Post Workshop Report
(August 2017)

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Beyond Schelling and Axelrod: Computational models of Ethnocentrism and Diversity

Manchester Metropolitan University
June 7th – June 8th 2017

www.davidhales.com/ethnosim2017

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1. Overview

Theme of workshop

Ethnocentrism, a positive orientation towards those with the same ethnicity and a negative one towards others, is widely observed in human societies. Several (computational agent-based) social simulation models show how interactions between individuals emerge aspects of ethnocentrism such as in-group bias based on ethnic markers (Hammond & Axelrod 2006); local cultural homogeneity combined with global polarisation (Axelrod 1997); and racial segregation (Schelling 1971). These models have influenced on-going research that inherits similar frameworks and assumptions.

The workshop spotlighted on-going work influenced by, or in response to, these modelling directions in addition to critical position statements and critiques of the assumptions that such models embody, as well as relevant empirical studies.

References:

- Axelrod, R. (1997) The dissemination of culture - A model with local convergence and global polarization. Journal of Conflict Resolution, 4(2):203-226.
- Hammond, R.A. & Axelrod, R. (2006). The evolution of ethnocentrism. Journal of Conflict Resolution, 50(6):926-936.
- Schelling, T.C. (1971). Dynamic models of segregation. Journal of Mathematical Sociology, 1:143-186.

Format of workshop

The workshop comprised 12 presentations and two one hour panel discussions over two half days (Wednesday June 7th, 12:00pm-5:30pm and Thursday June 8th, 8:30am-1pm, 2017). There was ample time for questions and discussions. Participation in discussions was lively, focused and of high quality, benefitting from the coherency of the workshop topic and the enthusiasm and knowledge of participants.

Post workshop Activity

Themes that emerged from the panels and wider discussions can be found in this report in the Panels and Future Challenges sections. In addition participants were invited to submit original work to a special issue of the Social Science Computer Review Journal on the same theme as the workshop. This is due to appear mid to late 2018.

Workshop Organisation

- Bruce Edmonds, Centre for Policy Modelling, Manchester Metropolitan University (bruce@edmonds.name).
- Laurence Lessard-Phillips, Institute for Research into Superdiversity, University of Birmingham (L.Lessard-Phillips@bham.ac.uk).
- David Hales, Centre for Policy Modelling, Manchester Metropolitan University (dave@davidhales.com).

The workshop web pages can be found at: **www.davidhales.com/ethnosim2017**

2. Workshop Timetable

Day 1: Wednesday, June 7th 2017

12:00 Arrival / registration / lunch (lunch provided in room)

12:45 *Welcome and Introduction*
Bruce Edmonds & Laurence Lesard-Phillips & David Hales

13:00 *Modelling ethnonationalist radicalization: On the effectiveness of nationalist ideologies.*
Martin Neumann

13:30 *Understanding the impact of residential segregation on the emergence of polarized attitudes towards ethnic minorities.*
Thomas Feliciani

14:00 *An Agent-based Modeling Approach to Predicting Effects of Open Enrollment School Choice Policies on Racial Integration in District Schools*
Matt Kasman

14:30 *Disruptive Norms - Assessing the impact of ethnic minority immigration on non-immigrant voter turnout using a complex model.*
Thomas Loughran

15:00 Coffee break

15:30 *Immigration, social networks and the emergence of ethnic segmentation in low-skilled labour markets.*
Huw Vasey

16:00 *Hammond and Axelrod's model is not useful for studying ethnocentrism.*
Fredrik Jansson

16:30 Panel 1: *What do our models really tell us and how do we "sell" them?*
Fredrik Jansson, Laurence Lesard-Philips, Edmund Chattoe-Brown, Bruce Edmonds.
Chair: David Hales

17:30 Workshop ends for the day

19:00 Social Dinner: Umani at 147-153 Oxford Rd, Manchester M1 7EE.

Day 2: Thursday, June 8th 2017

08:30 Arrival / coffee

09:00 *Schelling models of Immigration: Parameters and Sensitivities.*
Linda Urselmans

09:30 *An Agent-Based model of interaction between immigrants and a host population: self-organized and regulated adaptation.*
Laurence Lessard-Philips

10:00 *Community diversity and inter-ethnic marriage: an agent-based approach to a complex social phenomenon.*
Ruth Meyer

10:30 Coffee break

11:00 *An Agent-Based Modelling Study of Persistent Segregation in Metropolitan Cape Town.*
Cobus Van Rooyen

11:20 *Endogenous Segregation Dynamics and Housing Market Interactions: An ABM approach.*
Benjamin Bonakdar

11:40 *What Actually Stops Us Going "Beyond" Schelling and Axelrod: Three Challenges.*
Edmund Chattoe-Brown

12:00 Panel 2: *The "new nationalisms" and ethical dimensions.*
Thomas Feliciani, Martin Neumann, Benjamin Bonakdar, David Hales.
Chair: Laurence Lessard-Philips

13:00 Workshop ends

3. Talk Abstracts

Further details including slides of talks can be found at:
www.davidhales.com/ethnosim2017

Modelling ethnonationalist radicalization: On the effectiveness of nationalist ideologies.
Martin Neumann. Jacobs University Bremen, Germany.

Short abstract: This talk describes an agent-based simulation model of ethnonationalist radicalization. Emphasis is put on the recursive feedback between political actors and their constituencies. While evidence is based on the former Yugoslavia the model describes an abstract mechanism of an interlocking of political and cultural dynamics that might cover a class of cases. The results offer theoretical insights by revealing mechanisms that lead to radicalization. These can be found within politics as well as among the population: Between conflicting ethnically homogeneous regions, opposing radicalization forces fuel a radicalization spiral. These processes are driven by political influences. Challenging the theory that diversity breeds conflict, this suggests that multiethnic regions are more capable of withstanding political pressures. This finding supports theories which postulate that contacts improve intergroup relations. However, in the simulation multiethnic societies are vulnerable to violence, driven by the local population.

Understanding the impact of residential segregation on the emergence of polarized attitudes towards ethnic minorities.
Thomas Feliciani[1], Andreas Flache[1], Jochem Tolsma[2], Michael Mas[1]
1. Dept. of Sociology, University of Groningen, Groningen, The Netherlands;
2. Dept. of Sociology, Radboud University, Nijmegen, The Netherlands.

Short abstract: Agent-based models of social influence help us understand how attitudes can polarize in a population divided into two demographic groups. Here we focus on two prominent models of opinion polarization, the negative influence model and the persuasive argument model. Previous work has investigated how the two models make conflicting predictions about the direction and the strength of the effect that the spatial segregation of the groups has on the emergence of attitude polarization. Following this line of research, we test the robustness of previous findings, and investigate which segregation patterns are more likely to contribute to the emergence of polarized attitudes according to the two models. We do so by imposing a spatial setting that is much more realistic than assumed by previous studies, that of real cities, and assuming a multi-faceted definition of individual attributes. Individual attributes comprise some important predictors of attitudes towards ethnic minorities: ethnicity, age and household income. Population density and spatial distribution of demographic attributes are going to be calibrated on very fine-grained census data on Dutch cities, which provide a rich variety of segregation patterns.

An Agent-based Modeling Approach to Predicting Effects of Open Enrollment School Choice Policies on Racial Integration in District Schools

Matt Kasman. The Brookings Institution, Washington, DC, USA.

Short abstract: Open enrollment school choice policies allow (and sometimes require) families to make initial school selections rather than assigning students to schools by default. Many have argued that open enrollment policies have the potential to increase racial integration within district schools by creating opportunities for families in overwhelmingly impoverished, minority neighborhoods to access schools other than highly segregated neighborhood schools. Unfortunately, in practice the impact of open enrollment policies on diversity has been underwhelming, with many schools in large urban school districts that have implemented these policies still serving a substantial majority of students from a single racial background. In order to explain how the details of these policies influence their outcomes and might be altered to improve racial integration in public schools, I construct agent-based models of school enrollment in a large, urban school district using open enrollment. Using these models, I find that increasing participation in the school choice process would have the largest positive impact on racial integration in the district and increasing the priority given to residential proximity during student assignment would decrease integration.

Disruptive Norms - Assessing the impact of ethnic minority immigration on non-immigrant voter turnout using a complex model.

Thomas Loughran[1], Edward Fieldhouse[1], Laurence Lesard-Phillips[2], Lee Bentley[3]
1. The University of Manchester, UK;
2. University of Birmingham, UK;
3. University of Liverpool, UK.

Short abstract: There is a substantial, but contradictory, sociological and political science literature related to the contextual effects of increased ethnic diversity on socio-political behaviour. Much empirical work in this area has concentrated on providing testable measures that can contribute to the academic debate between contact theory and conflict theory regarding the impact of aggregate area level ethnic diversity on individual level attitudes and behaviours. The paper will present findings from a number of simulations utilising the voter model of social processes connected to turnout. The findings show that increased levels of immigration lead to an increased level of turnout among the non-immigrant majority population over time but that this effect is mitigated by the level of civic duty among the immigrant population.

Immigration, social networks and the emergence of ethnic segmentation in low-skilled labour markets.

Huw Vasey[1], Ruth Meyer[2]
1. School of Arts, Languages and Cultures, University of Manchester, Manchester, UK
2. Centre for Policy Modelling, Manchester Metropolitan University, UK.

Short abstract: It has been widely reported that post-World War II immigration to more developed countries has gone hand-in-hand with the development of ethnically segmented labour markets, particularly in low-skill roles where entry requirements are minimal (Bauder, 2006; Piore, 1979; Sassen, 1996). Whilst numerous theories have been forwarded as to why such situations occur, it has remained difficult to empirically test such conceptualisations because of the numerous interacting processes which produce segmentation in the labour market. In this paper, we investigate the processes of ethnic segmentation in low-skilled labour markets, where referral hiring is the norm, with particular reference to the role of ethnically homogenous social networks and forms of 'conservative' discrimination. We employ an agent-based modelling approach, adapting key elements from Waldinger & Lichter's (2003) widely cited networked explanation of ethnic labour market segmentation in late twentieth-century Los Angeles.Results indicate that ethnically homogenous social networks have the effect of increasing the level of ethnic segmentation within a referral-based labour market, but that these networks also help immigrant populations grow and protect them from the negative impacts of employer discrimination. We conclude that empirically-informed ABMs allow us to provide important insights into the manner and extent in which changes in social conditions may effect group behaviour. Such impacts are not random or occasional, but are tightly related to the non-linear and emergent nature of a multifaceted social system.

Hammond and Axelrod's model is not useful for studying ethnocentrism.

Fredrik Jansson, Centre for the Study of Cultural Evolution, Stockholm University, Sweden.

Short abstract: Hammond and Axelrod's 'ethnocentrism' model was initially published as a model on the armpit effect and inclusive fitness among simple organisms. The same model was later reframed as a model on ethnocentrism among humans, and inspired a branch of research on group discrimination. The question, though, is whether such a reframing is warranted. In short, I will argue that the resulting 'ethnocentrism' is driven by the fact that agents interact mostly with their clones, and group markers work as fairly reliable proxies for identifying nonclones. The applicability to what we know about ethnocentrism should be practically nil, and the model is sensitive to relaxing any of these assumptions. The conclusion is that there is little we can learn about group discrimination from the model in its current form, and attempts at generalisations are likely to fail.

Schelling models of Immigration: Parameters and Sensitivities.

Linda Urselmans. Dept. of Government, University of Essex, UK.

Short abstract: The Schelling model of racial segregation has made a vital contribution to our understanding of how ethnic segregation can occur even if residents of a

neighbourhood are not particularly segregationists. Since its introduction in 1971 the model has become widely used in the field of immigration research. Building on previous iterations of the Schelling model I explore the effect of physical migrants represented as new agents entering the grid. The aim of this adaptation is to model immigration as an external shock to the existing system, rather than treat it as an initial state. The findings indicate that short-term effects of the rate and size migration weigh heavily on agent happiness and segregation behaviour, but that in the long run, population density is the most crucial determinant in model outcomes.

An Agent-Based model of interaction between immigrants and a host population: self-organized and regulated adaptation.

Carlos Lemos[1], Ross Gore[2], Laurence Lessard-Phillips[3], LeRon Shults[1]
1. Dept. of Religion, Philosophy and History, Faculty of Humanities and Education, University of Agder, Kristiansand, Norway;
2. Virginia Modeling, Analysis and Simulation Center, Old Dominion University, Norfolk, VA, USA;
3. Institute for Research into Superdiversity, School of Social Policy, University of Birmingham, Birmingham, UK.

Short abstract: We present an ABM of "abstract" type for describing the interactions between a host population and a minority of immigrants, combining ideas from existing Agent-based models of segregation, dissemination of culture and ethnocentrism. The model also takes into account the framework elaborated by Berry (1997) for describing the role played by culture, contact and participation on processes of acculturation. The model entities are agents of a single type, a network between agents, and a "government" modeled as a "proto-agent," i.e. as a procedure where the user can implement "policies" that affect agents. Agents interact with their network neighbors with a probability that depends on their education, cultural and identity "distance". During the simulation the model produces a dynamic network of links between the agents. The "government" can then act in several ways, such as varying the probability of immigrants to acquire "security" (e.g. jobs) or lower the cultural barrier. The evolving network is analyzed using network segregation indices and algorithms for detection of social circles in ego networks. These patterns can be discussed under the light of sociological theories, for both "self-organized" and "regulated" interactions.

Community diversity and inter-ethnic marriage: an agent-based approach to a complex social phenomenon.

Huw Vasey[1], Laurence Lessard-Phillips[2], Ruth Meyer[3]
1. School of Arts, Languages and Cultures, University of Manchester, Manchester, UK;
2. Institute for Research into Superdiversity, School of Social Policy,University of Birmingham, Birmingham, UK;
3. Centre for Policy Modelling, Manchester Metropolitan University, UK.

Short abstract: Inter-ethnic marriage is both a cause and a consequence of immigrant integration. It is, however, unclear how individual preferences and opportunities for contact may combine to produce the spectrum of rates of inter-ethnic marriage we observe in the UK and elsewhere. In this presentation we investigate the processes of partnering in

diverse communities, focusing on individual preferences, opportunities for contact, and group size to uncover how these may lead to differing rates of inter-ethnic marriage. We employ an agent-based modelling approach, utilising quantitative and qualitative sources from across the social sciences, in order to develop a complex model of emergent processes of differentiation and change in the marriage patterns of ethnic groups in a variety of different spatial settings. Results indicate that, in line with existing evidence, diversity (especially in areas with low ethnic homogeneity) fosters higher rates of inter-ethnic marriage. However, this is strongly mediated by group size, network types, and the extent of search ranges. We conclude that agent-based models allow us to provide important insights into the manner and extent in which changes in certain social conditions may affect group behaviour. Such impacts are not random trends, but are tightly related to the non-linear and emergent nature of a multifaceted social system. By extension, therefore, researchers need to remain willing and able to incorporate an analysis of the complexities of how inter-ethnic marriage rates interact with levels of diversity and social amalgamation, and how these may vary across space and place. In this presentation we shall also discuss on-going extensions to the original model, including modelling migration within small areas, and adapting partner preferences based on social scientific evidence.

An Agent-Based Modelling Study of Persistent Segregation in Metropolitan Cape Town.

Cobus Van Rooyen. Dept. of Geography, Birkbeck, University of London, UK.

Short abstract: The South African city was shaped more by a turbulent political past than by the inherent dynamics of urban growth. The legacy of apartheid was ingrained in the fibre of urban life and more than twenty years after democracy, segregation is persisting in the major cities and emphasizes the substantial influence social and political factors had and still have on the urban development of the South African city. The present research project aims to extend research on the spatial distribution and socio-economic exclusion of the segregated urban areas of South Africa and improve the understanding of the foundations of segregation in the urban environment in the country. The aim is to construct an agent-based model, which will provide for the ability of producing alternative 'what-if' scenarios to study the impact of complex dynamical mechanisms on the persistence of racial and socio-economic exclusion in the study area. This will serve as theoretical foundation on which the specification and development of modelling methodology is based for the research study.

Endogenous Segregation Dynamics and Housing Market Interactions: An ABM approach.

Benjamin Bonakdar. Institute for Macroeconomics Ruhr-University Bochum, Germany.

Short abstract: In contrast to previous research, I hypothesize that residential segregation patterns do not only result from an individual's perception of different ethnicities in a particular neighborhood, but is rather influenced by socioeconomic factors. The underlying assumption here is that the interpretation of Schelling's statement "being close to people of your own kind" can be extended to the social status of an individual, which is part of the comparison from oneself to the society and the respective peer group. Accordingly, agents are endowed differently, which leads to the emergence of a system with a higher degree of

heterogeneity. In order to analyze these dynamics, I implement an agent-based model with several features, where the decision criterion of moving is connected to housing affordability. The endogenous segregation dynamics get determined by an endogenous tolerance function, a multidimensional dissimilarity index and a happiness function, which serves as determinant for the actual moving decision. Since agents are bound to their individual housing budget, they can only move, if a suitable spot was found. The ability or disability of moving elsewhere might lead to further segregation outcomes and thus, to other incentives for segregation behavior.

What Actually Stops Us Going "Beyond" Schelling and Axelrod: Three Challenges.
Edmund Chattoe-Brown. Dept. of Sociology, University of Leicester, University Road, Leicester, UK.

Short abstract: Agent-Based Modelling finds itself in the unusual position of having a methodology that almost everyone seems to agree on, with examples showing that it works (which, incidentally almost nobody cites) but, at the same time, almost nobody follows. This presentation shows how, in three different ways, this oddity harms the possibility of really going "beyond" Schelling and Axelrod. The first challenge involves "element selection". How do we decide (and much more importantly how do we justify) the selection of some elements (and, either explicitly or implicitly, the rejection of others) in a particular ABM? The second challenge is dealing with "heaps of models". Because there currently seems to be no principled basis for element selection, models simply emphasise the interests or disciplinary backgrounds of their designers or evolve until they deliver the "right kind" of answer. The third challenge is that of "research design" and validation. What would it mean to say that we had supported (or failed to support) a particular variant of the Schelling (or Axelrod) models with evidence? I will discuss these challenges and suggest possible solutions.

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4. Panel Sessions

Each workshop day ended with a one hour Panel session. The panel themes and questions were circulated to all attendees prior to the workshop. Each panel member was given 5 minutes to state their position / opinion on the panel topics. After this, the panel took moderated questions from the audience.

The panels stimulated a lot of interesting discussion. Based on notes taken and input received from participants, after the workshop, a brief write-up of the main themes that emerged is included below.

Panel 1. What do our models really tell us and how do we "sell" them?

Members: Fredrik Jansson, Laurence Lessard-Philips, Edmund Chattoe-Brown, Bruce Edmonds.
Chair: David Hales

Many computational models of ethnocentrism, segregation and related phenomena are highly abstracted. Often they provide an illustration of some general dynamic process. But what can such models say about the real world? More generally how can models productively be applied to policy?

a. Are abstract models anything more than stories reflecting our own biases and assumptions?
b. What constitutes "validation" of "Schelling / Axelrod type" models?
c. How do modellers avoid charges of scientism or naturalistic fallacy?
d. Is it possible to devise simulation models for policy and if so how can they be presented in a clear and plausible way?

Themes that emerged from the panel discussion:

Models

Models are simplified representations (abstractions) of reality. Hence all models are abstract. A distinction can be made between models that are strongly related to empirical data and those that are not. We can also distinguish between simple models (with few parameters) and less simple models with many parameters.

The "Schelling / Axelrod" type models are simple (agent-based) models that are not strongly related to empirical data. However, their outcomes are complex and support a compelling and understandable explanation (or story) of broad social patterns that emerge from individual behaviour.

Simple models are useful because they may allow for a rigorous understanding of the parameter space and could provide understandable and parsimonious explanations. Less simple models are hard to explore or understand although they may evidence interesting behaviour.

Most of the models in this area do not support strong predictions and it is dangerous to present them as such. In general, agent-based models involve the complex interplay of many agents' interactions and (often) random elements.

They have other uses such as: elaborating scenarios; revealing hidden assumptions; testing consistency; deriving consequences; communicating ideas; making implicit biases transparent; detecting early-warning signs and tipping points.

They can be evaluate by: assessing the soundness of their assumptions; determining if it is possible to falsify the model; determining if it is possible generalise the model. It is important to note that failing models can be useful because they illustrate the nature of the phenomena by what is missing from, or wrong with, the model.

Simply fitting a model to existing empirical data does not automatically constitute validation or aid understanding. This is particularly the case when a model contains several parameters that can be "tuned" to make a superficial fit with past data without giving any insight or future predictive soundness.

"Stories" could be better than "data" in terms of understanding, communicating and / or validating models. However, this raises the question of what constitutes a quality story in relation to phenomena and models.

Policy

From a policy perspective the modeller does not say how things "should be", but rather offer alternative choices of action to policy makers: "the models says if you do this then that could happen".

However, modellers and policy stakeholders should be aware that the framing and choices presented depend on the model assumptions. This indicates that the major assumptions of the model must be clearly and transparently communicated to all stakeholders, not just other modellers.

Modellers should consider that policy makers in controversial areas may look for models that fit what they already want and / or believe. Hence it is important for modellers to be clear about the limitations, scope and application of models and not to "oversell" them in a policy context. For example, rational action may apply in some circumstances but does not in others.

One way to advance policy level communication is through engagement with "policy analysts" rather than policy makers. Analysts focus on evidence "on the ground" and can act as bridges between policy stakeholders and modellers.

Panel 2. The "new nationalisms" and ethical dimensions

Thomas Feliciani, Martin Neumann, Benjamin Bonakdar, David Hales.
Chair: Laurence Lessard-Philips

Nationalisms appear on the rise as faith in globalisation and global institutions wanes. Also extreme ethno-cultural identity politics are emerging in new forms such as identitarianism in Europe and the Alt-Right in the US. Concepts such as ethnocentrism, racism and xenophobia are politically contentious often provoking strong reactions such as anger, fear or denial. New ideas in these areas have ethical and political implications.

a. Are existing models relevant for explaining the rise of the "new nationalisms" and / or extreme ethno-cultural identity politics?

b. Is something new happening related to 21st century conditions such as the networked society, identity politics and globalisation that are relevant to these phenomena? If so how can models capture it?
c. How can social modellers navigate the political and ethical dimensions of their work in a principled way?

Themes that emerged from the panel discussion:

Identity

There is a great change occurring in the 21st Century which is the emergence of the "anywheres" who choose their identity worldwide. They have to answer the question "who are the people of my own kind?" rather than have this dictated by place or birth. This creates new dynamics and new problems. Modern identity can be more problematic / fluid and the new nationalisms reflect this.

Existing ethnocentrism models are not only relevant but necessary. They offer a new way to represent and formulate stories related to the rise of the new right. These are not new phenomena but the scale and means are – such as the use of social media. Previous rises in nationalisms have coincided with new communication technologies (such as newspapers and radio).

With the emergence of social networks and online communities it seems that group based identities can be easily created in a fast and fluid way yet these are possibly superficial. The way individuals come to identify each other "as the same kind" may be with simple markers or tags. For example, consider "virtue signalling" with twitter pictures and hashtags.

Although the networks offer the possibility of open universal interaction, we should not be surprised that segregation and grouping dynamics quickly emerge even from the most superficial forms of distinctions because existing models, with minimal assumptions, robustly demonstrate this.

It may be true that superficial markers or tags can play a role but the complex way people form their identities is not represented in the models we are discussing. We need to capture the complex interplay between ethnic, cultural, economic and power aspects in identity formation.

However, the idea that the world is changing towards "anywhere" type interactions is not true for most people. Somewhere is still somewhere. Indeed, it can be argued that it is the clash between anywheres and somewheres that may be driving the emergence of new forms of nationalism.

Within Political Science, globalisation is often viewed as an on-going external shock. Tensions between communities versus individuals do not appear properly represented in most models. New approaches are required to model globalisation and associated tensions.

Politics and History

Most existing models do not model "politics" in which agents explicitly pursue their goals through political actions and institutions. Agents are often passive, leaderless and unable to take reflective political action. This precludes critical review, understanding and

representation of power relations. Implicitly this could be viewed as complicity with power as it obscures the role of power.

History in often missing from models - many models start in a kind of “state of nature” where from randomised initial conditions it is demonstrate how individual interactions emerge social patterns and structures. It is rare for models to embed history in the form of individual beliefs and institutions at the outset. In this context it would be interesting to consider or classify models as either only relevant for a given time (i.e. historically situated) or as more general “universal” models that consider the broad sweep of historical development.

Several models within Conflict Science have shown that segregation actually reduces conflict. But these models do not fully address the complexity of the phenomena.

One way to look at the political and economic consequences of group boundary formation – within a population – is as a mechanism for the distribution of (possibly declining) privileges. By drawing boundaries one can identify and justify those who will receive certain distributions of privileges.

Ethics

When models, that do not represent power or politics explicitly, but are oriented towards “policy advice”, this raises the danger of a charge of “complicity with power”. Aspects of this may be seen in the recent popular backlash against “experts” which indicates a latent critique of “technocracy” and the problems associated with it.

Modelling is often viewed as a technocratic exercise rather than a critical one but models in this area may not be mature enough to warrant this stance. There is a dearth of thorough reproduction and critical evaluation of previous models. Critical approaches should be encouraged because this, done properly, improves rigour and transparency.

The peer review process is how to deal with many of these issues. However, this is costly and there is a bias against publishing negative results. It would help if there were more forums for such work.

Modellers should be aware of the dichotomy of “everything is politics” versus “the scientific process should not be guided by politics” and where they fit on this continuum. This is relevant when negotiating political dimensions by, for example, not falling into the trap of producing “model results to order” or unthinkingly accepting assumptions embedded in existing models. For example, the Schelling model assumes a liberal worldview (ideology) insofar as it presumes freely acting unconstrained individual agents deciding to move where they want.

More generally, modellers could put their “cards on the table” and be clear as to what their wider ethical and political attitudes are - since their biases can be unknowingly reflected in their models. We may see the emergence of “committed” or “critical” modelling in which specific ethical and / or political positions are explicitly championed or challenged.

5. Future Challenges

From discussions at the workshop, and post workshop feedback, a number of broad future challenges were identified in the context of computational models of ethnocentrism and diversity. These are briefly outlined along with related topics and open questions.

Power and politics

Many ABM models related to ethnocentrism, segregation and diversity focus is on how comparatively free acting individuals emerge collective outcomes by following some simple behavioural rules. This approach is problematic when addressing phenomena such as ethnic violence, nationalism and other political phenomena. In these cases explicit representations of political and collective agencies are necessary.

Topics:

- Modelling explicit political goals and actions within agents – what forms of agent architecture is sufficient to model political actors?
- Investigate group boundaries as a mechanism of economic / political exclusion – what kinds of unequal distributions of surplus and power are stable or unstable?
- Explore the emergence of politics from the “us / them” distinction – is an in-group / out-group distinction a necessary condition for politics or can universalistic principles prevail?

Interpretation and validation

Claims of predictive power for ABM are problematic or even dangerous because they may produce false confidence. Several alternative uses for such models have been proposed but little work has been focused on what constitutes acceptable validation methods in these cases. One may interpret ABM as a way to produce or test stories that help us understand the social world from a causal agency point of view. Yet little validation work specifically focuses on this method.

Topics:

- Novel methods for Interpreting models as stories, and stories as models – are general methods possible for interpreting and implementing models as stories?
- Develop novel validation methods other than prediction and empirical fitting – how to validate models not produced for the purpose of prediction?
- Replication and critical evaluation of existing models to identify good and bad practice – what previous well cited models evidence good or bad validation practice with the benefit of hindsight?

Interaction with policy stakeholders

If models are to be of value in the policy process then it is necessary to communicate to stakeholders in a clear, compelling and transparent way. Yet modellers and policy stakeholders use different terminologies and may have conflicting goals and interests. How can productive interactions be supported?

Topics:

- Identify productive and non-productive methods / tools for interaction with policy stakeholders including policy analysts – what works and what doesn't based on previous case studies and experience?
- Develop methods for incorporating policy behaviour directly into models – how can the policy process itself be modeled?
- Explore model applications to, and evaluations of, the localism agenda – which centralised governmental functions can be radically decentralised and demonstrated in a model?

Identity, globalization and the rise of nationalisms

Emerging forms of nationalism, and ethno-cultural identity politics, appear highly relevant to existing ABM approaches. Specifically where information networks enable new kinds of interactions with wide reach yet focus on cultural or ethnic signifiers. The tensions of globalisation in the context of the "alt-right", the "left behinds" and the mobile "anywheres" have received little attention within ABM models yet are increasingly used categories in political discourse.

Topics:

- Develop models of network enabled ethno-cultural identity formation – how does new communications technology mediate identity formation and expression?
- Explore the relationship between ethnic identity and national / cultural identity – why are some forms of identity highly persistent and others more fluid?
- Novel models of globalization and associated socio-economic tensions related to identity, and nationalisms – how do some ethnic or other groups maintain privileged positions?

6. Short biographies

Laurence Lessard-Phillips is a Research Fellow at the Institute for Research into Superdiversity, University of Birmingham. She previously worked at the University of Manchester and the Netherlands Interdisciplinary Demographic Institute. Her research interests include the perceptions, measurement, and dimensionality of immigrant adaptation; ethnic inequalities in education and the labour market; the use of agent-based models related to immigration and diversity; the transnational behaviour across immigrant generations; and social inequalities and social mobility. She is currently leading an ESRC-funded research project investigating the role of family capital on socio-economic and civic-political inclusion in Canada and Britain.

Bruce Edmonds is Professor of Social Simulation and Director of the Centre for Policy Modelling, which has a world-leading reputation in the field of social simulation. His research covers all aspects of how to use computer simulation in order to help understand social phenomena, especially in complex situations and on policy-relevant issues. He co-edited the first handbook in the field (Edmonds & Meyer 2013) for which a second edition is already scheduled. He instigated and designed the £2.7M UK project on the "Social Complexity of Immigration and Diversity" (SCID). Website: http://cfpm.org

David Hales is a computer scientist and visiting academic at the Centre for Policy Modelling in Manchester. He has an interest in cultural evolutionary processes related to groups, networks and cooperation. A specific focus is the self-organising characteristics of simple cultural markers (or tags) that can be observed and imitated. Tag models have various interpretations applied to them (including, for example, ethnocentrism in the Hammond and Axelrod model). A more general focus is how group properties emerge from individual behaviour and individual behaviour is shaped by, and perpetuates, group properties. Ideas in this realm relate to conceptions of rationality, morality, agency and evolution. Website: http://www.davidhales.com

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