a value of 1 if the respondent is unemployed, otherwise (0). Past unemployment is a categorical variable with three options: never unemployed in the past; unemployment of duration longer than three months; unemployment of duration exceeding one year.[9]

Precarious employment is another element that influences political participation negatively. Two indicators are used in this respect: limited or non-existent work contract = 1 vs. unlimited work contract (0); part-time work: working less than 35 hours per week = 1 vs. full-time work (0).

Finally, working conditions are examined using the concept of 'work autonomy'; the related scale is based on responses to the ESS core question: 'how

[9] Cutoff points for past unemployment (3 months, 12 months) are taken from the survey question; these options were specified in the ESS questionnaire.

much does/did the management at your work allow you to decide how your own daily work is/was organised?' (the original 0–10 scale was condensed to a four-item one).[10] Job autonomy is defined as influence on policy decisions about organisational activity. The 0–10 scale was converted to a four-item one).

Political variables

In the paper we take into account political attitudes as possible predictors of behaviour. We apply two items[11] from the ESS core questionnaire: satisfaction with the government (0-10), and trust in parliament (0–10).

Socio-economic variables

We also include demographic control variables in the multivariate models. Gender is coded as 1 for men and 0 for women. As mentioned before, we are specifically interested in examining the association between political participation and age, in particular in terms of cohort differences: namely, how the young generation participates in politics compared to older individuals. Therefore, three age cohorts were defined: 15/18–29; 30–50; 51–65.

Level of education is another control variable with three categories: graduate, secondary level, lower level of schooling. Place of residence distinguishes whether respondents live in big city, a suburb, in a smaller town, or in a rural settlement (village).

Finally, the respondent's financial situation is also included in the analysis; we use subjective household income from the ESS core questionnaire transformed into a dummy variable where one category combines the options 'living comfortably on present income' and 'coping on present income' (1) while the other category combines the options 'finding it difficult on present income' and 'finding it very difficult on present income' (0).

For the full list of variables used in the analysis, see Table 8 in the Appendix.

In the course of the analysis we applied bivariate and multivariate techniques. Bivariate relationships examined include changes in political activities over time, and differences by age group. The exact method of multivariate analysis was decide by the form of the dependent variables. In the case of voting, we used binary logistic regression to predict the impact of explanatory variables on the probability of voting at general parliamentary elections. For these, we present the unstandardized regression coefficients (B), the odds ratios (Exp(B)) and the level of significance. For the combined typology of traditional and direct political participation, we predicted the

[10] Job-related indicators (nature of work contract, working hours, autonomy) are obviously lacking here; respondents actively employed (i.e. 'currently unemployed') were not asked about these features in the survey.

[11] First, we tested 4 political attitude variables (satisfaction with democracy, satisfaction with government, trust in parliament, trust in politicians), but because of high correlation values (r>0.7) we decided to work with fewer model variables. Following an anova test we selected only two variables (satisfaction with government, and trust in parliament)

activity of respondents using multinomial logistic regression. Passivity (neither traditional nor direct participation) was the reference status, and statistical coefficients refer to the effect of the independent variables on either traditional or direct activity, or on a combination of these (i.e. both). Similarly, we present the unstandardized regression coefficients (B), the odds ratios (Exp(B)) and the level of significance related to the three options for activity, contrasted with 'passive' status in terms of political participation.

6. Results

To control for changing trends in political participation, we first checked whether claims about young peoples' low level of electoral participation holds in our sample (see Figure 4.).

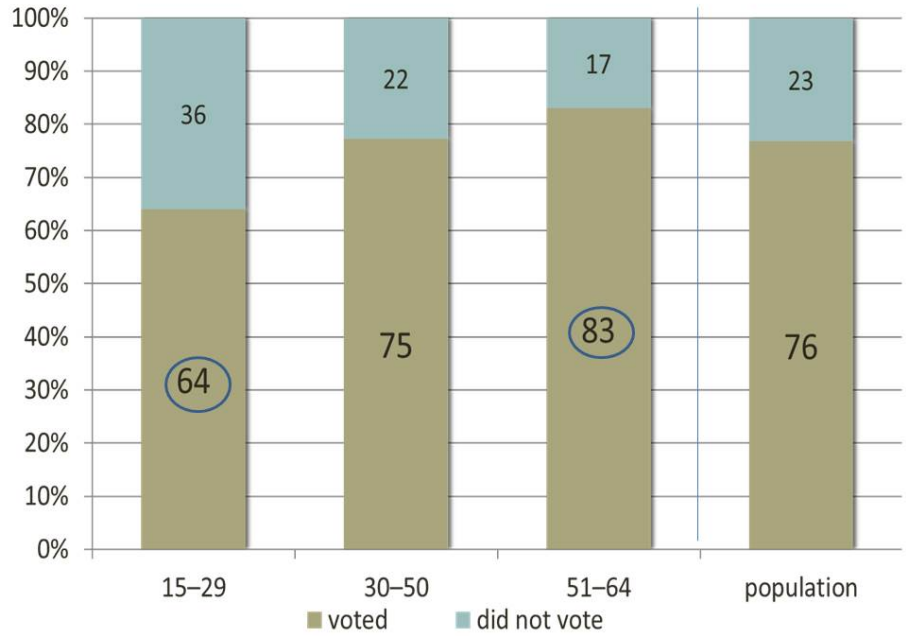


Figure 4. Voted at last general elections, by age group (%).
Source: ESS Round 2-7. Pearson Chi-Square: 224,453; sig:0,000; Cramer's V: 0,161

From a comparative perspective, electoral participation is not low in Hungary (76 per cent claimed to have voted in the last national election). Although the level of participation is not critically low, young Hungarians report to a lower level of electoral participation than older cohorts.

In the course of the analysis we tested our hypotheses using two multivariate models. In the first one we used binary logistic regression to investigate how the independent variables influence electoral participation; a dummy dependent indicator. The model contains all of the variables described in the methodology section, but we present only the significant ones ($p<0.05$) in Table 2 below. The estimates in the table control for (but do not display) the other independent variables.

Table 2. Selected results* from Binary Logistic Regression Model – Voting.
Source: ESS Round 2-7. Dependent variable=voted (1/0); author's calculation
* Estimates are also controlled for gender, flexibility of employment, previous unemployment.

	B	Exp(B)	Sig.
Work features			
Currently unemployed (=1 / 0)	**-0.275**	**0.76**	**0.03**
Work autonomy (4 point scale)	**0.132**	**1.141**	**0.00**
Political variables			
Satisfaction with government (0–10)	0.044	1.044	0.018
Satisfaction with parliament (0–10)	0.102	1.108	0.00
Control variables			
Essround (ref: 7, 2015 Spring)			
Essround 3 (2006 Fall)	0.301	1.351	0.012
Essround 4 (2009 Spring)	**0.737**	**2.089**	0.00
Age group (ref: 51–65)			0.00
Young: 18–29	**-0.688**	**0.503**	**0.00**
Middle aged: 30–50	-0.28	0.756	0.00
Education (ref: lower)			0.00
Graduated	**0.815**	**2.259**	**0.00**
Secondary school	0.184	1.202	0.055
Region (ref: city)	0.19	1.209	0.05
Rural (village)	0.19	1.209	0.05
Subjective income (1=living well / 0)	0.191	1.21	0.012
Constant	**0.415**	**1.515**	**0.015**

As we expected on the basis of the first hypothesis, current unemployment has a negative impact on electoral participation since unemployed people are less likely to participate in elections. However, precarious employment (limited or non-existent work contract; part-time work – i.e. working fewer than 35 hours per week) did not influence electoral participation. The same also holds for previous unemployment.

As for the role of labour market position in determining electoral participation, we found that working conditions, namely job autonomy, have the greatest positive impact. It seems that people who have greater autonomy in organizing their everyday work are more likely to participate in elections than others.

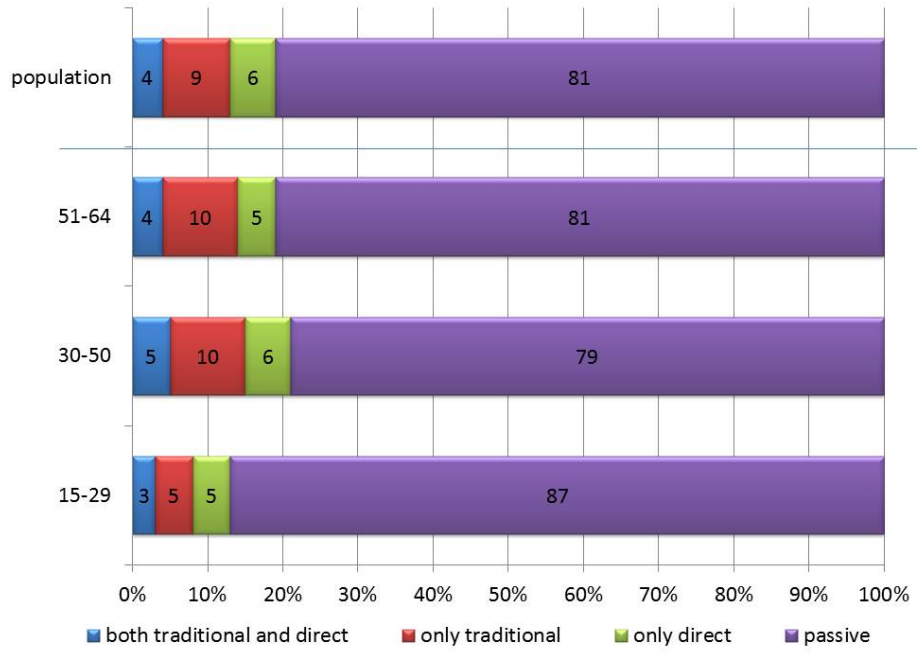
As for the control variables, ESS Round 3 (2006) and ESS Round 4 (2009) had a positive influence on electoral participation compared to the earlier period of data collection. Important events occurred from a political and economic perspective in both years (see Table 1 and Figure 1) but in particular in 2009, when the economic crisis hit Hungary, employment dropped, and unemployment increased. This was also

the year when Prime Minister Ferenc Gyurcsány, still an important figure in Hungarian politics on the left, resigned. In fact, 2009 was the last year of the eight-year-long incumbency of the socialist government, a distinct period preceding the change of government in 2010. These political and economic events might explain why the reported electoral participation of Hungarian citizens was higher compared to 2015.

From the demographic control variables, age affected electoral participation, as postulated in our hypothesis. Compared to the 51–65 year-old cohort, 15-29 year-olds were less active in terms of electoral participation. Similarly negative effects on electoral participation were identifiable in the case of members of the middle-aged cohort, although the magnitude of this estimate is less than that of the youngest cohort. The basic indication is that participation in national parliamentary elections increases with age.

Last but not least, electoral participation was mostly strongly influenced by level of education. More highly educated individuals were more likely to vote (graduates were 2.25 times more likely to participate in elections than non-graduates). We also assume that level of education has an indirect effect on work autonomy, since the higher the level of education of a citizen, the greater the likelihood that they have freedom to organize their everyday working routine. We return to this point in the discussion. The model also shows that the more positively the respondent subjectively evaluated their income situation, the greater the probability of voting.

In order to expand on the study of political participation, we investigated not only electoral participation but also traditional and direct forms of political



engagement (see Figure 5.)

Figure 5. Different forms of political participation, by age group (%).

Source: ESS Round 2-7. Pearson Chi-Square: 71,593; sig:0,000; Cramer's V: 0,062

We identified a very high proportion of passive citizens (81 per cent) within the whole population, finding the highest fraction of passive citizens among young people (87 per cent). It transpires that this group is the least active cohort in terms of all forms of political participation, but especially in traditional forms of political participation.

For the second multivariate model we used multinomial logistic regression to investigate the influence of independent variables on traditional and direct political participation. In this model, the dependent variable is a nominal one with four categories (0 refers to passive citizens, whereas activity in traditional, direct and both forms of political participation are also distinguished). The model examines the impact of the independent variables on each category of political activities separately, while passive respondents (the majority of the sample) are the reference category. Results are presented in Table 3. Similarly to the previous model, only the significant coefficients ($p<0.05$) are shown in the table, but the other independent variables are controlled. Another issue to take into account when examining the findings in Table 3 is that most of the predictor variables are also categorical. Consequently, effects for passive respondents in general, and the concrete reference category for the specific independent variables overlap.

As Table 3 indicates, traditional and direct forms of political participation are affected by more issues than electoral participation is. This is a general finding: regarding the role of labour market position we find four labour market indicators that affect political participation.

Unemployment has a significant impact, but seems to have different effects on other forms of participation than electoral participation. The analysis revealed an interesting correlation between previous unemployment and political participation. Not having a job for a period of between three months and one year increased the likelihood of both traditional and direct participation. Current unemployment, however, was not a significant predictor of political participation. These results are not in line with assumptions, and we return to them in the discussion.

Similarly to the case of electoral participation, work autonomy has a positive impact on both traditional and cumulative political participation.

Furthermore, job characteristics also play a role, according to this model. Respondents who have limited working contracts are more likely to take part in traditional forms of political activity (Exp(B)=1.423), and those who work fewer than 35 hours per week are also more likely to participate in direct forms of political activity.

Table 3. Selected results from Multinomial Logistic Regression – Political participation typology. Source: ESS Round 2-7. Dependent variable=political participation, reference = passive, author's calculation

Political participation typology (REF: passive)	B	Exp(B)	Sig.
Work features			
Limited work contract (=1 / 0)			

Political participation typology (REF: passive)	B	Exp(B)	Sig.
Only traditional	0.353	**1.423**	**0.007**
Unemployed (3 months <)			
Both traditional and direct	0.479	**1.615**	**0.004**
Work hours < 35			
Only direct	0.376	**1.457**	**0.045**
Work autonomy (4 point scale)			
Only traditional	0.301	**1.352**	**0.000**
Both traditional and direct	0.302	**1.353**	**0.000**
Political variables			
Satisfaction with government (0–10)			
Only traditional	0.051	**1.052**	**0.04**
Control variables			
Essround (ref: 7. 2015 Spring)			
Only traditional			
ESS 3 (2006 Fall)	0.354	**1.425**	**0.033**
ESS 6 (2012 Fall)	-0.618	0.539	**0.001**
Only direct			
ESS 4 (2009 Spring)	0.652	**1.919**	**0.000**
ESS 6 (2012 Fall)	-0.427	0.652	**0.034**
Both traditional and direct			
ESS 3 (2006 Fall)	**0.771**	**2.162**	**0.002**
Male (REF: Female)			
Only traditional	0.288	**1.334**	**0.004**
Both traditional and direct	0.28	**1.323**	**0.045**
Age groups (REF: 51–65)			
Young (15–29)			
Only traditional	-0.532	0.588	**0.001**
Middle aged (30–50)			
Only direct	0.249	**1.283**	**0.054**
Education (ref: lower)			
Graduated			
Only traditional	0.544	1.724	**0.003**
Only direct	1.426	**4.164**	**0.000**
Both traditional and direct	1.311	3.711	**0.000**
Secondary school			

Political participation typology (REF: passive)	B	Exp(B)	Sig.
Only direct	1.106	**3.021**	**0.000**
Region (REF: big city)			
Rural (village)			
Only traditional	0.638	**1.892**	**0.000**
Only direct	-0.949	0.387	**0.000**
Town			
Only traditional	0.301	1.352	**0.028**
Subjective income (1=living well / 0)			
Both traditional and direct	-0.328	0.72	0.031

The model shows quite substantial variation in time: ESS Round 3 (2006 Fall), ESS Round 4 (2009 Spring) and ESS Round 6 (2012 Fall) appear to differ significantly from the reference period (ESS Round 7, 2005 Spring) with respect to their influence on political participation. Whereas in earlier years turbulent changes in Hungarian economics and politics occurred, as shown in Table 1 and Figure 1, the estimates reveal the obviously positive impact (i.e. greater probability) of political participation in the specified years. The magnitude of the effect is particularly large for 2009 in the case of direct activity (Exp(B)=1.919). The most recent year (2012), however, shows a reduction in traditional and direct form of political action – i.e. the probability of such activities is significantly lower than in the year 2015. We elaborate on this further in the discussion part of the paper.

From the control variables, there is a positive effect for men in contrast to women. Age affects traditional participation (in line with our hypothesis), since being in the 15-29 year-old cohort lessens the likelihood of being involved in traditional political activities. However, the model does not show the positive impact of age on direct political participation (in terms of the youngest cohort; 15-29 years old), in contrast to popular claims. We return to this issue in the discussion.

Level of education has a positive impact on direct forms of political participation: graduates are more likely (Exp(B)= 4.164) to participate. This demonstrates the cultural component of direct participation; namely, that direct democratic participation has to be learned, as happens among educated citizens.

The effects of regional variation are quite conventional. Traditional forms of political activity are more typical of people who live in villages than those who live in cities, while the same people participate significantly less in direct action. Finally, more positive subjective appraisal of income is negatively correlated to traditional and direct political participation.

7. Discussion

Our analysis investigated the relationship between labour market inequalities and political participation. In particular, we focused on the role of unemployment and precarious employment. Unemployment was measured using indicators that referred

to the current situation and to past experience; work flexibility was approached using two indicators: 'bad' (=non-permanent) work contract, and part-time job. For political participation, we distinguished between voting, traditional forms of participation, and direct forms of participation. Based on the literature, we tested concrete hypotheses about how labour market inequalities could influence political participation.

One further goal of the analysis was to elaborate differences according to age cohort to enable us to discuss the political activity of young individuals (below 29 years of age) in Hungary. Finally, given that we analysed only one country, we intended to link the findings about Hungary to the broader political and economic context of political participation – our data cover about 10 years from 2005-2015. This is not a long period, but involved quite significant changes. On the one hand, the economic crisis hit Hungary during these years – this is an obvious example of a wider phenomenon. On the other hand, from the perspective of Hungarian politics, this 10-year period involved the fall of the socialist government and the rise of a more populist, centre-right government. Some final additional information about the factors that influence political participation in Hungary were derived from the control variables – in particular, education.

7.1. Labour market situation

We begin with the 'easy part' of this discussion: job autonomy. This indicator has a strong positive impact on basically all forms of political participation. This result is in line with the theory and findings of earlier studies; namely, that more involvement and responsibility in the workplace increase political participation. Indeed, it also seems to hold true for Hungary that the mechanisms in effect in the workplace increase political efficacy. It is even more important that this result remains valid even when education is controlled for. Obviously, more educated respondents have more job autonomy, but more autonomy at the workplace also positively affects political participation.

Turning to the results the reasons for which are more complex to interpret, it is apparent that the emerging picture of the impact of the other labour market indicators (unemployment, work flexibility) on political participation is not straightforward. We believe that the seemingly contradictory results stem – at least partly – from the fact that the models include important control variables such as age and education. Thus, it makes sense to investigate the bivariate relationship between these work indicators and political participation. These results are presented in Table 4.

Table 4. Bivariate results*.
Source: ESS Round 2-7. *Uncontrolled effects of descriptive statistics.

Work features	Voting	Political participation typology
currently unemployed (yes)	significantly less	insignificant
unemployment in the past: (3 month<1 year<)	significantly less	significantly more
work contract (limited)	significantly less	significantly less direct but more traditional
Work hours (> 35 hours)	insignificant	significantly more

Table 4 provides a more transparent picture, at least in relation to voting at parliamentary elections, as no negative associations are identifiable (or no significant ones in the case of part-time work). This is in line with our assumptions. Unfortunately, this is not the case for the other forms of political participation. Regarding unemployment, the results of bivariate and multivariate analysis are the same: only past unemployment experience matters, and this increases political participation. Having a limited work contract cannot be correlated with support for traditional activities but is negatively correlated to direct participation. Finally, the variable for working hours also confutes the expected negative relationship.

At this point we can offer only a limited explanation for these results for political participation. One explanation is that citizens simply have more free time when they are unemployed or are working only part-time. Another explanation is that the findings regarding flexible work mask an indirect cohort effect – namely, that it is primarily young people who are faced with precarious working conditions. Indeed, working fewer than 35 hours per week or having a job with a fixed-term contract (or no contract) strongly characterizes the youngest cohort (aged 15-29).[12] Multivariate analysis also reveals no positive effect on the young cohort for direct participation. This may be because the effect of this association is incorporated into the indicator for flexible working conditions.

A rigorous summary of the results of our direct work-related hypotheses is provided in Table 5. However, we should underline the fact that this should not be the last word in terms of the analysis of the relationship between labour market inequalities and political participation in Hungary.

[12] The means of the young cohort for precarious employment were one and a half time greater than the sample means.

Table 5. Results of hypotheses.

H1 a.	verified
H1 b.	rather verified
H2 a.	weakly verified
H2 b.	unverified

7.2. Other important findings

Political activity increases with age, and this observation probably holds for voting. However, for other political activities (particularly direct ones – as mentioned above) labour market variables can be used to characterise the age cohorts. Although further observations could have been made using the dataset, we limit the analysis to these cohort differences only.

The research did not attempt a comparative chronological analysis, but assumed that changes over time were stable. However, there is evidence for the influence of the political and economic context on political participation. This becomes obvious when we look at the positive impact of the dummy year 2009. The negative impact of year 2012 (in contrast to 2015) is also understandable. Table 1 refers to the so-called *Milla* and *Békemenet* demonstrations in Hungary that occurred during this year. At first sight, the significant negative effect on participation during this year appears to be strange. However, only the *Milla* demonstrations were real grassroots events directed against the government (the *Békemenet* – 'Peace March' – demonstrations were organised *by* the government). We suggest that many respondents discounted these events as forms of political participation, although we have no evidence for this proposition. 'Cheering' for the government may not be considered political participation in the same way that protest action that expresses disagreement is. For many people, demonstration implies protest. However, this issue requires further – perhaps qualitative – investigation.

Finally, we underline the very strong impact of education. From the perspective of political socialisation, this is not surprising. Additionally, one should not forget that the young cohort includes a greater proportion of more educated respondents. There has been a huge expansion of education in Hungary (particularly at the tertiary level) which means that the pool of graduates and the cohort of younger respondents (below 29 years of age) overlap. This is one more argument to consider when looking at the results of the multivariate analysis.

This paper is intended to fill a gap in the literature. Studies about the determinants of political participation that go beyond the usual political factors such as being interested in politics, and being (dis)satisfied with current political situation, are largely lacking in the post-communist context. As a first step we examined the Hungarian population in this regard. Although we did not attempt a comparative analysis, ESS data would definitely permit the expansion of this analysis to include other post-communist countries – one suggestion for further research.

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Appendix

Table A1. List of variables in the analysis

Variable	Contents	Comments
Dependent variables		
traditional political participation index	Consists of the following variables: 1. Worked in political party or action group - last 12 months; 2. Worked in another organization or association - last 12 months; 3. Worn or displayed campaign badge/sticker - last 12 months, 4. Contacted politician or government official - last 12 months;	(values: 0–4, recoded 0–1) Index parameter: Cronbach`s alpha .565.
direct political participation index	1. Signed petition - last 12 months; 2. Taken part in lawful public demonstration - last 12 months; 3 Boycotted certain products - last 12 months.	(values: 0–3, recoded 0–1) Index parameter: Cronbach`s alpha .556.
voted	Voted last national election	dummy variable: 1=voted; 0=not.
Work features		
Currently unemployed	Main activity, last 7 days.	dummy variable: unemployed=1; employed=0.
Previous unemployment	Ever unemployed and seeking work for a period of more than three months	categorical variable: never unemployed in the past unemployment with duration longer than 3 months; unemployment with duration longer than 1 year
Work autonomy	How much does/did the management at your work allow you to decide how your own daily work is/was organised?	scale variable: The 0–10 scale has been converted in to a 4 point one.
Job autonomy	Allowed to influence policy decisions about activities of organisation	scale variable: The 0–10 scale has been converted in to a 4 point one.
Limited work contract (flexibility)	Employment contract unlimited or of limited duration	dummy variable: limited or non-existent work contract = 1 unlimited work contract=0
Work hours	Total hours normally worked per week in main job, overtime included	dummy variable: working fewer than 35 hours per week =1 full-time work=0.
Control variables		
Essround 1–7	ESS1.; 2. ESS2; 3 ESS3; ESS4; ESS5; ESS6; ESS7	dummy variables
age group	young:15–29;middle-age:30–50; older: 51–64	categorical variable
education (graduate: name of variable in the table) (secondary school: name of variable in	If respondent has university diploma or not =graduate; If respondent has higher level of education than elementary level or not=secondary school.	dummy variables: graduate: 1=has, 0=not; secondary school 1= has, 0=not

Variable	Contents	Comments
the table)		
region	rural (village) and town	categorical variable: 1 village; 2 town; 3. suburbs ; 4 big city
subjective income	Feeling about household income	dummy variable: living well=1.
gender		dummy variable: 1=male, 0=female
Political variables		
satisfaction with government	How satisfied with national government.	scale variable: (0–10)
trust in parliament	Trust in country's parliament	scale variable: (0–10)

ANDRÁS TÓTH *

Workers as Life-Entrepreneurs

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Abstract

The aim of this article is twofold. First, it questions the validity of the still-influential Marxian description of workers as victims of markets, which laments the dissolution of the 'working class' due to the trend towards individualization and consumerism. As an alternative, I offer a description of workers as life-entrepreneurs, who use markets for their own purposes: to better their own chances in life. Second, I propose a wider conception of entrepreneurship than mere commercial activity. This is the concept of life-entrepreneurship, as per the title of this article. This broader vision of entrepreneurship rests on the concept of personal capital based on the reconceptualization of ideas of Adam Smith and Carl Menger. One of the key insights of this paper is that consideration should be given to reducing bureaucratic red tape on companies and the tax burden on employment in order to facilitate job creation, thereby supporting the entry into the world of work ordinary life-entrepreneurs, and helping them avoid becoming welfare recipients.

Keywords: Labor markets; Sociology; Economics; Entrepreneurship; Capital theory.

The aim of this article is twofold. First, it questions the validity of the still-influential Marxian description of workers as victims of markets, while at the same time lamenting the dissolution of the 'working class' due to individualization and consumerism. As an alternative, I offer a description of workers as life-entrepreneurs who use markets, in which they seek to better their own life-chances, for their own purposes. Second, I propose a wider conception of entrepreneurship than mere commercial activity.

The word 'entrepreneur' has numerous meanings. Typically, the academic literature interprets the term to mean a businessperson who founds a new firm and/or builds up a business using capital and/or credit. For this article I use a wider meaning for entrepreneur; namely, a venturesome person. This is not a new concept: Theodor W. Schulz (1975), and Foss and Klein (2012: 5-8) also proposed such a broader understanding.

The novel approach of this article is that this broader vision of entrepreneurship rests on the concept of personal capital as the subject of entrepreneurial activity. The concept of personal capital builds on a reconceptualization of ideas about the composition of capital and economic goods as proposed by Adam Smith and Carl Menger.

The understanding on which this paper is based is that personal capital is the portfolio of capital available to an individual. This includes the material capital, knowledge capital and the relationship capital at the command of a person. This tripod-like portfolio of capital is nurtured and used by life-entrepreneurs, as per the title of this article.

Gergen and Vanourek (2008) used the concept of life-entrepreneurship to characterize venturesome entrepreneurs. In this article, I apply the concept of life-entrepreneurship to blue-collar workers. The novelty of my approach is that I apply this concept to ordinary people, who live ordinary lives, and who lack material capital or do not have access to credit. Life entrepreneur workers are individuals who persistently struggle to make ends meet from one day to the next. They often face various forms of hardship, risks, and a lack of job security. They are under great pressure to cope with demanding work and must find a balance between work, money, family and their aspirations for a better life, more security, more consumption and more time for themselves. As life-entrepreneurs, despite difficult circumstances, they are constantly searching for a better, more meaningful life; they are interested in professional excellence and professional development, obtaining better pay and doing more autonomous work. They are always alert to new approaches and opportunities, keen to face the new, and to find solutions to the new challenges that they are faced with and are always seeking a better life. Thus, in this article I use the term life-entrepreneur to describe a 'venturesome' worker who, albeit lacking physical capital, nurtures his or her own knowledge and relationship capital.

The data that I use to make this argument are derived from in depth interviews that I undertook with a sample of blue-collar workers in the Hungarian construction industry in 2011.[1] The sample size was 20 people. The interviews were semi-

[1] This study was conducted within the framework of the *Walqing* research project, funded by the European Commission's 7th Framework Programme (SSH-CT-2009-244597).

structured, life-history narratives. Special emphasis was given to understanding the individuals' acquisition of skills, career or work trajectory, and agency at work.

In conclusion, the article discusses the role of markets and marketization in workers' lives, and the implications of a life-entrepreneurship-centered approach for labor market policies.

1. The concept of life-entrepreneurship

Karl Marx (1858: 477) claimed that invisible exploitation takes place in the capitalist labor process. The use value of labor (the value that a worker produces during working hours) is greater than the exchange value of labor (the wage, which equals the amount of money necessary to reproduce the labor force of a human being). The difference between the two is surplus value, which is the source of the profit accrued by capitalists. This hidden process of exploitation creates an antagonistic relationship between workers and capitalists, since the former are reduced to a minimal level of existence (that necessary for the reproduction of their labor), while capitalists appropriate the profits. The concept of the working class arises from the Marxist interpretation of exploitation, as this exploitation will only come to an end if and when workers decide to unite and appropriate the means of production.

Marxism has become one of the most influential theories of the modern era, and decisively shaped the perception of workers as members of the exploited 'working class'.

However, the 'marginal revolution' in economics overturned the labor value theory of Marx on which the concept of exploitation and that of the working class was based. Marginal theory identifies the source of value as rarity (Walras, 1874), scarcity (Jevons, 1871) and subjective valuation (Menger, 1871).[2] The marginal value theorem nullifies the validity of Marxist exploitation theory (Böhm-Bawerk, 1896; Bates, 1899).

Max Weber's (1978: 926-933) concept of social class can be interpreted as an application of marginal economic theory to sociology. Weber was heavily influenced by Menger and described social class as a phenomenon based on different life-chances shaped by different market positions. Weber did not believe that shared economic interests automatically lead to political class formation (Wright, 2002). Rather, he believed that individuals struggle most of the time within the framework of established laws and organizations (Roth, 1978: xxxv), while mobility within and between classes undermines the 'stability' of people's class positions, and therefore the unity of social classes themselves (Weber, 1978: 302).

The sweeping social and political changes of recent decades have further questioned the viability of the Marxist class concept. A fundamental shift in attitude has taken center stage towards a belief in selfhood and personal autonomy (Lawrence, 2013) which erodes the culture and cohesiveness of working class communities (Charlesworth, 1999: 2). One of the key theorists of fragmentation, Ulrich Beck, has argued that the process of individualization has 'disembodied' individuals from historically prescribed social roles (Beck, 1992a: 128) and that there has been a

[2] On the differences between Jevons, Walras and Menger, see Jaffé (1976).

general cultural shift toward the pursuit of self-fulfillment, individual agency and choice (Beck, 1998: 39-54). A person's class is no longer an accurate predictor of their personal outlook, relations, family position, or social and political identity (Beck, 1992a: 92). For Beck, security in contemporary society is attained through calculation and clever anticipation (Beck, 1992b). Similarly, Zygmunt Bauman (2000) argues that we are living in a 'liquid society'. In such a Protean society, nothing keeps its shape for long. Mutually reinforcing and unconstrained market forces, coupled with individualist consumerism, demand that people change their tastes, habits, identities, affiliations and even their occupations, with subcultures and job types springing up and fading away incessantly.

Of course, neither Beck nor Bauman created these ideas, which have a long history. Carl Menger, one of the founding fathers of the marginalist school of economics, based his economic theory on individual agency and choice. For Menger (1871), the inherent ability of humans to discover causal connections and thus to generate and implement new knowledge at work ensures the satisfaction of diverse human needs, and at the same time drives the progress of civilization. Menger used a German word – *Wirtschaftender* – commonly given in English as 'economizing' (not to be confused with the common meaning of 'economizing', meaning trying to do most with least) to refer to the inherent drive of humans to discover new knowledge in an uncertain environment, and apply this new knowledge at work in order to create greater security and better satisfaction of needs. Menger considered any individual who takes into account the available means at his/her disposal, and who calculates the best ways to employ these means in order to completely satisfy his or her needs to be an economizing individual and an enterprising person. Economizing involves planning for an uncertain future, as well as calculating and speculating. Another important feature of Menger's description of an enterprising human being is that they do not possess perfect knowledge, but are able to learn from their former mistakes and rethink mistaken causal relationships. Menger distinguished economizing, which is an inherent human trait, from entrepreneurial activity. He considered entrepreneurial activity to be one of the components of labor, which has as a prerequisite command of capital. Only the scarcity of capital limits the number of entrepreneurs among enterprising people. An abundance of credit increases the chance that a wider pool of economizing individuals will become entrepreneurs (Menger, 1871: 172).

Friedrich Wieser, who was one of the key members of the second generation of the Mengerian economic tradition, abandoned the Mengerian concept of ordinary enterprising people: he considered the advance of civilization and economic change to be directed by great individuals, kings, and lawmakers; Nietzsche's *Übermenschen* (Anderson, 2009: 77). In the Wieserian frame, the 'entrepreneur' is a great capitalist who represents personal superiority, which in the era of large enterprises gives him a degree of power that translates into capitalist supremacy over the masses. He is the overlord of modern times. The masses are only capable of action through a leader who can bind the multitudes into an active unit (Wieser, 1927: 319-328). Everyone other than the entrepreneurial hero will cling as tightly as possible to using traditional economic methods (Anderson, 2009: 73).

Wieser's line of thinking heavily influenced Joseph Schumpeter (Ebner, 2003: 137), who is credited with the discovery of the role of entrepreneur in economics as

an agent of creative destruction. Schumpeter's entrepreneurial hero is a brave and heroic person with extraordinary mental energy, who is able to conceive of and carry out acts of creative destruction and enact social leadership (Schumpeter, 2002). For Schumpeter, this entrepreneur is *Homo Creativus* – Nietzsche's *Übermensch* (Anderson, 2009: 34). With the adaptation of the Schumpeterian concept in economics, the original Mengerian concept of the ordinary enterprising person, who is not a silent follower of a hero, nor a member of a faceless mass, was not completely lost.

Ludwig van Mises (1949) reconstructed the original Mengerian idea and again placed the economizing individual front and center. He conceptualized the economizing individual to be an enterprising person who acts to achieve a goal in accordance with their values, and who aims to achieve an end with certain means under conditions of uncertainty.

There are significant individual differences between people, so that one enterprising person is not interchangeable with another. Mises proposed the use of the term 'promoter' for enterprising individuals who also have access to capital. The promoter is driven by calculations of profit and loss (Mises, 1949: 229). With his concept of promoter, Mises built a bridge connecting Menger to Wieser by arguing that it is impossible to imagine a market economy without promoters. Thus, within the Mengerian framework he created a space for the successful capitalist, who is not merely an enterprising individual. The promoter is the driving force behind the market, whose restlessness and eagerness to make as large a profit as possible guarantees unceasing innovation and improvement. In this sense, leadership is no less important in the market than in any other branch of human activity (Mises, 1949: 255).

Friedrich Hayek, who was also a student of Wieser, made an important contribution to the Mengerian concept of the enterprising individual with his emphasis on the specifics of the environment and of local conditions as significant factors in which action is shaped. The individual's environment is a localized world in which local actors typically possess dispersed and sometimes only tacit knowledge. In this decentralized world there is a division of knowledge that is as important as the division of labor (Hayek, 1937).

Among the students of Mises and Hayek, Israel Kirzner and Ludwig Lachmann made important contributions to the concept of the enterprising person. Kirzner introduced the concept of alertness. Alertness is the inherent ability of a human being to perceive, and his/her capacity to transform that perception into information and knowledge, and to thus take advantage of an opportunity and to profit from it (Kirzner, 1973: 68). The Kirznerian concept of alertness is not a process of creative destruction (in contrast to Schumpeter); it does not cause upheaval in the market. Rather, it makes for dynamic equilibrium. This equilibrium is achieved through the discovery of hitherto undiscovered opportunities which enhance the coordination and the well-being of everyone. The Kirznerian concept of the alert entrepreneur is close to Mises' concept of the entrepreneur: they are able to discover opportunities independently of ownership or command of capital (Foss and Klein, 2012: 57).

Ludwig Lachmann further advanced the concept of Mengerian subjectivism. According to Lachmann (1978), in order to understand human action, one must take

into account the subjective as well as objective reality of ends and means. As a plan of action is implemented, the actor will interpret the result in accordance with his/her personal interpretation of reality.

To summarize, for Menger and Mises the entrepreneurial spirit of ordinary people during their economizing activities is key to understanding the role of individuals in the economy. Although Menger used the term entrepreneur only in the sense of a business person, he clearly meant the enterprising person in the more general sense when he used the term economizing individual. Mises went a step further, nearly standing things on their head by distinguishing between 'promoter' (a business person who uses capital and runs an enterprise for profit), and 'entrepreneur' (the economizing and acting individual). Nonetheless, the Misesian attempt to re-conceptualize the Wieserian-Schumpeterian' concept of the entrepreneur was by and large not adopted by economists and sociologists.

In this article, following the Mengerian framework, I use the term life-entrepreneur to refer to the type of enterprising individual, employee or worker, who has an enterprising and alert personality. This may involve individual readiness to make choices, creativity, the power of innovation, alertness, and familiarity with 'the game'. The enterprising individual lives in a particular localized environment, and, due to their alertness, knowledge and ability to think, rethink and adjust to a constantly changing environment, is able to carry out their individual plans to cope with uncertainty and meet their present and future needs as much as possible. They are acting individuals who try to achieve the best within the given circumstances, and certainly not members of a faceless mass subjugated to overwhelming and often incalculable social forces.

As far as the concept of personal capital is concerned, 'capital' was originally used to refer to an interest-bearing sum of money. During medieval times the concept broadened to include the goods that could be bought for money. Turgot further broadened the concept by declaring that capital is the sum of accumulated goods, including money. Adam Smith laid down the foundations of modern capital theory by distinguishing between goods hoarded for future consumption, and goods saved for investment (Böhm-Bawerk, 1888: 24-25). For Smith, capital is that part of an individual's stock which creates revenue and is destined to bring income (Smith, 1776: 363). Smith also changed the concept of capital by considering that capital could be used by an individual and/or a community. A community as a whole cannot enrich itself other than by producing new things. Thus, for a community, capital is the complex structure of the means of production. Accordingly, the capital of an individual, the parent conception of capital, was relegated to the background by this distinction, and the primary subject of economic literature became the capital of the community, the capital of a nation or of an enterprise. The concept of community capital was reduced to the complex structure of production goods (Böhm-Bawerk, 1888: 26). It is important to note that Adam Smith included the acquired and useful abilities of all inhabitants or members of society within the concept of national capital. He argued that an increase in the dexterity of a worker may be considered in the same light as a machine which is used to facilitate labor, and which, although it comes at a certain expense, will recoup that expense, and more (Smith, 1776: 217). Menger followed the Smithian path by employing a narrower concept of capital in his analysis

of the role of capital in the production process. He only included into his concept of capital material capital goods, despite the fact that when he conceptualized his theory of goods, he distinguished between material and intangible, non-material goods. Within non-material goods, he distinguished two subgroups: 1) human relationships and their attributes, such as goodwill, social connections, family connections, friendships, fellowship, etc., and, 2) work and knowledge (Menger, 1871: 52-55).

The concept of life-entrepreneurship requires the resurrection of the concept of personal capital, the pool of goods available to a person that can play a role in income generation. There is a need for a broader concept of personal capital than material capital in the strictly material sense, following the logic of Adam Smith. It is thus logical and useful to broaden the sense of the word 'capital' to include all classes of economic goods, following the logic of Menger, that persons can use to advance themselves to increase their income.

I propose to use the concept of personal capital, which consists of three types of economic goods available to a person. This personal capital which is at the command of each individual may assist them in their plans to generate revenue. The personal capital of each person consists of three types of capital goods: 1) material capital, which may be money, capital goods or available credit; 2) social capital, which comprises reputation, connections and relationships; and, 3) the knowledge and ability which an individual has to carry out his/her tasks (involving work, and dexterity at work). The latter two are non-material capital goods.

These non-material capital goods are personal: they are a part of a person's abilities and capabilities; the human capital of each individual. One's social capital is the goodwill, reputation, relationships and connections that a person possesses. One's knowledge capital is the ability to solve problems, to discover and learn new things and to understand the 'game'. Following Michael Polányi (1958), knowledge capital not only involves knowledge that is acquired through officially sanctioned systems (such as university degrees), but also includes tacit knowledge and informally acquired skills. Hayek also emphasized that knowledge is more than a formal process of skill acquisition at school, and stressed how valuable an asset is knowledge of people, of local conditions, and special circumstances in all walks of life (Hayek, 1945).

Life-entrepreneur workers, in contrast to 'real' entrepreneurs, primarily capitalize on non-material capital goods: they use and increase their reputation, relationship capital and knowledge capital to achieve their plans.

Having clarified the concept of life entrepreneurship, I now demonstrate the applicability of this concept through an analysis of interviews conducted with 20 construction workers in 2011.

2. The utility of the concept of Life-entrepreneurship

In this section I demonstrate the utility of the concept of life-entrepreneurship using a set of interviews I conducted in 2011. The 20 interviews were conducted with low-wage and skilled and semi-skilled workers. Pseudonyms are given to all interviewees.

Some of the workers were approached through trade union contacts, while others were recommended through personal contacts. Others were contacted through the so-called snowball method: workers who had been interviewed were asked to recommend colleagues for interview. Four of the 20 interviews were done in the framework of larger case studies at two firms. At these firms, interviews were conducted with owners, human resource managers, technical managers, and workers as part of a firm-specific case study. In these cases, the names of worker interviewees were put forward by trade union leaders who were aware of the fact that the interview was part of a broader case study about their firm. These two firms were specialized in niche markets, one in the construction of eco-houses, the other in stonemasonry. All interviews were conducted in Budapest or Kecskemét, a city 80 kilometers from Budapest. All interviews except one were done at construction sites or close to them (I interviewed one employee at his home at a small village 100 kilometers from Budapest).

All the interviewees were men, which reflects the employment patterns of the industry. They were aged from 23 to 60. The majority were middle-aged skilled workers (although some were not licensed). While there were no pre-selection criteria, it is likely that those who agreed to be interviewed can be characterized as rather communicative and open individuals.

Their lives were shaped by the fact that they had born into poor and relatively uneducated families of workers. Some of them had had a difficult childhood due to unfortunate circumstances, such as the early death of one of their parents. Consequently, they entered the world of labor early because they needed to earn money as soon as possible. Others were not keen on studying, or had a misspent youth and had ended up in the construction industry, a traditional entry industry for non-skilled men seeking work. Some of the interview partners had entered the construction industry due to family tradition.

The construction industry is highly decentralized. A precarious employment situation characterizes blue-collar workers, save for a few niche-skilled or trusted employees. In this decentralized industry, the share of informal employment practices is higher than normal. Even those who have an employment contract find themselves in a more precarious situation than is usual, and sometimes this is combined with 'black' (off-the-books) work. Thus, a typical construction worker does not work in a large company with an internally defined career path, and lacks the support of a company-backed training and welfare system.

The circumstances of the industry represent a challenging environment for workers. Workers need to be alert and to be able to cope with many forms of insecurity in order to provide for themselves a secure and satisfying life and working environment (as much this is possible).

In the following section, and in light of the interviews, I discuss in greater detail the importance of knowledge acquisition (i.e. the building up of 'knowledge capital', be this skill or tacit knowledge) and the building up of personal social capital (in the form of reputation and connections based on reputation) in the process of securing a satisfying work. In addition, I highlight the importance of personal traits such as alertness and the ability to make choices that fit the personal circumstances of the actor, which are usually treated in the economic literature as characteristics of entrepreneurial decision-making.

2.1. The importance of knowledge capital, skills and tacit knowledge

Some of the workers that were interviewed had received training in vocational training schools. Others had entered the construction industry without such skills, and had acquired experience through on the job training. Géza is an example of the latter: 'A certificate is not important. Never ever has anybody asked for my certificates, and I have never heard of anyone being asked for them at any time. Nobody asks for them. Whenever I am looking for work, the first question is, 'what do you know?''. Others report to having had a similar experience – for example, Vajk: 'I began to work at this firm 5 years ago. We do house insulation. I have learned everything I know here, through the work that I observed others doing. Today, I am one of the best. I know everything. I have to tell you: you could not learn these things at school. There you learn a lot of literature and how to do the work in theory. But practice is totally different. I did attend a vocational training school to be a bricklayer, but it is at this workplace that I learned how to do the work properly. Theory without practice has no value at all (...) I also work as a painter without any papers. No one cares about your papers; what matters is what you can do'.

Acquiring just one skill is, however, rarely enough in this versatile and multi-faceted industry. The main rule of work in this industry is to be multi-skilled and able to multi-task. All of the interviewees emphasized that they are able to do almost any kind of work that is demanded:

> 'On paper I am only an unskilled worker. However, I can do any kind of work in construction, although I did not learn this at school. But what is important is that I can do any kind of work.' (Előd)

> 'I am a painter by training... But I can do everything imaginable in construction: bricklaying, carpentry, cleaning, everything. I am old, I am not so quick, but I can do anything and I have lot of experience, so I can solve any problem.' (Viktor)

> 'There is no strict demarcation between different types of work. One needs to do all kinds of work, whatever comes. Of course, we know who is better at what, and sometimes it is possible for me to specialize in what I know best and for my buddy to do the work at which he is best.' (János).

Being multi-skilled and able to multi-task is one of the key requirements for finding work in the industry. On the other hand, the breaking down of boundaries between skills and multi-skilling means that aspiring and able workers have an opportunity to earn at the level of 'skilled workers' without undergoing formal training.

Nonetheless, there are important segments of the industry that have not witnessed the breaking down of skill boundaries and in which workers have job security due to their special skills. We met two such interviewees: Iván is a painter, but he is also a high steel worker. For him, high steel work ensures employment. The other interviewee worked for a firm which specializes in passive solar home construction based on proprietary technology. This firm provided special training, along with steady employment and a nice salary, to full-time employees for the purpose of retaining them and ensuring quality control.

2.2 The importance of personal social capital, reputation and goodwill

In this industry, where casual work, informality and tax-evasion rules, and skill demarcations have broken down, the typical way of finding work is through personal contacts based on reputation. There is pervasive insecurity in the industry. Each construction project involves various levels of contractors and subcontractors so a high importance is placed on personal trust. Employers also suffer from insecurity due to the lack – or often inadequacy of – formal certificates, as explained above, and the lack of a guarantee that 'good quality' work will be performed by 'skilled' workers, as expected. Thus, the job market is defined by personal contacts and reputation:

> 'It is experience that is important. This is a small city. Everybody knows everybody. Entrepreneurs know each other. They know who can do what, they have already seen my work and they know what I am worth. ... It is practice that is important: what your experience is and what kind of work you can do... I was never ever asked to present my papers. They already knew me, or they had at least one employee who knew me and could give a reference for my work. Or the other way around: I have often been asked by my bosses whether I knew this or that person whom my bosses wanted to contract for work, and I would tell my boss what he could expect from that man' (Géza)

> 'Getting work? Basically, depends on whom you know. One can get work only through personal contacts. If they know you.' (Árpád)

> 'Work well, and one always has work. I have the reputation of being a good worker. So people recommend me.'(István)

> 'Those who are lazy and did not work well in the past do not find work later, and they keep complaining.' (László)

The widespread practice of reputation-based work informally segments the labor market by classifying workers as 'good' and 'trusted' insiders or 'unknown'

outsiders. Many workers who have succeeded in building up a good reputation act as informal brigade leaders and take on co-workers whom they supervise. This reputation-based segmentation of the labor market also plays an important role in the entry into the world of construction.

2.3. Alertness and personal choices: making the best out of circumstances

Only a few of our interviewees were in formal full-time employment. Even the formal employment contracts of those who had full-time employment status only partially expressed reality. In the case of János, for example, the nominal wage was defined as the minimum wage. In reality, however, he received double the minimum wage and avoided making taxation and social security contributions. Others were employed completely informally without a written contract, or had their own micro-enterprises and were 'employed' as subcontractors, not employees.

Most of our interviewees had a variable career history which involved shifts from full employment to unemployment, informal work, casual employment, self-employment within the framework of micro-enterprises, and better paid work in Germany or Austria. Interviewees tended to be flexible about adapting their 'employment' status to the circumstances. While accepting circumstances on the one hand, they also sought their own solutions when they thought it would benefit them:

> 'I have worked for various firms, I have also worked in foreign countries – for example, in Austria. When I returned, I set up my own firm, I became a self-employed entrepreneur in the construction industry. But now I will give it up and I will try to get work.' (Imre)

> 'I have been working since I was 20, but I have only had one half-year-long "real job" when I was employed legally. I have worked for this company for the last 7 years.... They asked me whether I wanted to work with them. I answered "yes", then the boss asked whether I had my own firm. "No, I do not", I answered. "That's even better", he said, as they could only give me work casually and informally. They call me when they need an extra hand....Depending on the type of work, I do it undeclared, or they declare me [officially] for a few months or so...Finally, a few months ago, they formally employed me.' (Géza)

Becoming self-employed through the establishment of a micro-enterprise was one of the typical strategies of our interview partners, such as Lajos:

> 'When I came home from Germany, I went to work for a firm as a painter. But there were long working hours, lot of work, and not too much money. I was constantly tired, very tired and fatigued from work. And I told my wife that things would not be worse if I was self-employed, since I was being exploited so much there. And there were lots of opportunities, so I left the company and I worked for a while on the black economy. Then I told my friend: look, we are stupid to work for others. Why don't we set up our own firm? At least there will

> not be a stupid monkey above us, and we will have at least a day a week when we can afford to have a rest, or go fishing [...].' (Lajos)

To survive as the owner of a micro-enterprise also requires at least as many 'tricks' and as much 'alertness' as being a worker does.

Workers are constantly weighing up what should be done, what the best solution would be for their lives: to become micro-entrepreneurs, or to give up being self-employed (through their own companies) and go back to working for somebody else, or go to work on the black market as an undeclared employee, like Lajos:

> 'But there are many guys who are only working on the black economy. How can I compete with them? They have a financial advantage of 3-4 million HUF annually. I may go back to the black economy completely. I would earn more, and my only concern would be just to save some money for my old age'. (Lajos)

László had a similar financial dilemma and explained how he combines black work with work done through his micro-enterprise:

> 'My enterprise? It is always in the red. I do have money because...because I work in the black economy. Only my wife, who is the accountant for the company, officially receives money from the firm. But I earn my money through doing undeclared work. The price that I am able to charge for my work is so low that if I did the work formally, declaring everything, I could not earn a single forint, because taxes are so high. Big contractors use sub-contractors, and each sub-contractor uses sub-sub-contractors, and at the bottom, where I am, there is no money left. [...] More or less half of the work I do I declare, and the other half is done without being declared [...].'(László)

Being a micro-entrepreneur requires that one learn how to bend the rules and how to do accounting 'right':

> 'Unfortunately, it is impossible to run a business and observe all of the laws. If an enterprise did everything legally, it would go bankrupt immediately. It is simply impossible. If I followed all the rules, work for which the market price is 1000-2000 forints would cost me 2800 forints. The best kind of work is for private customers, because they do not ask for an invoice. Those are clear earnings. When you do public work, then you need a good accountant, and you need to bend the rules: a bit more on the invoice for materials, only declare four hours of work, etc.' (Lajos)

The life of a micro-entrepreneur involves working in a decentralized industry and earning income not as a salaried employee, but as an individual contractor. This offers the chance of a higher income and more autonomy, but at the expense of considerable hassle with paperwork. None of the workers who had set up a micro-enterprise became 'real' entrepreneurs with enough capital to launch their own construction projects. One of the interviewees, however, provides an example of how

it is possible to become a classic entrepreneur-inventor-innovator. At home, using his 'free time', by constructing a prototype of a windmill for generating energy he may have the chance to change his life. If he succeeds in making a working model, he may in fact become a legitimate entrepreneur.

Those who have not opted to set up their own micro-enterprises told us that they chose to remain employees and earn less because they did not want the hassle of the paperwork and potential legal complications:

> 'No, I would not like to be self-employed. It is so stressful, you need to run after so many things, it's too much responsibility, you have to deal with accounting, etc. I do not want this; I am better off painting. This is what I am good at.'(Iván)

Some of the interviewees became informal leaders of groups of workers with whom they work in 'work gangs'. István, for example, casually employs one or two unskilled workers when he needs an additional hand. They themselves, as gang leaders, use informal employment practices. István answered a question about whether he employed such individuals legally as follows: 'Of course, I do employ them legally [a smile on his face indicates that he does not].' Lajos' answer is similar: 'I do employ one or two persons depending on the workload. But I do not declare them; I pay them from my pocket. Since taxes are high, if I declare them, I would not earn a forint. And there are so many regulations to follow, and I would have to pay for their holidays and so on. How could I do this? It would be impossible to cover all of the costs'.

One of the choices open to construction workers is to seek employment outside Hungary, but within the EU. Finding work in Austria, Germany or other Western European countries is always an option. Choosing to work abroad, however, is just as venturesome as working in Hungary. One may have the luck of obtaining a legal, fully official job with a good wage and with employers who follow the employment rules of the country in which they work. However, interviewees report to having had much worse experiences, resembling the sub-rosa work in Hungary:

> 'I worked in Germany three times, and once in France, and in Spain as well' (Géza)

> 'I worked in Vienna for two years some time ago, and then I returned again for two years in 1999-2000. But these are not permanent things. They just come and they last while they last. There is no future and security in this. I could not plan my life.' (István)

> 'We tried several times to go to Germany to get work. There were many frustrating situations, but once we got work for a month. ... There we saw how it is possible to work with better technology and under better working systems. I decided that whenever there is a chance, I will go back because of the better pay and better working conditions. I have lots of friends there. We call them

> frequently, asking if there is any chance to get work. If they tell us that there is work, we will go.' (Vajk)

István, like Vajk, had encountered much better working conditions in Germany than in Hungary. He told us that he would give up his presently chaotic entrepreneurial life if he could find work in Hungary as an official, legal employee with the conditions of employment and wages that he would get for similar work in Germany:

> 'I would immediately wind up my small business if there were "normal" formal work. In Germany, work ended at one o'clock in the afternoon on Friday, and we went home and we returned to work on Monday at seven o'clock in the morning. In-between, we had a good rest. This was a good place to work, not a hassle as it is here at home. I miss this [...] I would give up my micro-enterprise If I could land a job with a salary of about 300,000 HUF, I would return to employed work immediately'. (István)

Another option is to quit the construction industry and find work in another industry. Some of our interviewees attempted this but then returned to construction as they thought that it offered better options. The choices they made were conditioned by their personal preferences, expectations, and calculations. Some chose the construction industry because of the potentially higher income, as László explained:

> 'Normal people are happy to find work at the minimum wage at a multinational company, and are happy if they are not fired after 2-3 years. ... And this is why people choose construction and black work. At least it is something which surely pays better than minimum wage.' (László)

Others prefer the relative freedom from direct supervision in a rigid work regime that the construction industry offers. Géza, for example, chose construction after he realized that he could make a nice income from it, and that the nature of the industry fit his autonomous personality. Géza is not alone. Many interviewees consciously opted for hard working conditions, irregular hours and income, and the insecure future that the construction industry offers to lower paid but more secure employment in another industry:

> 'I do not know what else I could do aside from this. It would be nice to work eight hours a day, but it is sure that I could not work in a factory on an assembly line. Here, I do not have strict control over my work, I am independent, and it may be that I could not stand to work under a strict regime. So, it would be nice to work less, but it is possible that I could not bear a more disciplined working regime'. (János)

3. Discussion: the role of markets in the lives of workers

Interviewees, despite the precarious nature of the working environment, have 'casually employed permanent' employment status, fairly stable work, and a reasonable income which is at least double or treble what they could earn as normal factory workers in an assembly plant in a low-wage industry. According to interviewees, the two key factors for achieving 'casually employed permanent' employment status are having an appropriate (sometimes tacit) skill portfolio which is sought after, and having a reputation for being a reliable, good worker: that is to say, having personal knowledge capital and personal reputation capital. Additionally, being alert and having the ability to make choices at the right moment is important in the context of being familiar with the rules of the game.

One may argue that the special circumstances of this industry, such as the insecurity and constantly changing nature of the work, attract more adventurous people than 'normal' workplaces. Nonetheless, I note that the life-entrepreneurial phenomenon may also be traced in a more stable employment context: employees may advance their careers by participating in company-based or company-supported training programs and advance up the employment ladder within a company, provided they place emphasis on learning, doing good work and remaining alert to new opportunities and challenges.

The interview findings indicate that the construction workers can also be construed as 'precarious workers'.[3] From this viewpoint, they may be categorized as victims of the market, whose work is atomized, precarious, and for whom insecurity has become an everyday part of life under the impact of laissez-faire economic practices, 'where hard work seems to lead to nowhere'.[4] Indeed, some of the interviewees said that they felt the precariousness of their situation and would rather have been traditional workers at a big company with established rules, career paths, training opportunities and a generous company welfare system. Some of the micro-entrepreneurs felt that they were forced to be entrepreneurs.[5]

Part of the reason that their employment status is precarious is that their lives were largely shaped by the fact that they were born into poor and uneducated families – and as such, they were handicapped by their socialization and their personal distaste for studying; in other words, the cultural habitus of their families. This is a component of the situation which leads individuals to early entry into the world of labor as low-paid and non-skilled or skilled blue-collar workers.

Nonetheless, the situation of interviewees was not entirely without hope. In this world of precarious labor they were able to find ways to develop, to acquire new skills and practical knowledge, to train and retrain, to find ways of building up a good reputation and climbing the ladder of established hierarchies within the construction industry. This led to a more rewarding, more satisfactory and more autonomous life.

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[3] See Standing (2011).

[4] For such a reading, see, for example, Charlesworth (1999: 5).

[5] 'Forced entrepreneurship' is a widely used concept in the Hungarian social sciences and media. See, for example, Ferge (2006).

They did not become victims of their environment. The core of their success with life-entrepreneurship was their ability to increase and enrich their own human and personal social capital which could be converted in the labor market into better, more meaningful work, higher rewards and income, and more security in finding new work contracts. For this reason, I think that using the concept of life-entrepreneurship is a more accurate way to describe the lives of these interviewees than employing the term precariat.

Indeed, knowledge- and reputation-based social capital allows hard-working people to distinguish themselves and to become known and get ahead. This understanding of knowledge and social capital differs to that of Bourdieu (1984) for whom social and cultural capital is a network and a cultural signifier, with which those located 'above' (the upper and middle classes), maintain their place in the social hierarchy.

As far as the concepts of individualization and risk are concerned, the Beckian and Mengerian approaches lead to similar conclusions: both accept as a fact of life the presence of risk and the trend toward individual risk-taking. However, there is significant difference between them: they differ in their perception of markets and marketization.

Beck takes a negative view of the expansion of markets, arguing that it forces individualization on people and increases risk. Baumann also sees individualization as a negative process imposed on people by markets and consumerism. For Carl Menger, on the other hand, scarcity and risk are inherent characteristics of the world into which human beings are born. For Menger, a parallel increase in knowledge and need is the driver of the emergence of markets. Markets emerge when needs cannot be satisfied within self-sustaining, closed, small groups of humans. My position is that the Mengerian concept of the market, which connects the development of markets to increases in knowledge and human needs, fits the life stories of the interviewee-workers much more accurately than the Beckian concept. A market-based economic order is not, by nature, the enemy of working people: it creates a premium for good work, on which – to a large extent – the self-esteem and reputation-capital of workers is based.

Another important conclusion from the analysis of the interviews relates to the negative impact of the modern regulatory and bureaucratic state on life-entrepreneurship. The burden of heavy taxes and (over) regulation has important consequences for our interviewees. One issue is that the price competitiveness of small firms is based on informal working practices and tax evasion. The need for tax- and rule-evasion gives small firms a competitive edge over large firms which cannot resort to informal work practices. Ultimately, it leads to large firms and traditional employment being driven out of non-capital-intensive sectors such as construction, where wage competition is key to managing costs. The driving-out of large firms severely limits the chances of workers who would prefer to work at larger firms because of a personal preference for employment in more hierarchically structured organizations.

The negative impact of high taxes on employment is a worrying phenomenon. Some interviewees were practically forced to work in the grey economy, or to be

fraudulent micro-entrepreneurs who broke the rules since this was the only way to obtain work and generate adequate income in a high-tax environment.

Working in the informal sector may have numerous long-term negative impacts on workers' lives. Employer-provided formal training is not available to workers in the informal sector. Moreover, the de facto exclusion of informal workers from welfare state provisions causes trouble for informal workers when they get sick, when they cannot get work, and especially in their old age. This topsy-turvy situation deprives the very people for whom the welfare state was created (namely, the lowest classes of society) from the benefits of the welfare state, since they are forced into the grey economy and thus become non-persons.

Finally, the research described in this paper highlighted the pivotal importance of on-the-job training and the motivating impact of work experience on workers. Workplaces can serve as sources of inspiration for workers and may mitigate the negative impacts of a difficult start in life that often leads employees down a low-wage, low-skill path. Through work, on-the-job training, and further work-related training employees may have the chance to increase their knowledge, giving them access to more meaningful work, and more agency and autonomy over their lives. This observation suggests that the currently high levels of unemployment in Europe, especially among young citizens, will have a particularly negative impact on the life chances of the unemployed.

One of the key recommendations deriving from this research is that consideration should be given to reducing the bureaucratic red tape on companies and the tax burden on employment. This would create more jobs and give ordinary life-entrepreneurs a chance to prosper in the world of work, instead of becoming welfare recipients.

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Book Review

Philippa Collin (2015) Young Citizens and Political Participation in a Digital Society. Addressing the Democratic Disconnect. New York; Hampshire: Palgrave Macmillan. 189 pages.

During the last decades, turnout rates in national and local elections have been steadily decreasing in many western democracies. The especially low participation of young people within the framework of traditional forms of political participation – voting, party membership etc. – raises the question whether this indicates a certain disconnection or even political apathy among the youngest cohorts. In consequence, governmental as well as non-governmental institutions and organizations have responded through enhancing policies to foster participation of young people. In her book, Philippa Collin aims to investigate these policies as well as the efforts undertaken by NGOs in order to bring young citizens back into the process of developing, determining and deciding on issues and problems of interest. She even takes a step forward and includes young people's views and ideas about participation, the political sphere and their experiences in online and – above all – offline forms of engagement. While the low participation of the youngest cohort is often explained by a lack of political interest, scepticism or yet apathy (cf. Lazarsfeld et al., 1948; Sloam, 2007; Wattenberg, 2015; Wring et al., 1999), other studies have discussed the differences in participation behaviour between older and younger citizens as generational or life-cycle phenomena (i.e. Highton and Wolfinger, 2001; Hooghe and Stolle, 2003) or as a shift in the comprehension of the concept of participation, away from traditional forms of political engagement to a broader understanding that includes various on- and offline activities (cf. Kim, 2006; Norris, 2002; 2004; Zukin et al., 2006). However, most of those studies analysed the participative behaviour of young people in a quantitative way, without discussing the concepts of participation or young citizens in a more detailed way or even including the views of young people on political engagement. Collin also starts with the question how the decline of traditional political engagement among the youngest cohort is to be explained. In contrast to previous studies, her study's focus is on how the comprehension and the relationship between policies, political identity and engagement can be interpreted in the context of continuously internationalized and digital environment. The book addresses four main research concerns: (1) the reasons behind youth participation in a digital society, (2) the question how youth participation policies shape the political identity of young people, (3) the implications of the shift in comprehension and practices of participation in advanced representative democracies such as Australia or the United Kingdom (UK), (4) possible solutions how governments or other political stakeholders could react to a youth-centred understanding of participation so as to include young people as citizens.

Before examining these relationships, the book starts with some considerations about the concepts of youth and citizenship as well as the problems that emerge when youth participation is explored. In respect of the latter, Collin stresses that young

people are mostly perceived as inactive or politically disconnected instead of including young people's views on political involvement in order to discern whether the youngest citizens actually do not care about politics or whether their approach – compared to older citizens – is just another one, i.e. through online facilities, which are increasingly significant in everyday life as well as in political and social processes. With regard to the importance of the internet and digital media, she refers to two different approaches. The first is of a normative nature where the internet is recognized as a feature to foster citizenship and participation as well as democracy in general. The second, in contrast, questions the traditional understanding of politics insofar as digital media and the internet in general are perceived as part of political participation itself and as a public space where opinions are exchanged, networks are built and developed and activities are planned and performed. For the rest of the study, the second approach is primarily addressed. As mentioned, the study draws on a qualitative comparison of Australia and the UK where youth participation, governmental and non-governmental youth participation policies as well as interviews with NGO staff (N=18) and young people (N=52) in both countries are analysed. The first part of the book provides an overview of the current state of research regarding the concepts of citizenship, youth participation and the role of policies and digital media as well as the underlying theoretical approaches. Special attention is paid to Coleman's (2008) approach that distinguishes between three means how citizenship can be promoted through policies: Managed citizenship, differenced-centred citizenship as well as autonomous citizenship. Here the first understands young people as citizens-to-be, the second as legitimate citizens that are to be included in political processes to a certain degree, and the third regards young people as independent political actors (p. 37). In the following section Collin addresses different policies and their contexts, both in Australia and the UK, concluding that these strategies frame the understanding of youth, citizenship and youth participation to a high degree. In contrast to governmental policies on youth participation, non-governmental organizations offer a much broader view of young people's role as citizens and political as well as social actors. On the basis of ten case studies of British and Australian NGOs, Collin analyses how these organizations support young people in their interests and requests to engage in different activities. As compared to governmental efforts regarding youth participation, NGOs treat young people as equivalent citizens and include them in most activities and decisions. In order to complete the picture, young people were asked about their comprehension of participation, involvement in participative processes as well as the role of internet and digital media regarding their engagement. Drawing on her results, Collin concludes that young people are anything but apathetic or disinterested, however, they do use a different repertoire and other channels than traditional forms of participation to bring their interests to bear. Moreover, they regard democracy and traditional politics as important, but many interviewed young people are mostly sceptical about governmental attempts to foster youth participation.

While the findings as well as the approach draw new light on research into youth participation, there remain some critical remarks and questions. Although the concept of participation is discussed in the first part of the book, it remains somewhat unclear how the term is used in the rest of the book, above all, whether youth

participation and political youth participation are interchangeable concepts. This leads to the second question, namely whether all engagement of young people in the examined NGOs can be regarded as political engagement or whether social and political participation can or should be distinguished. Similarly to the use of the idea of participation, the differences between 'internet' and 'digital media' are sometimes not very well articulated, especially since these terms are not defined despite their important roles within the study. Although Collin presents a broad picture of the work and involvement of young people in different organizations as well as the activities undertaken within these NGOs, it remains mostly unclear whether and how these efforts have actually affected political decisions and processes, and could therefore be seen as anything more than tokenistic intentions. Due to the qualitative study design, the aim of the book was certainly not to present a generalizable picture of young people's participatory behaviour; nevertheless the author often speaks of 'the youth' or 'the young people'. Regarding the small number of interviewed young persons, these terms should be used with caution. In combination with the emphasis on already active adolescents, it raises the question whether and how the presented perceptions and engagement can be interpreted as an illustration how the youngest generation thinks and acts. It would have been interesting to learn also about the perceptions of democracy and participation of those young people that are not already involved in NGO activities, i.e. to find out if they are engaged in any other way and if not, what keeps them from being active.

Apart from these remarks, the book examines important and mostly disregarded questions and relationships between youth policies, youth participation, and the role of the internet. Other than most of the previous literature on the political engagement of the youngest cohorts, the study includes not only the governmental and organizational views, but the even more important the perspective of the adolescents themselves. This approach permits a much detailed and deeper understanding of the concept and provides advice for further policies that aim to foster participation of young people regarding political processes and decision-making. Particularly, the emphasis on the internet and digital media as important space and opportunity structures to reach and involve young persons in different forms of engagement, is a crucial step forward to better understand the mechanisms behind young people's inclusion in political as well as social processes as well as an oppotunity to support those.

Daniela Koller

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Book Review

Balázs Majtényi and György Majtényi (2016) A Contemporary History of Exclusion. The Roma Issue in Hungary from 1945 to 2015. Budapest; New York: Central European University Press. 242 pages.

The first version of Balázs Majtényi and György Majtényi's book was published in 2012 for Hungarian readers under the title *The Gypsy Issue in Hungary, 1945-2010 (Cigánykérdés Magyarországon, 1945-2010).* This was followed in 2016 by a second edition for an international audience with a new heading *(A contemporary history of exclusion. The Roma Issue in Hungary from 1945 to 2015),* complemented with an analysis of the following five years.

According to statements by the writers, the goals of this volume are, on the one hand, to illustrate the history of the Hungarian Roma community based on state policy documents and in the context of Hungarian national history, while on the other hand the authors wish to create a kind of Roma 'counter history' that opposes prevailing majoritarian – and often stereotyped and prejudiced – knowledge concerning the Roma. The reason the authors discuss the Hungarian Roma community's history in the framework of Hungarian national history is that they think that the concept of the Hungarian nation must also encompass the excluded Roma, so by this means they seek to contribute to the integration of the Roma community.

Regarding the research methods, the writers point out that they follow an emancipatory structuralist approach when making claims about the different aspects of the Roma issue, while remaining open to the application of other analytical viewpoints and to self-reflection. Readers meet the authors' resulting human-rights focused approach through their descriptions and analyses. This approach is especially important if we consider that the Hungarian Roma community, a community excluded and discriminated against, faces ongoing human rights problems (difficulties that arise from their daily experiences which become integral problems in their lives). A Roma person reading this book would feel that the authors are familiar with the difficulties in their communities, indicating that the authors have succeeded in using so-called inner vision in respect of the ethnic group under discussion.

The book consists of six main parts: The Introduction discusses the context of Roma identity and history, but the writers also comment on Roma history sources as well, in the same way as they do during the examination of basic and unavoidable questions such as 'What does Hungarian and Roma identity mean in practice?', 'How are these identities constructed?', and 'What kind of phenomena characterize them?'.

The following chapters deal with the political and social events of Roma history in a Hungarian context. The second chapter discusses Roma history from 1945-1961, the third from 1961-1989/1990, the fourth from 1989/1990-2010, and the fifth from 2010-2015. In the sixth chapter a summary of the book is presented.

The volume only partly and sporadically refers to the era before World War II, which means that the reader will primarily learn about Roma community history from 1945 until the present.

Referring to the six decades from 1945-2015 the authors discuss the phenomena of the black ID cards given to Roma who followed a migrant lifestyle; forced bathing (when members of the Roma community were singled out and forced to take disinfecting baths containing different chemicals and pesticides); and the poor relationship between the police and the Roma. However, one can also read about the activity of Mária László, the first significant representative of the Hungarian Roma community. Majtényi and Majtényi elaborate on and analyse the 1961 decree of the Hungarian Socialist Worker Party's Central Comittee's Politburo (which governed communist Hungary) which did not consider the Hungarian Roma community to be a separate nationality group, but defined it as a lesser segment of society which needed to be developed. The relationship between Roma and non-Roma people is also discussed through a presentation of hierarchical and client-patron types of interaction. The authors describe the problem of the impossibility of Roma self-organization during the socialist era. They also write about the assimilation policies in existence from 1961-1989/1990 based on the above-mentioned 1961 decree of the Central Committee's Politburo of the Hungarian Socialist Workers' Party. As the volume also provides information about the last two and a half decades of history, readers can trace the attitudes of the democratic powers and governments, and see how oppression that originated in the past has been replicated in the practices of today's political actors. That is, the authors trace the continuation of the process of discrimination and exclusion across decades, observing how self-organized Roma have tried to fight such obstructionist behaviour, and how progressive Roma intellectuals have failed as a consequence of divisive majoritarian political practices.

The book discusses the social aspects of the Roma issue as well. In particular, topics such as wage work, housing, the social benefits system, education, employment, and segregation are dealt with.

One may say that the volume will not contribute new information to Hungarian Roma experts, primarily because the book is a (good) summary of relevant literature from earlier decades. The main historical events that are discussed are already well-known. For instance, the role of black ID cards in the life of the Roma community has already been described by Gyula Barna Purcsi (Purcsi, 2001). Mária László's place in Hungarian Roma history after 1945 was discussed in Ernő Kállai's study (Kállai, 2009), while the 1961 decree of the Hungarian Socialist Worker Party's Central Committee's Politburo was elaborated on by Barna Mezey, László Pomogyi, and István Tauber (Mezey et al., 1986). In the same way, for similar information we can refer to the research activity of the Roma Press Center that published a book about the forced bathing of the Roma (Bernáth, 2002). Nevertheless, this book is a good synthesis of literature in English, because, besides the above-mentioned authors and publishers, it also discusses the most significant and relevant work of János Ladányi, Iván Szelényi, Péter Szuhay, Gábor Havas, Csaba Dupcsik, István Kemény, Michael Stewart and Jean-Pierre Liégeois. Especially valuable are those new archival data that illuminate previously unknown details. Especially those new archival data are valuable that illuminate previously unknown details such as the Council of the Zala County Executive Committee Administrative Committee's Decree on keeping records of Gypsies from 1959, or the Executive Committee of the Békés County Council's report on the cultural situation and employment problems of Gypsies living in the

county; but we may mention the letter of the Roma community of Döge as well, whose representatives complained about the exclusionary behaviour of the local Executive Committee Secretary who did not want to hire them to operate machines.

The volume is illustrated by a number of photographs of families, film productions, holocaust survivors, wage work, gypsy settlements, house-building events, pictures from everyday life, school moments, placards, politicians, and Roma intellectuals. Their arrangement is a bit unpredictable and the reader will experience that they often do not fit the topic under discussion. Some texts are appropriately accompanied by photographs, while in other cases it is not clear how the given pictures are linked to content.

In summary, this volume is recommended for readers who are not familiar with Hungarian Roma issues from 1945-2015, about which this book is a very good and objective guide. However, it is also recommended to experts who would like to explore previously unseen archival data in their work.

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Book Review

Maria T. Grasso (2016) Generations, Political participation and Social Change in Western Europe. London; New York: Routledge. 255 pages.

Writing about popular phenomena in social science is important, but it can be a tricky issue for an author. On the one hand it is often difficult to offer a new, innovative perspective, which would contribute to the existing body of knowledge, while taking into account relevant standpoints, theories, approaches and interpretations, and all that under the close scrutiny of fellow academics. Authors who write about contemporary buzz topics are applauded yet closely monitored by the public. Maria T. Grasso has certainly avoided these traps with her book Generations, Political participation and Social Change in Western Europe and, despite the proliferation of papers on the same topic, has written a remarkable, comprehensive and intelligible analysis of one of the most important aspects of youth studies – political participation. Even though the topic of youth participation has been examined from various points of view, with this book Grasso managed to find a niche within political participation studies that needed to be filled, and she has brought new relevant insights into it.

The study of political participation is one of the most propulsive topics in contemporary political science. Scholars are conceptualizing it, measuring it, comparing it, defining it and operationalizing it, all in order to understand its relevance for democracy and consequently for society as a whole. Political participation studies are so omnipresent and multifaceted that, as Van Deth (2001) claims, they have become 'the study of everything'. The same goes for youth political participation. Modern-day European youth policy, summarized as the EU Youth Strategy, devotes considerable attention to the development of active citizens as one way to decrease the democratic deficit the EU is faced with. However, the idea of youth participation goes beyond EU policies, because as scholars believe, it has a beneficial role in empowering young people and creating an enabling environment for their active role in society and polity. Political participation of young people is not only a policy measure, but is also a pedagogical tool for youth development, thus it should be seen as that, too. Numerous texts written by political scientists, sociologists and policy experts on this matter distinguish political from social participation, talk about the role of education, gender, resident status or social class in determining the level of participation, or explain the difference between conventional and unconventional forms of participation. Despite their number, there are very few texts that manage to comprehend theoretical standpoints and empirical data in a coherent text, however the book Generations, Political participation and Social Change in Western Europe succeeds to offer a logically coherent, intellectually profound, and academically relevant story on political participation in 10 Western European countries, seen through the prism of generations.

In a 255-pages-long book published by Routledge, Maria T. Grasso seeks to answer the question whether there are reasons to be concerned about the future of democratic politics. As the author writes in the introduction, it is often being heard

that younger generations are disengaged from politics, that they prefer unconventional political participation over conventional politics and that the political behaviour of the youth of today is completely different from that of their parents' generation. Maria T. Grasso in her text critically examines these claims and presents her conclusions based on methodologically rigorous empirical research by putting them into the relevant social and political context. This book, despite its title, is not only about political participation of young people, but is about much more. It is about the future of democracy and the change contemporary society brings in. Maria T. Grasso starts her book with the claim that at the end of the twenty-first century, western publics have become the objects, rather than the subjects of history, and after reading this volume I believe there is no better sentence to start it with.

Generations, Political participation and Social Change in Western Europe consists of eight chapters and a relatively long appendix where the author presents methodological remarks and offers additional data on the topic of this book. In general, each chapter follows logically from the previous one, while also making a specific contribution to the overall argument. It can be said that Maria Grasso succeeded to create a lucid and rich story on different aspects of youth political participation taking into consideration variations depending on countries' specific contexts. Chapter one focusses on political participation as a multi-dimensional concept. Here the author presents a comprehensive literature review of various political scientists and political sociologists on the topic of political participation in order to draw out the key themes relevant for the upcoming empirical analysis. In chapter two the concepts of generations and social change are analysed. The largest part of the chapter is devoted to a discussion of the concept of generation and the characteristics each generation has. Special attention is put on formative years and the generational differences based on them. Maria Grasso in her analysis distinguishes five generations (the pre-WWII, the post-WWII, the baby-boomers, the '80s generation and the '90s generation) for each of which she claims that there are distinctive characteristics and modi operandi. After putting the stress on the importance of socialization and political context and their implication for participation patterns of different cohorts, in the fourth chapter, The evolution of political participation in Western Europe, Grasso focusses on the patterns of popular political involvement in Western Europe. Here institutional ways of participation such as turnout, party membership, union membership, as well as unconventional ones (for example attending a demonstration, joining a boycott, signing a petition, and participation in social movement organization) are examined. Grasso in her analysis uses cross-national survey data from large-N comparative research, namely the World Value Study/European Value Study and the European Social Survey focussing on the period 1981-2006. The author argues that this frame allows her to assess the extent of changes in the political participation patterns without including confounding factors and in order to analyse generational change by allowing the youngest generation to have 'come of age'. Chapters five and six cover formal and informal political participation in Western Europe. There are several important notions of conventional political participation that Grasso points out of which we present three. First, it is a misconception that younger cohorts are less likely than older cohorts to engage in all types of conventional political activities. Second, political contexts as well as education,

are important variables for explaining formal participation. And third, the idea that modernization leads younger cohorts to disengage from 'elite/directed' political activities is not supported by evidence. When it comes to unconventional political participation, the argument that all the younger cohorts should be engaging in elite-changing activities more than older cohorts is not universally correct. Findings about class inequalities are particularly interesting, hence Grasso concludes that countries with strong social-democratic and/or left-wing traditions are weak in these categories. The book confirms that those identifying as left-wing are more likely to engage in unconventional political activities while those who identify as right-wing prefer conventional participation. In addition, the book shows that there are remarkable differences between the 10 observed countries in relation to both conventional and unconventional participation. Chapter seven is in fact a discussion where the author confirms that formative experience matters and illustrates that on the example of baby-boomers or 'the protest' generation'. The last chapter of the book deals with the future of political participation. Grasso claims that the evidence presented in this book shows that while conventional participation is set to continue to decline in the future, unconventional participation cannot make up for this loss in democratic capability. This is perhaps the most important finding in the book because it summarizes the most relevant issues in contemporary democratic theory; how to make democracy more democratic when its distinctive characteristic is becoming less and less appealing to people.

In the light of all this, there is no doubt that the book Generations, Political participation and Social Change in Western Europe is a truly exceptional and original academic text. It carefully combines theoretical insights and rigorous empirical analysis to demonstrate all facets of political participation in the context of generations. Maria Grasso has definitely set a new standard both in youth and political studies with this comparative analysis due to its sophisticated and yet convincing argumentation line. Easy to read and rich in data, this book is an excellent source of information for academics, students and all those who are interested in political participation, youth and social change.

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