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Christian Meyer

New Alterities and Emerging Cultures of Social Interaction

With commentaries by

Stephen Brown, Daniel Gaus, and Dirk Messner

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Abstract

Globalization has generated increased societal heterogeneity and awakened interest of a new kind in social cohesion and integration. But globalization is not the only contemporary process to give rise to societal hybridization. Two other such processes—much less attended to in the theoretical debate but no less problematic as regards social integration—are societal ageing and robotization. Drawing on statistical estimates, this paper begins by assessing the relevance of these new processes of hybridization. The predictions in question indicate that in the near future, everyday interaction, not just with cultural strangers and 'intelligent' machines, but also with people suffering from dementia, will be an omnipresent phenomenon, confronting our societies with types and degrees of alterity never before encountered. Whereas contact with cultural strangers is to some extent familiar (though not yet taken as standard), interaction with intelligent technological devices and dementia sufferers represent new forms of alterity for which most societies have not yet established routines of conduct. This paper gives a detailed account of a number of empirical studies showing how new forms of hybrid interaction and cooperation evolve out of repeated contact with each of the three alterities. With this groundwork in place, the paper then attempts to identify not only the ways in which routines may develop out of interaction with the three alterities but also the trends towards, and prerequisites for, the emergence of a new culture of cooperation and interaction.

Keywords

Social and Cultural Change, Cultural Heterogeneity, Alterity, Social Interaction, Dementia, Robots, Virtual Agents, Globalization

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New Alterities and Emerging Cultures of Social Interaction[1]

Christian Meyer

Introduction

In recent decades, social and cultural hybridity[2] have increasingly been perceived as topics of relevance—practical as well as theoretical—for many of the world's societies and at different levels of social reality ranging from global cooperation to situated social interaction. That we live in a 'world in creolization' has become a commonplace (Hannerz 1987). Concerns about the progressive disintegration and fragmentation of (world) society as a result of cultural hybridization and globalization have prompted a new scientific interest in (ultimately Durkheimian[3]) questions of social cohesion and integration.

To be sure, local communities, emerging urban centres, national societies, and—most recently—transnational formations have always been confronted with the challenge of absorbing, integrating, and assimilating persons, practices, and phenomena from the outside. Migrants and displaced people from adjacent rural areas, remote territories, and unknown lands have always had to be integrated into the resident community in some way or other, and this is still the case. As a rule, societies have developed routines for the business of daily cohabitation with cultural strangers, and for their integration and (sometimes) assimilation—though these practices have certainly not occurred without conflict, rejection, and segregation.

[1] The author is grateful for generous support by the Centre for Global Cooperation Research (Käte Hamburger Kolleg) at the University of Duisburg-Essen in the form of a senior fellowship that made research for this paper possible. I thank the three commentators for their close reading and valuable interpretations of this text. Furthermore, I thank Claus Leggewie, Erhard Schüttpelz, Alexandra Przyrembel and Christine Unrau for helpful comments on earlier versions of this paper. I am also grateful for valuable discussions at the colloquium of the Centre for Global Cooperation Research, the department of sociology of the University of Duisburg-Essen and the department of sociology at the University of Erlangen-Nürnberg where I presented parts of this paper. Finally, I would like to thank Margaret Clarke and Martin Wolf for their editorial support.

[2] Hybridity is used here as an umbrella-term covering a number of metaphors of cultural mixture such as 'creolization', 'syncretism', and 'melting' (Stewart 1999, 2011). Here, it refers mostly to the increased cohabitation of divergent and internally heterogeneous socio-cultural communities, their intensified interaction, and their mutual acceptance of meanings, objects, and practices (Burke 2009, esp. 21–33).

[3] Durkheim's academic work was driven by a desire to counter the signs of disintegration he was witnessing by calling into service the new science that he and others were establishing under the name of 'sociology'. See e.g. Durkheim 1897.

Sustained by new and ever swifter modes of communication and transport, processes of societal hybridization have gained further momentum in the twenty-first century, increasing in dynamics and scope. As on many previous occasions in the past, this has brought about massive changes in our modes of conviviality in world society.[4]

However, while cultural hybridization resulting from fluxes in immigration is a well-known phenomenon—albeit one with notorious concomitant problems—and builds on older, well-established ways of dealing with difference, new and still unfamiliar types of hybridization are on the increase, and some forms of hybridization are emerging that have no precedent at all in human history. Amongst the processes involved here are, on the one hand, societal ageing, which is currently resulting in the presence of an unprecedentedly large proportion of dementia sufferers in society, and, on the other, technological advances that make it possible—or will shortly do so—to generate artificial personas endowed with interactional abilities and ever less trivial levels of intelligence. At the moment, these processes are at their most dynamic in Western societies and Japan, but they are beginning to extend to other areas of the world as well.

Confronting us as they do with basic questions about what it means to be human, these processes throw up a series of important social challenges, in the form, for example, of changes in the definition of human rights, the age of majority, the general concept of rights and duties, the franchise, and, more generally, changes in mechanisms of social inclusion and coherence. In this paper, I will focus on just one aspect of these changes, namely emerging modes of social interaction triggered by the intensified but normalized presence of established alterities and alterities that are likely to emerge in the future.[5] This will provide us with insights into the nature of changes at the more general level.

This paper is inspired by the perception that human societies have so far not invented any stable social routines for dealing with socio-cultural strangers as *standard* counterparts in social interaction rather than as puzzling exceptions. We are even less well equipped when it comes to routinized, well-established procedures for dealing, on a regular basis, with dementia sufferers, virtual agents, and robots. And yet, not only do we already routinely encounter cultural strangers from the remotest parts of the world; we will very soon have to deal on a recurrent basis with cognitively impaired counterparts and with virtual agents and robots that are able to simulate ever more refined social presences. These new alterities call for the development of new social and interactional routines appropriate to their respective particularities. New types of societal hybridization—as we shall see in greater detail below—inexorably trigger, dictate the practical implementation

[4] This is not to say that I adhere, as does Rosa (2009, 2013), for example, to the hypothesis that we are currently witnessing a general acceleration in the temporal culture of human societies (or that this, as it were, represents a feature of late modern societies).

[5] The notion of alterity is used here in a general sense that includes otherness as well as strangeness. In the literature, however, a distinction is sometimes made between, on the one hand, alterity in the sense either of a different but similar other (bearing what Wittgenstein called 'family resemblance') or of a comparable other (meaning an entity available for the creation of analogies but not of identities—as illustrated by Thomas Nagel (1974) in his 'bat' gedankenexperiment) and, on the other, alterity in the sense of alienity, as embodied in the inconceivable and incommensurable stranger (Turk 1990). I am also aware that the emphasis on difference inherent to the concept of alterity brings with it the risk of itself causing the *othering* of the other in the first place.

of, and, in the not-too-distant future, will certainly be embodied in, new modes and cultures of social interaction in our daily life.

In the title of this paper, I speak of new *cultures* of social interaction. I do so because the new ways of dealing with the upcoming alterities will touch on a wide range of aspects of social and cultural life, and will result in new practices. At some point, these practices will then be conventionalized, crystallized in new routines encompassing core assumptions of an implicit, tacit kind—which will then no longer have to be made explicit. From then on, the new cultures will embrace—as does culture in general—temporally and syntactically organized embodied practices, semantic associations, and attributions of meaning, and will be represented in all kinds of material objectivations.[6] Hence, culture is here conceived of not as a homogeneous entity or a container comprehending either meanings or people (depending on one's theoretical preference), but rather as an internally coherent collection of communicatory processes and resources that enable, constitute, and organize the sociality and socialization of a species that is endowed with the ability to depart from nature.[7] Since they inevitably create experiences of difference in relation to an *alter* whose consciousness is principally inaccessible (Schütz 1962; Nagel 1974), these processes of, and resources for, communication are fundamental to the constitution of reflexivity—which, in the end, forms the most elementary constituent of culture. In addition, by conceiving culture from its margins, from liminal socialities, from hybridities and in-betweens (or, as it were, through border-thinking), the present paper contributes to the reflexive project of getting us to enlighten ourselves about—and thus relativize—its basic, often tacit, assumptions.[8] If this reversal of perspectives entails an othering of the unfamiliar (Fabian 1983), it equally implies an othering of the self, since it mirrors basic dimensions of our self-conceptions.

As I will argue, the societal generalization of close contacts with hybrid and liminal modes of social existence also necessitates a revision of conceptions of humanity and of the person. Conceptions deriving from the Enlightenment have been particularly influential in causing us to restrict our view too narrowly to cognitive-mnemonic, anthropic, and putatively rational but—as will be shown here—highly culture-bound aspects of the social person (Welsch 2011, 2012a, 2012b; Welsch, Singer and Wunder 2011). That said, concepts of the person have proved variable—not only culturally but also historically—ever since the relevant lexeme ('persona') emerged in Antiquity (Mauss 1938/1985; Joas 2011).

Old and New Forms of Alterity

Human societies have been dealing with alterities of all kinds and degrees for a very long time. Examples include interaction with ancestors, spirits, and gods, the

[6] For a more detailed account of the concept of culture used here, see Girke and Meyer 2011.

[7] See Hansen 1995, who defines culture as 'the sum of difference'.

[8] On cultural differences and hybridization in general, see Santiago 2001, Mignolo 2000, Young 1995, Bhabha 1994.

breeding of animals, and child-rearing.[9] Fundamental changes can also be documented in the cultures of interaction with each of these alterities—for example in regard to new transcendental practices,[10] intensified relationships with pets[11] in a society marked by isolation and loneliness and in therapeutic environments,[12] and new cultures of child-rearing in low-birth-rate societies.[13] These changes certainly merit more detailed investigation but are not addressed in this paper.

Instead, I shall here consider three processes of social change, with a view to identifying some of the foreseeable features and emergent routines that will characterize future cultures of social interaction—and some of the problems that may be associated with them:

1. The *normalization* of socio-cultural difference brought about by globalization and the resultant increase in the number and density of interactions occurring under conditions of socio-cultural alterity;
2. Robotization and the proliferation in interactions occurring under conditions of socio-technical difference;
3. Societal ageing (and resultant 'alzheimerization') and the increase in the number of interactions characterized by socio-cognitive difference.

Besides challenging global society in numerous practical and ethical ways, each of these processes calls into question some of the basic theoretical assumptions of the social sciences. This comes about because the normalization of social relations with socio-cultural, socio-technical, and socio-cognitive strangers creates a need for a new discussion about the nature of the social world and what is conventionally called—and has recently increasingly been debated under the label of—'social ontology'.[14] Are cultural strangers, robots, virtual agents, and people with dementia part of the social world? Are they part of society? Can we speak of an interaction with them in any strong sense? In other words, are we able to establish

[9] See e.g. Singleton 2009, Meyer 2010, Trevarthen 1998, Otterstedt and Rosenberger 2009, Sanders 2003, Pedersen and Fields 2009. On cognitively impaired persons, see Coulter 1973 (esp. 152 ff.), Pollner and McDonald-Wikler 1985.

[10] Prayer, for example, or transcendental experiences in meditation.

[11] As substitutes for friends or partners, for example.

[12] As counterparts that will provide emotional stimulation or have a calming or consoling effect.

[13] These include treating children as already fully competent counterparts and legal persons who no longer require any kind of child-rearing framework.

[14] Social ontologies are debated from a number of viewpoints. They may be considered in relation to the level at which the term 'society' may be applied to an entity. In other words: is the social constituted, as claimed in methodological individualism, by the aggregation of its constituent elements, i.e. individuals; or is it, as assumed by methodological collectivism, an emergent reality consisting of more than the sum of its parts. They may also be considered in relation to the fringes and boundaries of the social world and which entities are to be included in the social. The post-Enlightenment assumption that society consists (only) of humans has recently been challenged. There have been calls for objects and artefacts to be included; discussions have taken shape around the subject of comatose and brain-dead patients; and demands have been made for human rights to be extended to include members of the great-ape family. See Gittler 1951 for one of the earliest occurrences of the term 'social ontology'; and for a good overview of recent debates in the philosophical domain, see Schmid 2009.

an 'I and Thou' relationship, a 'We', a real mutuality with them? Or should we instead speak—in an instrumental sense—of mere contact and communication with them, of care-taking in the case of the elderly and of handling and operation in the case of technical devices?[15]

In sum, this paper focuses on one particular aspect of these forthcoming social changes, namely how our practices of social interaction—in relation to each of the processes individually, but also to their interplay—may change in the medium term as a result of the new alterities. It also asks what impact the normalization of interactions and relationships with new alterities will have on sociological concepts and models.

From a methodological point of view, two general approaches to the study of interactional processes under conditions of alterity may be distinguished.[16] The first consists in eliciting from actors whether or not they attribute properties of interactivity to their contact with the stranger in question. The second focuses on the observation of naturally occurring processes of interaction and analyses them in regard to visible modes of interactivity. The two approaches differ in terms of their analytical value. Because it focuses on the experiences and subjective perspectives of the actors, the first approach does not generate independent assessments of the extent to which interaction happens and whether the different types of *alter* should be considered part of the social world in a general sense. In this approach, the risk that projection by the actors will be treated as fact is considerable. Third-party validation of the actors' interpretations therefore seems a sensible step here (Lindemann 2005).

Although the second approach may be able to reconstruct whether interaction—in the sense of a mutual relatedness—has occurred, it has no methodological access to the sometimes surprising, and perspective-broadening, viewpoints of the actors. It must therefore be particularly careful to reflect on its descriptive and analytical categories, in order to avoid merely sustaining pre-existing criteria through the data. However, given that a third party—namely the researcher—assesses interactivity at the outset, analysis here extends beyond the subjective perceptions (and potential projections) of the actors. In this approach, interactivity is evaluated through the identification of sequentially produced conversational turns, and speech and action moves, in recordings of naturally occurring interaction (Schegloff 1992).

In this paper, I apply the second approach and analyse existing evidence-based studies on interactions with the three selected alterities. This empirical approach precludes any a priori assumptions about the existence of interactivity with the three liminal social beings[17] and any possibility of turning out simplified 'thin descriptions' of interactions between humans and marginal social entities that merely shift the language of description instead of providing thorough analyses.[18]

[15] On the question of whether we can talk of interacting with things, see Owens 2007, Dant 2004, Rossiter 2007.

[16] On the same distinction in relation to interaction with technological devices, see Rammert and Schulz-Schaeffer 2002, esp. 23 ff.

[17] As does Luckmann (1970) with his theorem of 'universal projection'.

[18] As does actor-network theory with its 'symmetrical anthropology' (Callon 1986; Latour 1991).

I will begin by outlining the three processes in question in terms of general trends drawn partly from statistical evidence and partly from qualitative and quantitative projections. This will put us in a position to assess the extent to which we will be confronted with each of the alterities.

Globalization: The Generalization of Socio-cultural Difference

As I have mentioned, contact with cultural strangers has been a *conditio humana* since the emergence of human communities. However, as we shall see, a qualitative change is about to occur that will shift the perception of interactions with cultural strangers from that of a puzzling and potentially disconcerting exception to that of a standard and routinized everyday experience.

Today, our everyday experiences teach us that globalization has reached a level where it affects our own personal and social contacts. We may ourselves have a migratory background,[19] or have direct relatives who do; but even if not, we will encounter and deal with persons of different socio-cultural background in numerous areas of professional and personal life.[20] Thus globalization encompasses not only economic, political, and institutional integration but also an increasing density of social interaction under conditions of socio-cultural difference.[21]

The strongest indicators of interactional globalization are probably international migratory flows and tourism—corroborated by the current number and length of international telephone-calls, which are probably a result of them. These indicators tell us, for example, that tourism has more than doubled since 1995.[22] In addition,

[19] In 2009, this was true of 15.7 million people in Germany—nearly 20% of the population; in 2030 the figure will be between 40% and 45%.

[20] Many of us have lived in foreign countries or work in international corporations or organizations where personal contact with people from abroad is part of the job. Even where none of this applies, we will probably have got to know people from different socio-cultural backgrounds through tourism, which gives us easy access to the remotest areas of the world. In addition, media technologies have made it easy for us to interact and communicate with people in distant countries using networks such as Facebook (1.5 billion members from all over the world, of whom 1 billion are active on a monthly basis and 684 million on a daily basis), chat rooms and virtual worlds such as (to name but two) Second Life (28 million members, of whom 1.5 million are regular users) and World of Warcraft (10 million paid-up members). Telephone statistics also reflect this intensification in contact. International phone-subscriptions more than doubled between 2005 and 2011 and international voice-traffic in 2002 was almost double that in 1997, prior to the shift to Internet technology. After this shift, between 1999 and 2007, the worldwide volume of traffic in bits per person per second underwent a 150-fold growth. See http://www.econstats.com, accessed 2 July 2013.

[21] There are a number of indicators of globalization that include this kind of personal and interactional globalization. The KOF index, compiled by the Swiss Federal Institute of Technology (ETH), records country-specific figures for international phone-traffic, international money-transfers, tourism, numbers of foreigners in the population, and numbers of letters sent abroad (Dreher, Gaston and Martens 2008) In the original 1970 index, Germany scored 32 points; by 2004 this figure had grown to 58. In 2012, it was ranked 22nd; Belgium; Ireland, and the Netherlands occupied the first three positions, with Greece and Italy ranking directly behind Germany.

[22] From 535 million airport arrivals to 1.1 billion today (http://www.econstats.com, accessed 2 July 2013).

international student-migration has quadrupled since 1975[23] and the production of internationally co-authored scientific papers has increased six-fold since 1985.[24]

In Germany, there has been a new growth in labour immigration since 2010 and the migratory balance is now positive again. Whereas the percentage of foreign nationals in Germany was 8.5 (7 million) in 2011, estimates predict 17 per cent (13 million) for 2030 in a medium-term migratory scenario. 'The population in Germany has become more heterogeneous, and this trend will continue,' says the German government in its 2011 Demography Report (Bundesministerium des Innern 2011: 12). Whereas, for example, there are currently only 4 million Muslims living in Germany, by 2030 the figure will be about 5.5 million, amongst an overall population that will have shrunk from today's 82 million to only 78 million.

There is no doubt that all these trends are resulting in the growth, intensification, and generalization of social interactions under conditions of socio-cultural difference. Social contact, communication, and interaction with unknown or foreign persons are constantly increasing. At the same time, there is no automatic decrease in socio-cultural difference, since we are permanently having to deal with fresh cohorts of newly arrived strangers of all kinds.

Despite these ever-new inputs, it is likely that the puzzling and disconcerting quality of the socio-cultural difference experienced on encountering strangers will wane. When socio-cultural difference is generalized and becomes a ubiquitous quality of interactional cohabitation in globalized world society, one may expect a growth in general 'ambiguity tolerance'[25]—though there will no doubt continue to be aversive reactions to, and hostile acts against, people of obviously different socio-cultural backgrounds. Sociologist Rudolph Stichweh assumes that when cultural difference is considered universal in everyday life, we will act under the presupposition of socio-cultural similarity only in interactions within our very close social network (family, friends), while in professional life, in organizations of any kind, and at public events, we will generally assume we are interacting with socio-cultural strangers with whom we do not share even the most basic assumptions (Stichweh 2004: 111–23). According to Stichweh, two conflicting assertions are possible: first, that in a globalized society *alter* is commonly a stranger; and second, that in fact nobody is a real stranger any more. The puzzling and estranging function of socio-cultural difference is replaced by *indifference*, consisting either in consciously eliding the alterity of the other or in adopting a stance of what Stichweh calls 'minimal sympathy'—in other words minimal trust—towards them.

But Stichweh does not provide answers to the question of what this means in concrete terms. What form would minimally sympathetic interaction with culturally different persons take? How can intersubjectivity be achieved across cultural difference? Before attempting to answer these questions, I will address current trends in the area of artificial intelligence and Alzheimer's disease. This will put us in a position to judge all three alterities equally in regard to their relevance for foreseeable interactional practices.

[23] From 800,000 to over 3 million today (Chien 2010).

[24] From 30,000 to 170,000 (OECD 2010: 126–7).

[25] See the chapters by Else Frenkel-Brunswik in Adorno et al. 1950.

Artificial Intelligence: The Generalization of Socio-technical Difference

Predictions about the growth in interaction with artificially intelligent technical devices are much more difficult to make than forecasts about globalization, because the dynamics and direction of technical innovation are harder to anticipate. Devices endowed with artificial intelligence today include robots and virtual agents—that is, machines and applications that are able to carry out specific, usually well-defined, tasks autonomously. Both may be designed with varying degrees of similitude to humans and varying degrees of interactional competence.

By the end of 2011, the world had a population of around 17 million (professional and domestic) service-robots and 1.2 million industrial robots. Estimates predict the sale of a further 5 million public robots (for information, advertising, and the like) and a further 11 million domestic robots (lawn mowers, vacuum cleaners, window-cleaning machines, and such like) by 2015 and another 11 million robots in entertainment and education by 2013. Global sales of around 5,000 robots are predicted in inpatient and domiciliary care over the next two years. Examples in this category include the 'FRIEND' and 'Care-o-bot' robot-assistants and the robot 'cuddling' seal named Emma.[26]

According to statistics from the International Federation of Robotics, the market for domestic service-robots will grow much more strongly than that for industrial and professional service-robots. These domestic service-robots will take many forms. One group will include highly task-specific machines such as small cleaning robots that will inhabit the homes of the future and clean them while the human residents are out. They will be interactive only in a very basic sense, being able, for example, to sense and avoid other moving entities. A second group will include telepresence systems that will allow humans to log in externally via the web and move around their own houses or other locations and interact with geographically distant persons. These robots will also need to be partly autonomous, so that they can cover distances and return to their bases independently. A third group will comprise universal service-robots that are able to carry out a variety of mechanical tasks flexibly and autonomously in a human-like way. They will need to display considerable interactional skills, recognizing faces and voices, understanding verbal orders, answering questions, and proactively delivering spoken reports, advice, and reminders. In addition, they will have the capacity to learn and to draw on specific memories relating to people, tasks, and places. These robots will also be increasingly used in industry. In the longer term, they will be connected to personal virtual agents created on computers (Brooks 2002; Dautenhahn 1997; Dryer 1999; Cassell and Tartaro 2007). The governments of Japan and South Korea are already preparing for a 'human–robot coexistence society', which they believe will emerge by 2030 (Weng, Chen and Sun 2009).

Scientific research has shown that people naturally tend to treat robots as they would humans and animals, and to ascribe corresponding attributes—such as names, genders, and personalities—to them. But the more the robots resemble human beings, the more readily they accept them and so developers try to build in functions that simulate human competences in more authentic, sophisticated ways.

[26] All figures from http://www.worldrobotics.org, accessed 19 July 2013.

On the other hand, this creates expectations in the human users which the robots are not always capable of meeting, and this then leads to a major loss of credibility. Although human qualities are sought-after, they are not all treated in the same manner. Proactivity in a human is viewed in a positive light; the same quality in a robot appears intrusive. This accords with the 'uncanny valley' hypothesis,[27] which posits that the human acceptance of robots does not increase linearly with their growing resemblance to humans but instead falls off sharply when they approach a human most closely in appearance. Mobile robots in particular tend to be viewed as uncanny, ghoulish, abnormal, reminiscent of zombies, corpses, and other 'creepy' things. Developers are therefore well advised to leave a recognizable gap in appearance between robot and human (Hashimoto et al. 2002).

In contrast to robots, virtual agents have no physical body and are not able to carry out physical tasks. They are entirely computer-generated and their purpose is to channel information and enable communication. Although no reliable numbers are available, a rapid growth in their application and usage is observable in the media, e-commerce, education, entertainment, and information. To quote a few examples: airport information is increasingly being provided by virtual agents, who are available 24 hours a day, 365 days a year—at JKF airport in New York City, for instance, hologram 'Ava' provides information to travellers about every aspect of the airport, their connecting flights, and so on; Microsoft's 'Clippy' provides advice to users of Word and other applications; and Apple's 'Siri' assists with web searches, scheduling, and diary management.[28]

The social presence generated by virtual agents—and much more so by robots—is already leading to certain behaviours in human users. These include a tendency to honour commitments involving them, to be polite in their presence, to be shy of undressing in front of them, and in some cases even to entertain affectionate feelings towards them. Virtual agents are reported to make web pages more interesting, entertaining, stimulating, and commercially successful for human users. For example: information delivered dialogically by agents with a human-looking appearance and a human-sounding voice is rated as more valuable than that given in text-form alone. On the other hand, where there is direct physical contact, many people prefer less human-like robots. Older people prefer robots without faces (S. Meyer 2011) and children rate human-looking robots as having more negative behavioural intentions than robots with other appearances (Oestreicher 2007;

[27] Mori 1970. Transl. in Macdorman and Minato 2005.

[28] Other applications include: navigation, e-learning, telephone help-lines, and online marketing. The numbers of assistants of this kind is growing rapidly as speech-recognition software, dialogue capabilities, and simulation of human gesture and facial expression are enhanced. Designs vary: some are made to look like humans, others like cartoon figures or animals. *Virtual Assistant Vendor Landscape 2011* estimates that 'by year-end 2013, at least 15 per cent of [the 1000 largest American companies in terms of revenue] will use a virtual assistant to serve up Web self-service content to enhance their [customer relations] offerings and service delivery'. This is expected to rise to 100% by the end of 2015 (http://www.gartner.com, http://chatbots.org, accessed 19 July 2013). Enhancement of virtual agents is under way in areas such as connection to social networks, to mobile phones, and to search engines/information centres; and also conversational capacity beyond task-specific dialogue, simulation and recognition of emotion, and 3D representation, in order to enhance their social presence. In the longer term, computer–brain interfaces will facilitate direct communication with these devices and with an augmented reality, of which Google Glass is an early and much-publicized example. See Pickering 2010, Pérez-Marín and Pascual-Nieto 2011.

Cesta et al. 2007; Woods, Dautenhahn and Schulz 2004). Interestingly, older people also prefer care robots to human carers.

It is clear from this that the robotization and automatization of our lifeworld, and the increasing contact with artificially intelligent devices that comes with these, will lead to the creation of new routines for interacting with robots and virtual agents—and thus also to a new culture of social interaction. Later on, I will try to identify some of these routines. Before that, however, I will outline a third general process of societal change: the relative growth in the numbers of people with dementia in society, and the resultant increase in contact and interaction with socio-cognitive strangers. This will complete the picture of future trends in societal hybridization and make it possible to go on and assess the relative impact of each of them.

Dementia: The Generalization of Socio-cognitive Difference

Demographic research labels the twenty-first century the 'century of ageing'. In Germany—as in most other countries—the average age of the population is on the rise and in 2050 it is likely that, for the first time in human history, there will be more people over 50 than under 15 in the world (Kocka 2008: 217). For current world society as a whole, estimates posit a population of 18 million dementia sufferers. This number is set to rise to 40 million by about 2025—70 per cent of whom will be living in developing countries (Innes 2009: 27).[29] In Germany today, 300,000 new cases of dementia are diagnosed every year. This means that, with demographic change, the number of patients is constantly rising. Since prevalence increases with age, rising life-expectancy adds around 40,000 cases a year. In 2030, 30 per cent of the German population will be older than 65. Around 20 per cent of them will at some point become affected by dementia (Deutscher Ethikrat 2012; Bundesministerium des Innern 2011).

Today, there are around 1.4 million dementia sufferers living in Germany; in 2060 there will be around 4 million, in a population that will have shrunk to only 70 to 72 million. This trend means that in only 20 years, a minimum of every other person will be confronted with a case of dementia in their immediate family—that is, if they are not also dealing with sufferers in a professional capacity (Deutscher Ethikrat 2012: 34–5; Deutsche Alzheimergesellschaft 2012). Similar trends are identifiable for other European countries, the USA, Australia, and Japan.

So far, there is no medical cure for dementia.[30] As a result, the disease will become an integral part of these societies in the medium term. Because of its

[29] On Africa in particular, see Utvardy and Cattell 1992, and for Micronesia Keck 2010.

[30] Dementia is an umbrella-term for symptoms that can be triggered by a number of causes. Alzheimer's disease is the most common cause (67%), followed by vascular and circulatory problems (16%). There are also several secondary forms of dementia that have organic, infectious, toxic, metabolic, or traumatic causes. Numbering among these are dementias caused by alcoholism and Parkinson's disease. Life expectancy after diagnosis varies widely; in the case of Alzheimer-related dementia it is around 8 years, and in the case of vascular dementia 4 years. Only secondary dementia is treatable—and indeed potentially reversible. Anti-dementive medication can so far only be used for the improvement of individual symptoms. See Deutscher Ethikrat 2012: 15–16.

specific symptoms, the disease challenges our social life, and the forms of social interaction we are used to, at the very roots. Nevertheless, given their sheer numbers, some form of straightforward, normalized contact with demented persons will inevitably emerge. Although societies are in general addressing the task of developing routines for interacting with groups—like strangers and robots—who are ascribed what one might call extraordinary social status, most have not yet worked out ways of interacting with the demented. The options for prevention remain unclear, continuous cognitive and motor stimulation currently being the most promising. The interactional feedback which patients receive from their social and clinical environment also plays an important therapeutic role.

The different types of dementia have similar symptomatologies: loss of mnemonic and cognitive abilities; restricted spatial and temporal orientation; constraints on everyday activities; and behavioural changes such as social withdrawal, mistrust, apathy or disinhibition, and agitation. Typically, memory loss affects the present first and early childhood last (Piolino et al. 2003; Maxim and Bryan 2006; Kitwood 1997).

Most of the international literature assumes three successive phases in the progression of the disease.[31] The early phase is characterized by a decrease in short-term memory, difficulty in learning new things, a tendency to get lost, a reduced temporal and spatial sense, and a decline in autonomy in everyday life. In this phase, the disease is often denied or masked by the use of formulaic responses, but anxiety and social withdrawal are common. In the middle phase, patients become even more forgetful in terms of short-term memory and become disoriented even in familiar surroundings. Circadian disturbance and inability to cope become a more frequent occurrence. The third phase is marked by severe cognitive and mental loss manifesting itself in non-temporary misconceptions about people and situations and in various physical disorders.

Obviously, the symptomatology of these three phases has consequences in terms of contact and interaction with dementia sufferers. Verbal expression and comprehension together with sufficient short-term memory to cover the immediate interactional history are necessary conditions for social interaction. However, it would be precipitate to regard the fact that coherent conversation had become impossible with a dementia sufferer as sufficient evidence for concluding that they were incapable of social interaction in general. And yet this is what is done in medical diagnostics when sufferers have their cognitive—and, implicitly, their interactional—abilities assessed.[32]

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[31] See e.g. Förstl, Kurz and Hartmann 2011. Reisberg et al. 1982 distinguish seven stages.

[32] Folstein, Folstein and McHugh 1975. Sociologically, these kinds of tests (which are used to distinguish the three phases of the disease previously mentioned) are open to criticism, because they disregard the special nature of interactional and social competence in dementia and tacitly incorporate the tester's sense of what is normal as a basis for scientific judgement. For example: the time testers allow for an answer to be given is usually too short for the testees, but the testers make a tacit judgement about the length of these pauses (based on their everyday experience) and then take this as an indicator of cognitive competence (Ramanathan 1997; Sabaut 1991, 1999; Mace and Rabins 1981: 29; Hamilton 1994: 22). The tests thus manifest what amounts to a deficit bias, in that they are designed specifically to reveal cognitive weakness as measured against an implicit standard of what constitutes a 'normal wide-awake adult' (Schütz and Luckmann 1973: 262). This is like repeatedly testing children for adultness and every time highlighting the inevitable deficiencies. Implicit 'everyday' interactional criteria are not the only factors to influence the view of dementia; social science and humanities theories—such

To sum up: societal changes induced by ageing, and the resultant increase in contact with cognitively impaired persons, will inevitably lead to the creation of new routines for interaction with dementia sufferers and to a new culture of social interaction. Again, I will later try to identify some of these routines.

Emerging Cultures of Social Interaction

Earlier on, I showed that there are societal changes on the horizon which will render our societies more hybrid and lead to a normalization of encounters with counterparts that were previously rarely met with or atypical. In regard to these developments, one is tempted to ask a number of sociologically oriented questions, including: How will basic social assumptions and interactional practices change with the generalization and normalization of these kinds of hybrid relations? What concepts might we use to describe interactions with, between, and among these entities—and are our current concepts adequate to this task? Before I embark on an analysis, however, a number of clarificatory remarks about the concept of interaction and interactivity as used here would seem to be indicated.

In the theoretical literature, the definitions of interaction and interactivity vary widely according to the discipline using these terms. Researchers in Information Technology and Artificial Intelligence, for example, use a very broad concept of interaction, in which every form of mutual reaction is classed as interaction—bringing it very much closer in meaning to *reactivity*. By contrast, sociologists have advanced a more exacting definition that does justice to the fact that humans are reflexive beings who construct their own conceptions of *alter* and incorporate expectations, projections, and anticipations of *alter*'s activities and viewpoints into their own motivation and action-planning. The particularity of the *conditio humana* consists precisely in the fact that, as well as being able to anticipate the actions (or expectations) of *alter*, we assume that they, equally, anticipate our actions (or expectations), and this ultimately generates 'expectations of expectations' and 'double contingency'—in other words, a mutual dependence of *ego*'s and *alter*'s next action on their respective anticipation of the action of their counterpart (Luhmann 1995: 103–36; Parsons, Bales and Shils 1953: 35–6).

However, to expect double contingency in social interactions with strangers and liminal counterparts makes little sense. If we consider the case of interaction with infants, for example, we can readily see that the concept is too exacting. It therefore appears sensible to further differentiate the concept of interaction into components, or dimensions, which can be considered empirically one by one. This will provide a picture of the extent to which we are able to interact—in the sense of there being a production of mutuality—with each of the three alterities. Drawing on existing sociological theories, I will distinguish four dimensions of interactivity.

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as normative assumptions about consciousness and its communicative disclosure—also have an impact. Many sociological theories and methodologies—from those of Weber through those of Parsons and Schütz to those of Luhmann and the proponents of Conversation Analysis—presuppose an ideal, fully competent, actor (Cerulo 2009).

1. The most exacting dimension is *topical continuation*. This refers to sequentially and incrementally organized communicative acts by which *alter* and *ego* demonstrate that they are semantically and topically related and mutually referential. A particularly strong emphasis is placed on this dimension in Niklas Luhmann's theory of interaction (Luhmann 1995). According to Luhmann, what (and who) is treated as part of the interaction, or not, is decided through sequentially meaningful communication and is manifested in the course of the exchange between the persons present (p. 411).
2. The second dimension—*shared knowledge*—consists in the presupposition that the lifeworld as I experience it is shared by my co-interactant and that our perspectives are reciprocal. In order to interact successfully—in other words for the interaction to run smoothly and for us to avoid having constantly to explicate tacit assumptions—we have to presuppose that our counterpart brings with them similar background assumptions as we do about the interactional situation and its relevance and meaning. In addition, we have to be able to activate specific knowledge about our co-participants and situate the interaction in the here and now. These aspects are highlighted both in phenomenological sociology and in ethnomethodology, as developed respectively by Alfred Schütz and Harold Garfinkel (Schütz 1962; Schütz and Luckmann 1973; Garfinkel 1967). It is a characteristic feature of interaction (termed 'face-to-face situation' and 'We-relationship' by Schütz) that *ego* and *alter* are in 'temporal and spatial immediacy' to one another and thus experience each other simultaneously (Schütz 1967: 178.). Included in this is the offering, by each to the other, of a 'maximum of symptoms' that both are able to observe (ibid.). Because '*alter*'s body is present to me as a field of expression for my subjective experiences', I achieve access to *alter*'s motivations for action and interpretations of the situation (p. 163).
3. The third dimension is the ability of the co-participants to *procedurally and formally configure* an interactional situation. This includes the turn-taking system, the utterance of feedback signals and continuers, and the production of (appropriate) second actions after specific first actions (answers to questions, for example, or greetings in response to greetings). This dimension has been emphasized particularly strongly in Conversation Analysis. According to this approach, intersubjectivity is procedurally achieved through the sequential and internally ordered progression of interactional acts (Sacks, Schegloff and Jefferson 1974; Schegloff 2007: 1–3). From this perspective, the organization of intersubjectivity results from the formal, sequential character of turn-taking (Schegloff 2007: 252, 264). The specific practical devices used to secure understanding in an interaction are: *recipient design*, through which an utterance is, from the outset, formulated in such a way as to be understandable by its designated individual addressee; and *repair*, which is brought into play when a misunderstanding or error has occurred and which temporally suspends the ongoing interaction. Sequentiality, in combination with topical continuity, thus provides the

means for procedurally organizing social interaction, securing understanding, and constantly checking and confirming communicative success, or making any necessary revisions to achieve it (Bergmann 1988: 39–46). Without sequentiality—this is the basic assumption of Conversation Analysis—interaction is impossible (Heritage 2008).

4. The fourth and final dimension consists in the ability to establish interactional co-presence—in other words a *basal bodily responsivity* on the part of the interactants. Mutual awareness and monitoring, addressing, and bodily coordination are important constituents of successful social interaction. This particular quality of interaction has been highlighted by both Erving Goffman and—even more strongly—by George H. Mead. In Mead's view, individuals do not enter into contact with one another; rather the individual is shaped, from the start, by participation in social situations. This comes about because they have absorbed the meaning of social acts through the repeated experience of social situations; and they have thus internalized meaning as an expectation of behaviour. Participants in social situations achieve identical emotional states through bodily, gestural, or auditory utterances. Those who produce an utterance bodily anticipate the responses of their interlocutors and thus adopt ('take') their role (Mead 1910). In this way, 'practical intersubjectivity' (Joas 1985) is produced. The ongoing mutual adjustment occurs 'because the individuals to whose conduct our own answers are themselves constantly varying their conduct as our responses become evident. Thus our adjustments to their changing reactions take place by a process of analysis of our own responses to their stimulations. …. We are conscious of our attitudes because they are responsible for the changes in the conduct of other individuals' (Mead 1910: 403). A great portion of social interaction happens in a bodily responsive manner beneath the threshold of consciousness—a process Mead terms 'innervation' (Mead 1974: 24, 104). Goffman also views interaction as something that occurs when participants in a social situation are in bodily co-presence. In such conditions, they are 'admirably placed to share a joint focus of attention, perceive that they do so, and perceive this perceiving' (Goffman 1983: 3). This gives them a feeling of joint activity, which they privilege above everything else in their surroundings (Goffman 1959: 13–14; 1963: 13–22, 89).

The presence and operationality of these four dimensions are basic to the social interactions that we conduct in everyday life. However, in contact with socio-cultural, socio-technical, or socio-cognitive strangers—and other types of *alter*—any one of them may become precarious or problematic. Thus, in the course of the successful or unsuccessful operation of these dimensions, the feasibility and likelihood of interaction with the new alterities in question is revealed, and their partaking in the social world becomes empirically observable. Through the analysis of natural occurrences of interaction as represented in the literature, each of the three forms of alterity becomes delineable and specifiable in its individual particularity.

Taking this as my starting-point, I will now analyse each of the four dimensions in relation to each of the three selected alterities, drawing on empirical studies that explore interactional processes with those alterities. I will begin with the socio-cultural alterity triggered by globalization. Examination of this will put us in a position to contrast this older and more familiar experience of alterity with the newer and more unfamiliar forms.

Socio-Cultural Alterity

Topical Continuation

In the case of encounter between socio-cultural strangers, the first and most exacting interactional dimension—topical continuity—primarily requires of the co-interactants that they use a shared set of semiotic resources for communication. Only if the two co-interactants share, at least rudimentarily, a language or gestural repertoire (as in sign languages) will they be able to relate topically to one another in a meaningful way. And indeed, when people from a number of different parts of the world meet up, as they do in virtual online worlds, their initial (and, in terms of topical continuity, elementary) interactional activities relate to the identification of a shared language (Schroeder 2011, esp. 188–9).

However, even where there is a shared language, topical continuity can be difficult, as is shown by the following, typical, example of an interaction occurring under conditions of cultural difference. The interactants are a Somali mother (M) and a British paediatrician (P).

Example 1[33]

```
2  P so what sort of questions have you got in your mind for me
     today
3    (.) what do you want me to do
4    (1.0)
5  M mm no: she say
6  P today
7  M eh: the lady [receptionist] she say if you want to contacting
     doctor eh: you want eh: talk him
8  P yeah
9  M I say yes I am happy with e- with you
10 P right right ok
11 M because (.) definitely when I am coming with you
12   when I go back I will go back happy
13 P ((laughs)) I hope so
14 M because I will look to see you and your doctor K (.)
15   I like it
16 P good
17 M cos when when I come in will come in the you know ((tut))
18   when I go back my home I'm happy
19 P right
20 M ((laughs))
21 M so you want me to- (.) check her over
```

[33] Roberts 2007: 250–1.

In this example, topical continuity is precarious because the two interactants appear to have different concepts of how a medical interaction should be conducted and how the subject of medical examination should be approached. Whereas the British paediatrician expects a concrete reason for the woman's visit (her baby's specific symptoms, for example), the Somali mother interprets his questions in a different sense: she explains to the (male) paediatrician why she has chosen *him* rather than any other paediatrician.

There may be underlying, cultural reasons for her interpretation. As cross-cultural studies of medical interaction have demonstrated, communicative expectations in regard to doctors are culturally variable. Whereas in most Western cultures patients are expected to name their symptoms and discuss them with the physician, in many non-Western cultures patients expect their doctors to make a diagnosis based on physical examination, to give clear advice, and to institute measures for recovery (Angelelli 2004). In our example, the divergence in expectations in regard to topical continuity does not actually lead to communicative breakdown; instead, the interaction continues because the doctor ignores the divergent interpretations and eventually answers his own question (l. 21). This indicates that, in interactions under the condition of alterity, it is only when disturbances are crucially damaging to the ongoing exchange that they have to be solved. This is usually done by further interactional measures such as repair, in which the ongoing interaction is temporally suspended to allow for the solution of possible problems. Once the repair is successfully completed, interaction is resumed.[34] Where direct intercultural interactions become regular and continuous, these idiosyncratic in situ solutions give rise to 'contact languages' and 'contact cultures'. These eventually form the basis of pidgin and creole languages and cultures (Brandstetter et al. 2004; Piller 2002, esp. 244).

Problems of topical continuation also occur in very routinized interactional episodes such as so-called 'adjacency pairs' (compliments and responses to them, for example, or greetings) and in the introduction and preparation of critique. These are highly enculturated practices in which meaning is not coded in lexico-semantics, with the result that misplaced attributions can occur. Examples of attributions include the interpretation of German communicative behaviour as cold by Australian co-workers (Grieve 2010) and the interpretation of the conduct of Spanish students as narcissistic and whiny by British fellow students (Lorenzo-Dus 2001; le Pair 1996). In addition, deep-rooted differences in regard to basic understandings of the world and the agentive person can influence, disturb, or interrupt topical continuation and create misunderstandings (for example regarding the possibility of spiritual journeys; Sharifian 2010, esp. 3370).

To sum up: interactions, though fragile and culturally bound, have the ability to procedurally fix problems of understanding and produce intersubjectivity as they go along—almost in a self-organized manner. However, this will only happen as long as more basic requirements of interaction—such as joint linguistic or other (e.g. gestural) communicative skills—are present.

[34] Schegloff, Jefferson and Sacks 1977. For a particularly good example, see Firth 1996: 244.

Shared Knowledge

In what has preceded, I pointed out that the meanings sedimented in language and interactional practice often vary culturally. This is also true of other areas of cultural expressiveness: symbols, objects, and practices have different meanings in different cultural contexts—to the extent that some scientists have claimed that an individual's modes of thought are dependent on their culture and language-systems (the Sapir-Whorf hypothesis; see Lucy 1992, 1997; Gumperz and Levinson 1996). Anthropologists have documented fundamental cultural differences not only in basic ontological, cosmological, epistemological, ethical, and aesthetic assumptions about all kinds of phenomena, but also in perception and cognition. What emerges from these studies is that cultural differences can affect the core perceptions and conceptualizations which humans have of the world.[35] These in turn obviously have a bearing on how liminal social beings—cultural strangers, the demented elderly, and robots, but also children, animals, and spirits—are viewed in terms of their status as interactional counterparts and whether they are included in, or excluded from, the social world.[36]

Particularly well-researched examples in this area include colour perception and spatial orientation.[37] Some languages, for example, have no concepts for relative spatial orientation such as 'in front', 'behind', 'left', 'right' (egocentric spatial orientation). Instead, they use only absolute concepts such as 'north', 'south', 'east', 'west' (Levinson 1996, 2003) or 'uphill', 'downhill', 'seaward', 'landward' (Brown 2008) (geocentric orientation). Here are two examples of geocentric statements:

Example 2[38]

```
1 Look out for that big ant just north of your foot.
2 (There is) a crumb on your seaward cheek.
```

One can imagine that this kind of statement sometimes leads to interactional troubles. In addition, conceptualizations of time (which are often derived from spatial concepts) may also differ fundamentally. This is because there are few, if any, language universals (Evans and Levinson 2009). Homo sapiens appears to be the only species with a communication system that is fundamentally variable (in other words, cultural) at all levels.

But shared knowledge is relevant not only for basic ontological conceptions but also for interactional practices—where politeness is concerned, for example, or appropriateness of language, or of gesture, in specific social situations (generic knowledge). Empirical studies show that gestures do not simply vary interculturally in their meaning; they may acquire opposing meanings (Meyer 2013). Again, opinions differ as to whether, when, where, and how certain types of talk should be

[35] See e.g. Reichel-Dolmatoff 1971; Viveiros de Castro 2009; Keifenheim 1999; Carrithers, Collins and Lukes 1985.

[36] Of the many sources, see e.g. Kaplan 2004; Barker 1990; Nadasdy 2007; Knight 2005; Kirksey and Helmreich 2010; Rabinow 1992; Meyer 2010; Proschan 1997; Stewart, Barnard and Omura 2002; Gottlieb 2008; Prout 2004; Wagner 1981; Jackson 1998; Povinelli 1995.

[37] On colour terms, see Berlin and Kay 1969, Lucy 1997, Saunders 2000, Levinson 2000.

[38] Deutscher 2010: 122.

used (Hymes 1962). Only when there is a shared stock of semantic knowledge are basic interactional activities possible. One process in which this is highlighted is assistance with word-searching (Piller 2002, esp. 236). Further illustrations are to be found in minor everyday rituals such as collective toast-raising and drinking. The kinds of toasts used in Georgia, for example, are reported by Kotthoff to be extremely difficult for strangers to adjust to because they praise 'good Georgianness' and 'true virility' as central values (2007, esp. 185–92). The toasts are highly emotional and, in addition, have religious connotations. Another example of the importance of shared knowledge in such contexts is provided by the following reconstruction of a conversation between an American student (Mary) and a visiting Finnish student (Kirsti).

Example 3[39]

```
1 Mary:   Hi Kirsti!!! How are you?
2 Kirsti: Thank you, good.
3 Mary:   Are you enjoying your stay?
4 Kirsti: Yes, very much.
5 Mary:   It's a beautiful day outside isn't it?
6 Kirsti: Yes.
7 They talk for a while longer, then say 'Good-bye'.
```

Mary reported afterwards that Kirsti seemed uninvolved and uninterested and that as a result she (Mary) had avoided further meetings. This in turn gave Kirsti the impression—in line with a clichéd view Fins commonly have of Americans— that Mary was superficial.

Sometimes, however, interactions with socio-cultural strangers can appear strangely familiar in that they evoke well-established connotations—but of a negative kind. One study, for example, showed that Japanese people often perceive the interactional style of strangers as similar to that of high-status towards low-status Japanese. As a result, they have the constant tacit impression that their own social status is being violated and that they are being degraded. This in turn causes them to avoid these kinds of encounters (Kowner 2002). This may be one of the motivations for Japanese government decisions to restrict immigration and to work towards replacing human labour with robots and virtual agents.

In addition to differences such as these in regard to communicative conventions (that is, socio-culturally typical forms of interaction), there may be differences relating to the interactional relevance of knowledge about personal histories. In some cases, culturally conventionalized expectations regarding demonstration of personal familiarity with the co-interactant can differ to the extent that personal hurt or offence is caused to the counterpart (Bailey 2000, esp. 97).

In many cases, however, interactions occurring under the condition of socio-cultural difference are shaped right from the start by the co-participants' knowledge that their own expectations may remain unfulfilled (Markaki and Mondada 2012; Asmuß 2003; Nishizaka 1999). This undoubtedly contributes to this kind of interaction being conducted with a greater 'tolerance for ambiguities'. However, even this more tolerant stance cannot preclude the occasional

[39] Carbaugh 2005: 39.

expression of morally charged judgements in the form of tacit sympathy or antipathy.

As we have seen, in intercultural interactions considerable gaps can occur in relation to what individuals are accustomed to assume is common ground. But the emergence of the sort of reduced but universal common ground that would be needed if intercultural interactions were to become standard is currently observable in the moves towards forms of political correctness that de-thematize difference. An example is the way in which people in many work-places now wish each other 'Season's Greetings' instead of 'Merry Christmas' at the year-end holiday.

To sum up: in a society in which interaction is based on the fundamental assumption of alterity, topical continuity can generally be maintained because sequential procedures are flexible enough to self-correct and self-sustain. However, stocks of knowledge can collide or be mutually exclusive (as in the case of spatial orientation, where no independent third form is possible). That said, in the course of repeated interaction, stocks of knowledge become more and more inclusive, flexible, and—eventually—cosmopolitical (in other words sensitive to, and competent in regard to, socio-cultural alterity).

Formal-Procedural Operationality

The formal-procedural dimension encompasses the ways in which co-interactants signal to one another that they are listening to, and monitoring, one another. How does this work under conditions of cultural difference? What interactional procedures do co-interactants use to indicate that they consider the activity in which they are engaged to be of a particular kind—a conversation, say, rather than a lecture, a flirtatious exchange, a dispute, a work-related exchange, and so on? One important requirement for interaction is that not all participants speak simultaneously. How, then, is turn-taking organized in such a way that all have a chance to speak but do not do so simultaneously, thus ensuring understanding is procedurally possible? How are conversations organized in way that obviates lengthy, unpleasant pauses and the risk of the conversation's falling apart as a joint activity?

Whereas the topical, semantic, and knowledge-based differences that exist between distinct cultural settings are easy to identify, the formal-procedural dimension often operates tacitly and unthinkingly, with the result that differences are not easily recognized as being cultural. Such differences in the formal organization of intersubjectivity do, however, also exist—and this is not surprising. For one thing, the attention and listening that occurs in the course of an interaction can be displayed by different semiotic means. In Western societies, the means commonly used for these purposes is gaze. In other societies, however, looking one's interlocutor repeatedly or continuously in the eye during a conversation is perceived as confrontational or highly intimate (C. Meyer 2011). In these cases, gaze and head gestures are sometimes eschewed and replaced by auditory signals, some of which take the form of long confirmatory repetitions of what has been said. The following exchange recorded among the Tzeltal Maya is an example of a conversation in a community in which gaze is avoided in interaction and is replaced by vocal repetition.

Example 4[40]

```
01 A I'd just come back from fetching those greens just this
     morning.
02 B These greens here.
03 A I'd come back from fetching them.
04 B Ah.
05 A So that's how it was. We got rained on on the way here.
06 B Eh! So you got it on the way here.
07 A We did.
08 B You did. It was this morning.
09 A It was.
10 B It was.
11 A It was.
12 B So it was you just returned then.
13 A Just returned then.
14 B Returned.
15 A Returned.
```

Tzeltal interactions involve a number of ways of monitoring visual information in social (and other) environments, but these do not depend on eye contact: vocal repetition does the work of establishing mutuality. In this sense, the example above echoes certain situations in Western culture, such as radio-conversations, in which exclusion of the visual realm is imposed by the technical conditions. However, it is not just the type of signal that can vary culturally; so too can the number. A study of interactions in Japan has shown that feedback-signals are used much more frequently than in England (Cutrone 2005). Differences like these in the use of recipient signals also contribute to the shaping of positive and negative perceptions of *alter* in intercultural situations—and ultimately also to the formation of stereotypes.

It has also been found that assessment of adequate pause-length between turns varies heavily cross-culturally. In many Western societies, the maximum length of a pause in a conversation before it is perceived as an awkward silence is one second (Jefferson 1983). In other communities, there are different standard lengths and different judgements about when and where you should be silent or speak.[41] Divergence in the assessment of what constitutes an appropriate pause is well described for Aboriginal communities, the phenomenon being highly relevant in Australian intercultural trials, where the assessment of what is an appropriate pause-length differs between (Anglo-Australian) lawyers and judges and (Aboriginal) witnesses and defendants.[42] Since pause length is taken by judges and lawyers (and jurors) as a strong indicator of the credibility of a response, and because manipulation of such pauses by a questioner is an important tool in generating social pressure, the different perceptions as to appropriate pause-length impact upon both judgement and sentencing.

In the literature, the interactional practices of Aboriginal people are related to an entire cultural system inspired by a default position of 'non-dyadic' and

[40] Brown 2000: 203–4.

[41] An example as famous at it is controversial is the 'silent Finn'. See e.g. Tryggvason 2006.

[42] Eades 2007. As the author says (p. 288): 'Of course, we customarily define interruption as involving a second person starting to talk before the first speaker has finished talking. But if we accept that the first part of an Aboriginal answer often starts with silence, then to start the next question before the Aboriginal interviewee has had the time to speak, is in effect to interrupt the first part of the answer.'

'continuous' interaction. Because Aboriginal co-interactants—in contrast to their Western counterparts—assume that the conversational floor is open at every moment ('continuous'), they can entertain long pauses without commenting on emergent silences and without having repeatedly to reopen the interaction whenever they want to talk again. At the same time, it is unusual, in an Aboriginal setting, to interact dyadically (communication is 'non-dyadic'); rather, the standard model is to address utterances to the whole group ('talk is broadcast'). If someone feels addressed, they may reply. There is no clearly demarcated participation framework (no speaker, addressee, audience, etc.). One effect of this is a technological preference on the part of Aboriginal communities for conference-style over dyadic telephones (Walsh 1991).

When it comes to politics in societies with non-dyadic interactional styles, one result of the abandonment of the dyadic interactional structure in favour of an open conversational floor is that decisions are made not in dialectical conversation but in a polyphonic manner. There are numerous accounts of such non-dyadic political debates in which the formal style precludes individually motivated contributions and in which anyone who tries to press others into a particular position immediately loses their social status. In these debates, individual contributions are made in such a way that others are able to contribute their view as part of the ongoing activity, so that ultimately a joint utterance arises to which everyone present has contributed and in which no individual authorship is identifiable. The result is a consensual statement that does not endanger the political order of the group.[43]

As we have seen, the formal procedures that shape interactions, in an embodied and pre-reflexive manner, can differ considerably between cultures. At the same time, these differences are normatively charged, so that variations (long pauses, for example, or overlaps) often help create stereotypes, or have to be accounted for in interaction. Thus, somewhat counter-intuitively, the formal procedures involved in conducting an interaction do not provide a suitable basis for commonality—on the contrary, they may create an appearance of understanding whilst in fact creating confusion.

Co-presence and Bodily Responsivity

The fourth dimension of interaction I shall discuss here encompasses bodily responsivity and the corporeal means of creating co-presence. Reports by travellers describing first-contact situations with people from other cultures indicate that the human body is a ready means of intercultural communication. Typical human needs such as hunger and thirst can be signified by gestures, and these are comprehensible to counterparts. But more abstract content can also be communicated fairly easily, as an extract from the diary of Martin Frobisher, an Arctic traveller of the late sixteenth century, shows. He describes interactions with the Inuit on an island in the northern part of Hudson Bay. The locals communicated with him by—as he puts it—'making signes with three fingers, and pointing to the Sunne, that they mean to returne within 3 days, untill which time we heard no more

[43] Graham 1995, esp. 139–70, with a good example on p. 155.

of them, & about the time appointed they returned'.[44] Frobisher also mentions how potential communication-problems were solved: 'And if they have not seene the thing whereof you aske them, they will wincke, or cover their eyes with their hands, as who would say, it hath been hid from their sight. If they understand you not whereof you aske them, they will stop their eares.'[45]

This account demonstrates that our bodies act as a universal anatomical reservoir for cross-cultural communication. However, in the view of Marcel Mauss, the body is by no means universal; it is in fact a 'main locus of culture' and humanity's primary technical object and instrument. Bodies are therefore never merely natural; they are cultivated and culturally charged. For example, says Mauss, '[t]he positions of the arms and hands while walking form a social idiosyncrasy, they are not simply a product of some purely individual, almost completely physical arrangements and mechanisms' (Mauss 1935/1973: 72). This is why the coordination, disciplining, and ritual shaping of human bodies constitute important elements of sociality—and thus allow the possibility of a wide range of cultural differences which, instead of facilitating cross-cultural communication, actually obstruct it.

Differences are not restricted to bodily practices; the meaning and use of the senses can also differ—as we saw in the 'gaze' example above. Every difference in bodily convention affects the course of interactions conducted under conditions of alterity. In many countries, for example, the body and its expressivity are subject to various taboos—such as that concerning left-handedness in many Islamic and West African societies or the objection to the consumption of food or the performance of acts of personal hygiene in public in many other societies (Ameka and Breedveld 2004). Even the interpretation of bodily postures and positions, and the attribution of specific emotions to these, varies from culture to culture (Kleinsmith, De Silva and Bianchi-Berthouze 2006). Distance between interactants is a case in point: Italian men, for example, stand closer to one another than do German men, who in turn stand closer to each other than do American men. In male–female pairs, Germans and Italians adopt the same distance whereas US couples stand further apart (Shuter 1977). Doctors, for whom proximity is a professional necessity, nonetheless display less affective behaviour towards patients from other cultures.[46] These bodily cultures are shaped in childhood. In interactions in the playground, for example, children of the Anglo-American middle class keep further apart from one another than do working-class African-American or Puerto Rican children (Aiello and Cooper 1972; Baxter 1970). Children of African-American families also touch each other significantly more during interactions than do their Anglo-American counterparts (Willis and Hofmann 1975). Where they attend predominantly Anglo-American or mixed schools, both Anglo-American and African-American children reduce the amount of touching they engage in as they move from kindergarten to 6th grade. Among African-American pupils in schools attended mainly by children of their own group, this does not occur. Bodily contact between the two overall groups, meanwhile, almost never occurs (Lafrance and Mayo 1978).

[44] Quoted at Hewes 1974: 10.

[45] Quoted at Hewes 1974: 11.

[46] Schouten and Meeuwesen 2006, Steffensen and Colker 1982. This is also true in judicial processes—see Fontaine and Severance 1990.

Culturally shaped preferences in regard to personal bodily practices are, of course, related to socialization. A study comparing hygiene practices in families in Los Angeles and Rome showed that in Los Angeles, much more attention was paid to the early development of the children's personal autonomy in certain well-defined individual areas, whereas in Rome the central concern was the proper implementation of effective practices and the assumption of responsibility by the whole family. In Rome, homes are much smaller, with the result that privacy is much less and expectations in regard to it are necessarily much lower (Fasulo, Loyd and Padiglione 2007). In contrast to these socio-culturally idiosyncratic situations, there are currently also new cultures emerging which involve the virtual cultivation of global bodies. One example is hip-hop breakdance, representing a potpourri of globally diffused and locally contextualized practices through which the actors in question negotiate complex identities (Osumare 2002). Globally circulated media are thus contributing to the creation of models for bodily practices that go beyond locally shaped particularities—and in the future may also provide a template for globally operational bodily cultures.

All the enculturated bodily practices mentioned here result from 'tacit knowledge', which can vary widely from culture to culture and is difficult to elucidate. By way of conclusion, then, we might say, one the one hand, that the body can serve as a common ground for communication and as a universal repertoire for communicative forms (metaphors, for example) (Freyre 1986; Lakoff and Johnson 1980). On the other hand, lurking beneath this assumed universality are cultural specificities that threaten to undermine apparently successful communication.

To summarize: we have seen that, given human reflexivity, interaction with socio-cultural strangers is flexible and circumstantially adaptive, and this flexibility has undoubtedly been one of the driving forces of history. Whereas persistent semantic divergences render the interactional dimensions of shared knowledge, and necessarily also topical continuation, extremely precarious, the temporal-sequential and bodily structures that humans share existentially appear to provide a common ground for interaction under conditions of socio-cultural difference. That this is so is demonstrated in migrant societies which have had to deal with socio-cultural hybridity from their very beginnings. In Brazil, for example, where interaction with socio-cultural strangers has always been standard, the bodily and sequential dimensions of human existence have grown to form, as it were, a common reservoir of shared assumptions. Although they do not yet serve self-evidently as the sole common ground, these nonetheless shape everyday interaction (see esp. Freyre 1986).

Socio-Technical Alterity

As we have seen, joint sequential and bodily structures can serve as initial (and sometimes illusory) common ground for interaction under the condition of socio-cultural difference. This finding can be taken as a starting-point for the analysis of contact with robots and virtual agents.

Topical Continuation

Topical continuation has always ranked as one of the most spectacular abilities that robots and virtual agents are endowed with. Even very early experiments in creating artificial interactions between humans and computers produced remarkable results. ELIZA, a virtual psychotherapist developed by computer-scientist Joseph Weizenbaum and much lauded by psychiatrists of the time as representing the therapeutic future, managed to convince a number of users that their interlocutor was a human being working from another computer.[47] Weizenbaum's shrewd tactic of getting ELIZA to repeat users' remarks back to them in the form of questions was particularly effective in giving the dialogues the feel of a therapeutic session.[48] The programmed ability to identify specific words and word-types, and to produce either appropriate empathic statements or references to the semantic category to which the words or word-types belonged (mother⇨family, for example), was also an elegantly simply way to generate discursive coherence. ELIZA thus built on the human inclination to project meaning onto just about anything.[49]

However, the ultimate goal of AI engineers is to create an adaptive agent that can act flexibly and appropriately in a variety of social situations. Since the ability to generate topical continuation depends on an accurate assessment of the social situation in which one finds oneself, building in the capacity to select appropriate speech-genres presents a notorious problem for developers of robots and virtual agents. This becomes evident in the following examples of interaction between, in each case, a user (N) and a virtual agent (A), where sequential progression is problematic and topical relatedness precarious.

Example 5[50]

```
01 N Are you hungry?
02 A I'm not allowed to say.
03 N Do you like pizza?
04 A I'm sorry, but I'm not allowed to leave.
05 N Spaghetti?
06 A That's a good question.
```

A virtual agent may manage repeatedly to create the illusion of possessing sophisticated interactional skills, but this impression is inevitably dashed shortly afterwards.

Example 6[51]

```
01 A What's your name?
02 N Are you really interested in my name?
```

[47] Of relevance here is the Turing test, success in which (still awaited) requires that a human computer-user be unable to tell whether an online interlocutor is a human or an AI entity (Turing 1950; see also Epstein, Beber and Roberts 2009).

[48] The idea of creating social resonance through the repetition of utterances is currently being tested in the realm of gesture—see Kopp 2010.

[49] Weizenbaum 1976. On the human inclination to attribute sense and intention, see Dennett 1987.

[50] Krummheuer 2010: 121–2. My translation.

[51] Krummheuer 2010: 168. My translation.

```
03 A Is the Pope Catholic?
04 N ((laughs)) And if I'd prefer to remain anonymous?
05 A You don't even wanna know. ((grins))
```

Sometimes even the re-use of a name that has already been mentioned—the most basic step in establishing an elementary interactional history—poses great problems for the virtual agent (Kluïwer 2011: 4).

However, topical continuation can sometimes be established when the human interactant is aware of the capabilities of the technical device and adapts very closely to them. Because people are used to dealing with counterparts of one kind or another who are not fully interactionally competent (in the sense of the theoretical dimensions of interaction mentioned earlier), they will often apply this knowledge in interactions with robots and virtual agents as well (Kulyukin 2004, esp. 254). On the other hand, verbal abuse of robots and agents is also a common phenomenon, apparently serving the purpose of distancing oneself from the technical device but also of testing its human-like properties (Levy 2009; Bartneck and Hu 2008; De Angeli and Carpenter 2005).

The level of topic continuation in interactions with robots and virtual agents is far from rudimentary. Clearly task-oriented conversations often run smoothly, as do conversations which—like those used with ELIZA—are designed from the outset to be non-specific and in which the purpose of the virtual agent is merely to stimulate self-reflection by its human interlocutor. In most cases, however, use of the robot or virtual agent is limited to what its capabilities allow, notably if the user is aware of how the device or programme functions. Everyday conversations that are not pre-structured are one area in particular in which a robot or virtual agent will often produce inappropriate, 'oblique' turns, leading to the breakdown of the interaction. Thorough knowledge, on the part of the human user, about the technical device's capacities is therefore indispensable in securing topical continuation with robots and virtual agents.

Shared knowledge

One-sided knowledge is, however, not sufficient for successful interaction. To ensure comprehensive capability in regard to topical continuation, robots, given that they are in communication with the real world, must be provided with 'knowledge' (information). In contrast to the situation with virtual agents, this knowledge cannot be fully programmed in and has, rather, to be inscribed through learning processes (Ghidary et al. 2002, esp. 181). Virtual agents, meanwhile, have already been programmed with categorical and semantic knowledge. Basic agents designed for administrative and memory-related management, for example, are able to flexibly order and manage spoken information.[52]

An example drawn from a dialogue between a user (U) and a virtual 'Senior Companion' (SC) about a group-photo from a holiday in Tanzania shows what more is possible. The system had recorded from a previous conversation that the user has a daughter named Zoe.

[52] Dahl et al. 2011, and see p. 293 for an example.

Example 7[53]

```
7  SC: How do you know Octavia?
8  U:  She is my daughter.
9  SC: Aha! We see. Octavia's sister is Zoe.
10 SC: How old was your daughter Octavia when this photo was
       taken?
11 U:  Octavia was 19 years old.
12 SC: What was the occasion of this photo?
13 U:  This was another family holiday.
14 SC: Where was this photo taken?
15 U:  This photo was taken in Tanzania.
16 SC: Have you ever been to Zanzibar?
17 U:  Yes, I have.
18 SC: Great place, we hope you saw the beaches. When was this
       photo taken?
19 U:  Last year.
```

As we can see, the system is able to draw simple conclusions by referring, on the one hand, to pre-programmed semantic knowledge (for example, that daughters of the same parents are called sisters) and to episodic knowledge from past interactions, and is thus able to interpret new information. In addition, it is able to retrieve new information from the Internet—in this case that Zanzibar is famous for its beautiful beaches.

Robots programmed in this way also need to learn to combine the resultant stock of information with visual perceptions (Lemaignan et al. 2012, esp. 193). In addition, in order to interact successfully with humans, they must have a kind of interactional memory that will mediate between the concrete here-and-now and the unfolding, ongoing interactional process. This is a basic prerequisite for achieving task-orientedness. Though impressive, memory of interaction-history in robots and virtual agents is still mostly far too inflexible. This often frustrates human users. Interaction with artificial telephone-agents is a case in point: deficiencies in the system cause it to keep repeating information or demand it in a 'bossy' tone. As a result, the system often comes across as arrogant, stubborn, or actually aggressive (Wallis 2008, esp. 449–50).

In general, the ability of robots and virtual agents to share stocks of knowledge of a semantic, episodic, or declarative type with human beings is impressive. Often, however, the way in which this knowledge is used is still too inflexible for interaction. This was why, in the 1990s, engineers began to realize that, if we want them to be able to situate and embody knowledge as humans do, robots and agents ultimately have to be designed in a way that enables them to learn by the same bodily means and experiences (Brooks 1990, 1991; Brooks and Stein 1994). Only through learning will devices be able to apply knowledge to specific situations and thus develop the ability to act flexibly according to circumstance.

[53] Catizone and Wilks 2011: 304.

Formal-Procedural Operationality

In the case of socio-cultural difference, the procedural and sequential dimension of social interaction proved to be the most unproblematic of all the dimensions considered. We have already seen that robots and virtual agents are proficient at adhering to the human turn-taking system. Tag questions, follow-up questions, and counter-questions also function well in technical devices. All this in itself provides a basic ground for the establishment of an interactional dyad. In order to develop the ability to signal personal addressing or listener attention in a device, engineers draw on findings in sociological and linguistic studies which show that gaze is crucial in the procedural organization of interaction (although, as we have seen, this is not true for all societies). Robots are designed from the outset in a way that enables them to simulate this kind of interactional organization. This usually works well and robots that are programmed in this way tend to capture and hold the attention of their interlocutors when talking to them (Kuzuoka et al. 2008, esp. 203). To achieve this, robots also use restarts and pauses precisely in the way they were described as interactional techniques among human interactants in North America.

Robots are also able to contribute in a very orderly and human manner to interactions in which knowledge about the activity in question is crucial. This is demonstrated in the following example, in which a man (U) shows a robot (Biron, B) round his home. As part of getting acquainted with the location, the robot pivots round to look at the room they are in and this is treated as a normal part of the activity by the man. The robot's action is situationally appropriate and genuinely related to the overall activity (being shown a home). The man nods and waits for the robot to turn around.

Example 8[54]

```
1 U: Biron, THIS is the LIVING room
     *img.1
2    (1.8)
3 B: (0.2) this is then the living room
     |cam↓|
          |turns...                20°
          *img.2
4 U: |nods acknowledging |waits
  B: ...                        ...150°
     *img.3                      *img.4
```

img. 1

img. 2

img. 3

img. 4

[54] Lohse et al. 2009: 310.

However, this kind of pre-programmed behaviour sometimes fails—for example, when the human co-interactant expects an action different from the one the programme is able to provide (Lohse et al. 2009, esp. 318). Between humans, this would not pose a problem, since both partners in the interaction are constantly mutually adjusting their expectations as part of the ongoing activity. A robotic system, by contrast, is not flexible enough to allow for different, but still normal, conceptions of what it is to show or be shown round a home and be able to respond appropriately. This would require being able continually to recognize the other person's behaviour, interpret it correctly, and respond flexibly to it with an appropriate follow-up action.

Ultimately, since the human organization of interaction on which the development of robots is based is not universal (as shown in the earlier account of socio-cultural alterity), most of the devices that are currently being built are usable only by a small number of (mostly Western) communities in the world. For the development of cross-culturally operational technologies, a de-Westernization of the interactional principles built into robots and virtual agents would be required.[55]

Nevertheless, it may be said that in general, although robots and virtual agents are still one-dimensional in their behaviour, the procedural organization of interaction is the component that has been simulated most successfully—in relation to users in Western and Japanese societies.

Co-Presence and Bodily Responsivity

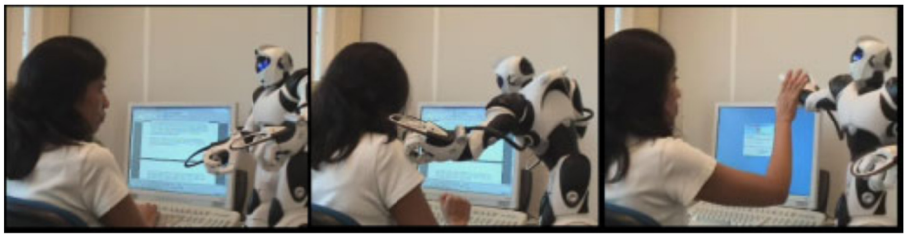
At first glance, the greatest problem technical devices face in trying to appear as human as possible is their lack of a body. Robots already have physicality and developers of virtual agents are trying to simulate bodily presence for this group also. What motivates these endeavours is the fact that humans view agents more readily as conversational partners, and adopt a cooperative social stance towards them, when they are animated and possess bodily social presence (Louwerse et al. 2009). Human interactants readily greet and cooperate with robots and agents when these are either physically present or live on video (Bainbridge et al. 2011). But increased social presence evokes an even more positive social response to agents. Perceptions about the degree of intelligence of a robot or agent correlate significantly with animacy, and the more animated their face, the more likely it is to attract the attention of the user (Bartneck et al. 2009; Novielli, de Rosis and Mazzotta 2010). This is why the display of emotion is a major topic in robotics research (Amores, Manchón and Pérez 2011: 322).

A significant problem of interactional co-presence in relation to robots and virtual agents is mutual monitoring. Robots continue to have difficulty in distinguishing humans from other objects in their surroundings and in detecting their heads and recognizing their faces and voices. Humans, meanwhile, will often readily interact with robots in a bodily way, once a framework for participation has been established (Lee et al. 2006). While some users are reluctant to have closer tactile contact, people who are more positively disposed to robots in general view those that interact by tactile as well as by vocal means as less machine-like (Carpenter et

[55] For a discussion on this, see Henrich, Heine and Norenzayan 2010.

al. 2009). One example of this is the mostly positive attitude of human users—especially younger ones—towards being patted by, or high-fiving, a robot.

Example 9[56]



Bodily present social robots that are capable of tactile interaction with humans can be of great value, particularly for isolated sections of the population such as the elderly or patients with immune-deficiency problems who are kept in isolation (Lee et al. 2006). These robots and virtual agents can provide humans not only with physical assistance (the punctual administration of medicines, for example, or guidance when the person goes for a walk) but also with emotional support (as someone to play games with, or as a 'pet'). A supportive role for social agents in the delivery of therapeutic aid and care of the elderly is already becoming a reality in Japan, Korea, Germany, and the USA.[57]

In Germany, the responsive 'cuddling' seal-robot 'Emma' has been successfully introduced into the caring domain. In the USA, meanwhile, a 'huggable' pillow ('Hug') has been developed, with a view to enabling absent family-members to engage in simulated tactile interaction. Hug can send and receive voices, simulate hugs with different vibration-patterns, and also radiate heat. This kind of physically embodied social agent equipped with haptic technologies will probably very soon also be used to evoke a sense of social presence in users of robots. Although it may seem a bit grim to have to resort to hugging a robot, the technology does succeed in introducing a positive note to the lives of certain sections of the population who are systematically deprived of such contact.[58]

To summarize: despite the best efforts of engineers, topical continuation and the adequate provision of shared 'background' knowledge remain precarious in the simulation of interactional competence in robots and agents. Procedural operationality and sequential progression work reasonably well, and the simulation of tactile and bodily presence in robots and agents is more readily accepted than one might predict by those with little experience of robots. We can therefore already predict a human–robot/agent coexistence in which the socio-technical stranger is used like a pet and humans adjust their behaviour specifically to the respective abilities of their AI co-interactants. As in the case of the socio-cultural stranger, such interaction will promote 'tolerance for ambiguity' in finding ways to interact appropriately with numerous counterparts of greater or lesser

[56] Cramer et al. 2009: 439.

[57] The sources are numerous: Klamer and Ben Allouch 2010; McColl and Nejat 2013; Broekens, Heerink and Rosendal 2009; Libin and Libin 2004; Martín et al. 2013; Bernstein, Crowley and Nourbakhsh 2007.

[58] Laryionava and Gross 2012, Selingo 2004, DiSalvo et al. 2003, Mueller et al. 2005, Tsetserukou 2009.

interactional ability. At the same time, devices will have to prepare for a degree of abuse, given that humans do not as yet project emotion or sensitivity onto them.

The situation is a different one in our next example—interaction with dementia sufferers—where projection, by both sides, of greater competences than those that actually exist can lead to misleadingly workable interchanges.

Socio-Cognitive Alterity

As we saw earlier, the joint sequential character of social interaction in particular provides a common ground for interaction with socio-cultural and socio-technical strangers. In the case of socio-cultural alterity, topical continuation can be flexibly assured, but in socio-technical alterity, it has not yet been successfully simulated. Shared knowledge, meanwhile, is precarious in both cases. Bodily responsivity, though it works reasonably well in both alterities, clearly demands a certain level of familiarity and trust, which, in these alterities, have first to be established by other means. By contrast, when it comes to dementia sufferers—the group we shall now move on to consider—interaction often does occur under conditions of trust and familiarity, since it takes place with family members or long-term carers from outside. We will now take a closer look at the way in which each of the four interactional dimensions functions in relation to this group.

Topical Continuation

We have seen that in interactions with socio-cultural and socio-technical strangers, topical continuation is fragile and problematic. This is no different when it comes to interaction with dementia sufferers, although in general it is safe to say that the more familiar the social relations are to the co-interactants, and the more familiar the physical environment, the fewer the interactional troubles.[59] The communicative utterances of people with early-phase dementia are generally described as fluid and syntactically well formed but in many cases meaningless. Because of mnemonic, expressive, and conceptual problems, dementia sufferers often produce inappropriate (oblique) sequential actions that are regarded as meaningless by healthy co-interactants. Interactions are therefore relatively short-lived and often end in breakdown (Appell, Kertesz and Fisman 1982: 83). The following example, in which linguist Heidi talks with dementia sufferer Elsie, illustrates this phenomenon.

Example 10[60]

```
1 Elsie: And where did you say your home was?
2 Heidi: I'm on Walter Road.
3 Elsie: You can do that. That's a good idea.
```

[59] See esp. Ramanathan 1997.

[60] Hamilton 1994: 2.

As this indicates, even in the early phase of dementia, utterances become increasingly vague. Sufferers provide less and less of the kind of information that is crucial to comprehension and more and more peripheral information and vague references (Hamilton 1994: 25–6; Ellis 1996: 483–90, McLean 2006: 167). Other problematic areas are the production of discursive coherence and the distinction between fact and fiction (Killick 1999; McLean 2006: 167–9; Ellis 1996: 474). Communication thus progressively loses its propositional function and condenses into what anthropologist Malinowski once called 'phatic communion', meaning 'a type of speech in which ties of union are created by the mere exchange of words' (Malinowski 1923: 315). The socializing aspect of communicative activity is maintained (or even increased) and the informational quality reduced.

In the middle phase of the disease, the utterances of sufferers become lengthy and clumsy; in the late phase they shrink to no more than a few words, and eventually the person becomes largely silent in terms of verbal activity.

Many of these symptoms derive from a core communication problem of dementia, namely that it leads to difficulty in word finding. This results in the replacement of a precise word with an imprecise or semantically related one, or in circumlocutions and semantic and phonetic transformations. 'Match', for example, may be replaced with expressions such as 'thing', 'lighter', 'the thing we light candles with', 'fire bug', or with a meaningless but phonologically related sound such as (let's say) 'tcham' (Appell, Kertesz and Fisman 1982; Hamilton 1994: 14).

In everyday interaction, such word-finding difficulties are often of no significance, because both interactants actively cooperate in the constitution of meaning by fleshing out vague content. By contrast, in interactions with dementia sufferers, the burden of the search for meaning has to be shouldered to a large extent by the healthy co-interactant. As a result, topical continuation becomes precarious from as early as the first stage of dementia. Conversations in which facts play an important role, discussions about clear-cut, explicit stances, and interchanges about experiences and events become increasingly difficult. In this process, the co-interactants unaffected by dementia have to adjust more and more to the diminishing capacities of their counterparts.

Shared Knowledge

The lexical deficiencies that characterize dementia—and which contribute significantly to problems with topical continuation—originate in the loss of mnemonic content that afflicts the sufferer. This loss also affects other areas of knowledge which, with 'normal wide-awake adults', can be assumed to be shared. However, during the first phase, dementia sufferers are still able to empathize and assume the role of the other: they try to account for word-finding problems, for example, or for problems with other declarative and episodic knowledge.[61] In other words, they are *aware* of their loss of knowledge and of the fact that this may be puzzling for their interlocutors. In the middle phase, this ability fades away and there is no longer any awareness—at least in communication—that their own behaviour may be confusing for their counterpart (Kitzinger and Jones 2007;

[61] On different forms of memory, see Tulving and Craik 2000.

Hamilton 1994: 41, 55). The following example illustrates an interchange during the first phase of the disease.

Example 11[62]

```
1 Heidi:  Do you know Jill?
2 Elsie:  Jill.
3 Heidi:  Jill Masters? The person who runs all of the activities?
4 Elsie:  Well, I don't know. I've had so many names (that I it)
          sometimes they are hard to get uh pickly I mean quickly.
          [laughs]
```

One study describes how a dementia sufferer telephones her daughter every day, but each time forgets important details of her daughter's life—that she has broken her leg, for example, of that she has a son (the sufferer's grandson). Instead, partly also in order to mask her deficiencies, she talks about her own needs and problems and this produces an impression of egocentrism (Kitzinger and Jones 2007). Such examples show that the ability to respond to specific situational affordances, and the loss of specific memory relating to particular co-interactants, fade relatively early in the middle stage of the disease (Bayles 1985; Hamilton 1994: 52; Bryden 2005: 42–3).

Autobiographical memory, including memories of one's own family, is also gradually lost.[63] However, there is more to this than the simple disappearance of content. Because of the way the brain works, all of us, including dementia sufferers, are continually reconstructing our biographies on the basis of the information available to us. But dementia sufferers have a diminishing stock of memories and in their case the task of maintaining a consistent self is therefore a minute-by-minute endeavour[64] and the permanent changes in biographical structure that result often bring with them a growing alienation from family, friends, and carers (Randall 1996: 237–8). In the case of immigrants, loss of autobiographical memory leads to the loss of second-language skills, so that, at a certain point, they become unable any longer to speak or understand the language of their adopted country (Hyltenstam and Stroud 1993).

As these examples show, during the early and middle phases of the disease, various kinds of knowledge—particularly declarative and episodic knowledge, but also role-taking and awareness of the cognitive and normative expectations of *alter*—become more and more troublesome for dementia sufferers. In the case of socio-cultural strangers, this knowledge can be accumulated through everyday experience and learning (and possibly also through explanation); and in the case of socio-technical strangers, it will mostly be additionally programmed in. In the case of socio-cognitive strangers, by contrast, the loss of memory entails a loss in the ability to learn in general, so that interaction with dementia sufferers does not exhibit the quality of potential mutual adjustment. Instead, the cognitively unimpaired counterpart has to adapt to the capabilities of *alter*. If they can expect any change, it will be further loss rather than any remedy.

[62] Hamilton 1994: 57.

[63] See Healing Project 2007: 35–6 for an example.

[64] Piolino et al. 2003, and for an example McLean 2006.

Formal-Procedural Operationality

Despite all these problems, in situations where the interactional machinery is highly routinized, interaction with dementia sufferers does often work. This is especially true for familiar social exchanges ('Hello'–'Hello', 'How are you?'–'Fine', and so on). In the middle and late stages of the disease, vague, sometimes nonsensical, answers are given merely to sustain sociality through the turn-taking structure. This is linked to another typical trait of the middle phase, namely the unusually frequent use of repetition. This practice has been termed 'involuntary parroting' by psychologists and is described by them as being devoid of meaning and caused by lack of cognitive control (Guendouzi and Müller 2006: 168–88; Shindler, Caplan and Hier 1984). However, sociological studies based on audio recordings indicate that it serves as a means of making repairs and securing communication (Hamilton 1994: 54, 73–7; Mikesell 2010; Kitwood and Bredin 1992).

In order to keep an interaction running procedurally, tag questions or other devices are needed to signal to the counterpart that an utterance has not been understood. The capacity to deploy these devices remains functional in the middle phase of dementia (Hamilton 1994: 61–2). However, it is also at this stage that problems emerge in regard to situating the interaction in the here and now: indirect statements are no longer understood; expressions such as 'I wonder where the book is' are interpreted by the sufferer not as a question or request but as information about the speaker (p. 86).

In the late stage of the disease, questions are no longer answered in a differentiated way. Despite their lack of language abilities, dementia sufferers are still capable of agenda-setting. In the following example, dementia sufferer Elsie induces topic change through her gaze-behaviour.

Example 12[65]

```
1 Heidi:  Do you need another Kleenex?
2 Elsie:  (directs gaze away from Heidi toward picture)
3 Heidi:  Are you looking at the picture? This one? Isn't that
          pretty? Those colors.
          It says it's by Sally. Do you know Sally? Sally. Do you
          know that person? ...
          Isn't that pretty? (leaves to get Kleenex)
```

Heidi, the healthy interactant, volunteers herself as spokesperson to articulate Elsie's utterances. Because Elsie, in the late stage of the disease, can only signal acknowledgement, Heidi asks yes/no questions until intersubjectivity is procedurally achieved.

The ability to fulfil the requirements of the formal, procedural dimension of interaction thus remains intact longer than content-related skills. This parallels the findings for the other two alterities considered here, namely that the procedural/sequential dimension of social interaction is the most unproblematic one, providing a timing basis for social interchange.

[65] Hamilton 1994: 127.

Co-Presence and Bodily Responsivity

As we have just seen, even when dementia sufferers have lost the ability to communicate semantic content, their competence in terms of the rhythmic timing of interaction remains functional. Late-phase sufferers still allow pauses between their utterances, enabling co-interactants to take over the floor; and even in interactions that are completely devoid of semantic meaning, dementia sufferers attend to the turn-taking system, as an example from an American nursing home shows.

Example 13[66]

```
1  Abe: Bupalupah (singing)
2  Ann: (turns to Abe)
3  Abe: Brrrrrrr! (melodical)
4  Ann: Brrrrrrr! (imitating)
5  Abe: Bah!
6  Ann: Shah!
7  Abe: Bah!
8  Ann: Shah!
9  Ann: (turns away from Abe)
10 Abe: Bupalupah!
11 Ann: (raises one arm above her head and lowers it in a swift
        motion with a sharp flick of her wrist)
```

This exchange is devoid of semantic content, but the prosodic features of the contributions are extremely well matched. In the late phase, affective interaction of this kind usually replaces topical interaction. For example, where verbal resources are reduced, affection may be expressed by the fondly articulated utterance of the simple word 'You', or by touch (Healing Project 2007: 14, 19, 76–7; Bryden 2005: 138). The importance of affective interaction in such situations is probably also the reason why the co-presence of animals—on a visit to a farm, for example—proves therapeutically beneficial and helps assuage the dementia sufferer's symptoms (Jens 2008: 153–4; Bryden 2005: 146–7).

That the body plays a vital role, not only in maintaining interactional skills but also for the well-being of the demented person as a whole, is recognized in a wide range of ethnographic reports (Kontos 2006: 198–201; Healing Project 2007: 45; Bär 2010). Even when semantic and episodic knowledge have already disappeared, embodied procedural knowledge remains functional. In the late stage of the disease, dementia sufferers can still sing and pray together, exchange touches and caresses, and carry out practical activities together. It is often their body that continues to know about the forms and purposes of objects, about possible activities with persons and things, and about the enjoyableness or unpleasantness of particular interactions. This knowledge resides in the body, and only when the body is directly stimulated to reveal it can it actually be activated, since cognition has already lost any relation to it (Healing Project 2007: 45).

[66] Kontos 2006: 206–7.

Clearly then, whereas the first two phases of the disease see the loss of semantic and pragmatic communication abilities, the knowledge 'sedimented' in the body, as 'practical sense' (Bourdieu 1980), remains functional until the late stage. Existing templates for motion and interaction with other bodies, and also for dealing with artefacts, enable continued meaningful access to the environment.

Echoing Merleau-Ponty, psychiatrist Thomas Fuchs describes this practical sense as 'body memory' and talks about it as being anchored in the body (Fuchs 2010; Leibing 2006). Body memory is not representative like declarative memory; rather, it embodies and re-enacts experience through bodily practice. Embodied experience is an integral part of the person, since it re-creates the real, living presence of the past. In advancing this notion, Fuchs is challenging scholars such as Eric Kandel, Hans Markowitsch, Jan Assmann, and Harald Welzer, who, in the tradition of John Locke, view memory (in particular autobiographical memory) as the distinguishing characteristic of human beings, without which they lose their status as social persons (and along with it certain moral and legal rights) (Kandel 2006; Markowitsch and Welzer 2005; Assmann 1977; Locke 1690/1975). Some contemporary moral philosophers from the Anglo-Saxon and German world go so far as to rank the personal status of dementia sufferers below that of healthy non-human higher-order mammals (Singer 1980: 178–86; McMahan 2002: 43–8; Quante 2002).

Clearly, then, an embodied form of interaction is still possible in the final phase of dementia. Affective-bodily forms of interaction are particularly successful, and in general the more routinized an interactional practice has become throughout life, the more easily retrievable it will be even under conditions of dementia.

This brief account indicates that, as the disease moves through its various stages, interactional abilities shrink down to the basic procedural and bodily dimensions. One is tempted to see this as a kind of ontogenetic reversal, in which the sufferer's capacities are eliminated one by one in just the same way as they were built up in childhood, excepting that embodied knowledge and practical skills accumulated in adult life remain present even into the later stages of the disease.

Summary

Despite their differences, the types of alterity considered here can still be compared and evaluated in respect of their individual characters. Although socio-cultural alterity throws up significant (albeit relatively easily resolvable) problems in the semantic and shared-knowledge spheres, the temporal and bodily aspects of the human condition provide a starting-point for social interaction. Socio-technical alterity, meanwhile, can evoke an impression of alienness in terms of the bodily dimension (though it is well-received when restricted to predefined areas of corporeal activity). At the same time, it works reasonably well in terms of the procedural dimension and is flexible enough in the semantic and shared-knowledge spheres to accommodate adjustments in human users' behaviour. Socio-cognitive alterity, like its socio-cultural counterpart, poses most problems in the semantic and shared-knowledge spheres, but procedural and corporeal interaction remain functional and provide a basis for continued meaningful interaction.

On the basis of this brief and necessarily limited empirical account of the interactional capacities of the three selected alterities, we are now in a position to identify potential trends in emergent areas of conflict and to outline the kinds of cultures of social interaction that may arise in the shorter and longer term.

Conclusion: Societal Hybridization and the Future of Social Interaction

In this paper, I have discussed three particular forms of societal hybridization, selected because they generate, in both distinct and parallel ways, alterities which individuals and societies will increasingly have to face in the future. I have focused on the challenges which all three of these alterities pose for routinized social interaction. Two of them—the stranger and the person of unsound mind—are already familiar to human society; the third, the artificially intelligent other, is completely new. But even this new form of alterity, alien as it may appear, is designed along human lines in terms of cognitive and social function. Engineers strive to create virtual agents and robots that simulate human competences and practices as closely as possible. The entities that result have a strange familiarity about them and trigger expectations that cannot always be fully met.

Whether these alterities are new or old, the likely increase in the normalization of everyday contacts with them will inevitably generate routine modes of interaction with the three *alters* in question. This process will no doubt begin primarily in the industrialized societies but will, in the long run, spread across most of the globe. Instead of defining the cognitive and interactional capabilities of the relevant co-interactants in terms of their deficits, these modes will need to ensure consonance with them (Nussbaum 2006, esp. 384–8). As I have indicated, these emergent modes of social interaction with different types of strangers also partly draw on existing, established patterns of interaction with liminal social beings such as children, animals, and individuals who are inebriated or deranged.

In the longer term, the three emergent processes will lead to interaction between the three alterities themselves. Examples here include: robots taking care of dementia sufferers; cultural interactional dispositions being inscribed into the design of robots and virtual agents and these devices subsequently interacting with people unfamiliar with these dispositions; immigrants who become victims of Alzheimer's losing their familiarity with the language and culture of their adopted country and, in turn, possibly being taken care of by culture-specific robots; and, finally, virtual agents being used to provide language and cultural training to groups such as military personnel preparing for interaction with cultural strangers (Sagae, Johnson and Valente 2011). In order to respond adequately to the challenges that arise here, we will need a more flexible and broader-ranging model of social persons and agents than was so far presumed necessary.

How will the three processes of hybridization described here change the shape of interaction in everyday life? Very generally, we can say that a higher degree of tolerance for ambiguity will certainly be required on the part of the 'normal, wide-awake adult' to enable them to interact with the different entities. Fundamental assumptions that are currently still regarded as common to large numbers of co-interactants—assumptions not only about social interaction but also in regard to ontological matters—will have to be either de-specified, temporarily suspended, or

de-thematized. This in turn will lead to a de-dramatization of difference. In our interactions with robots and virtual agents of varyingly human character, we will have to develop competences that enable us to deal appropriately with each of these entities.

At a formal level, interaction with each of the alterities considered here will have to be decelerated, so that, for example, longer pauses can be made without causing a breakdown in the interaction. Since the only interactional dimension that has proved to be more or less functional in all three alterities is formal-procedural operationality, it may be assumed that this syntactic, sequential, and rhythmic dimension will gain in interactional importance, whereas the symbolic and semantic dimensions will decrease in significance. A de-semanticization, de-symbolization, and de-narrativization of general culture is therefore likely,[67] potentially reinforced by new media-practices (excluded from consideration here for reasons of space). In this process, meanings and symbols are likely to lose their collectively binding function.

One important fact to emerge here is that the therapeutic and socially meaningful inclusion of dementia sufferers will only be possible when the fuller integration of affective bodily interaction into daily life has become socially accepted. Such an integration would include a stimulating and symmetrical care-environment comprising affective-bodily and practical interactivity. The body may, in the long run, serve as a means of uniting the different alterities—with the possible exception of artificial personas.[68] This possibility also suggests that joint collaborative activities (playing football, making music, work-related training) are better ways of creating interactional bases characterized by mutual interest, respect, and understanding than are deliberative discourses rationally conducted in domination-free circumstances (cf. Sennett 2012). If in future, when we find ourselves in situations of joint relevance, we interact with one another in practical but highly responsive ways, we will develop forms of social interaction that are free from semantic controversy and are sedimented in bodily and procedural routines (Buber 1962). As a result, social cohesion may, in the future, reside in practical, bodily, and procedural mechanisms rather than in systems of shared meanings and symbols.

In regard to all three types of alterities, it therefore seems sensible to refrain from focusing exclusively on the agency and 'mind' of the other, and instead acknowledge the *significance of their appearance*. A culture that concentrates more on how we perceive *alter* and what they do to us as social and emotional beings would seem to be a good thing. Hence, very generally speaking, a cultural shift involving a turning-away from mind towards interaction, from intelligent thinking to social-emotional being, and, possibly, from reality to appearance, would seem beneficial—and feasible (Coeckelbergh 2009; Abney and Bekey 2012; Wallach 2010; Levy 2008).

[67] Lorenzer (1986: 46) views de-symbolization as the dissociation of linguistic and practical figures constitutive for the creation of symbolic representations. A further approach is that taken by grammaticalization theory, which also assumes a growing syntacticalization and de-semanticization (Hopper and Traugott 1993). For a similar approach in relation to ritual, see Staal 1979. No sociological theory, however, has yet been formulated.

[68] This idea was advanced by Freyre (1986) in relation to the radically heterogeneous society of Brazil.

Only by making such a shift will we escape the procession towards a future devoid of truly responsive counterparts who stimulate us in novel ways and sometimes refuse compliance, resist our control, or elude our social conventions. Only with such a shift will we be able to progress both individually and as a society. The dangers of a 'post-social' society' populated by hedonistic individuals who make use of simulation-media to create only those counterparts they decide they want and only in their own image have already been documented (Knorr Cetina 2001). Stichweh, as we have seen, argues that in a globalized society, strangers will lose their unsettling qualities and be increasingly met with indifference and minimal sympathy. He appears to overlook the fact that the potentially disturbing qualities of strangers may, equally, produce a quite different outcome, stimulating and inspiring us in ways that I believe we should make every effort not to lose.

Overall, then, it is highly likely that, in the near future, circumstances will force us to develop social and cultural ways of being in which alterity and hybridity are both a way of life and a cultural resource that helps us to further development. Although difference and similarity (or, as it were, 'family resemblance') will continue to be themes in social and cultural life, new forms of sociality will emerge in the context of this dialectical relationship. Under the pressure of constant innovation—particularly in the area of artificial intelligence, but also as triggered by a better understanding of existing alterities such as dementia sufferers and animals—social ontologies are now in a state of continual precariousness and fragility. As a result, we will be constantly confronted with new forms of affiliation, sociality, and sociability. These in turn will generate new competences in dealing with the permanently evolving alterities, whose morphological properties will in each case have to be considered anew.

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Alzheimer Alterities and Technological Change

Commentary by Stephen Brown

Christian Meyer's paper, 'New Alterities and Emerging Cultures of Social Interaction', considers three important macro-social trends – namely higher rates of immigration and dementia, as well as the increase in contact between humans and artificial intelligence – and, given these new alterities, suggests that a cultural shift has begun in social interaction patterns. Meyer's text is both broad and deep, as it combines a long-term, a 'big picture' approach with in-depth research on the components that fuel the emerging cultures he discusses. The result is an eye-opening portrait of changing cultures of communication. Much can be learnt from reading it, potentially multiple times to appreciate better the wealth of original analysis it provides.

Alzheimerization and adaptation to new alterities

My own reading of Meyer's text, especially the parts concerning socio-cognitive alterity, was very much influenced by my personal experiences with my late mother, Marianne, who had Alzheimer's disease. Over the course of several years, as Marianne's dementia progressed, an extremely familiar person became increasingly like a stranger – a new alterity emerged, even if she still retained the essence that made her Marianne. Had she lived long enough to reach the final stages of the disease, the socio-cognitive transformation may have become almost complete: She could have become recognizable only physically and her children might have become complete strangers to her.

Our patterns of social interaction certainly changed over time. Telephone conversations became more difficult, as I could not pick up on visual clues that could help me understand what was going on in Marianne's mind when she could no longer clearly express herself verbally. The goal and means of communication also shifted. Spending time together became more important not only to ascertain her needs, but to also interact. She became more tactile, drawing greater comfort from physical contact with people and with soft objects within her reach. As 'shared systems of meaning and symbols' faded, conversations became less linear, rational, based on 'intelligent thinking' or designed to exchange information. Instead, they took on a freer form, with me seeking above all to stimulate her and assure her 'social-emotional' and physical well-being. I stopped trying to understand the details of her statements and developed what Meyer calls a greater 'tolerance for ambiguity'.

I wonder to what long-lasting impact this experience has had on me. To what extent could I do this with a stranger? I would surely be less inclined to spend the

required time to engage difficult communication with a true stranger than with a family member in the process of socio-cognitive alterization. Still, I believe that I have begun to adapt to a new culture of communication, not one that I desire or expect to use in my day-to-day exchanges, but one that I am better prepared to deploy if the need arises. And as the processes Meyer describes further develop, I am likely to draw in that new tolerance of ambiguity more often.

My experiences of living in countries where I had a very poor command of the national language had already helped me empathize with socio-cultural alterity. My mother's illness helped me learn to deal with socio-cognitive alterity. I still need a lot of work, however, in dealing with socio-technical alterity. I cannot empathize with a machine and, moreover, I object to having to waste my time in sometimes frustratingly inefficient human-machine interaction solely because private companies want to save money. Unlike the other two alterities, the socio-technical difference is often the product of corporate cost-saving decisions, not the result of social phenomena such as increased immigration and the aging of the population.

When new alterities meet: robot/dementia patient interaction

Meyer's paper makes some mentions of interactions between artificial forms of intelligence and the elderly, including people with dementia – when socio-technical difference meets socio-cognitive difference. It therefore made me think about how a robot companion or caregiver could have helped Marianne and how she would have reacted to it. I think at the initial stages of her dementia, she would have objected quite vehemently. She would have called it 'creepy'. She hated to be patronized by humans, so she no doubt would have been annoyed by the insincerity of any expression of concern coming from a machine. She would also have been frustrated by instances of the robot misunderstanding her meaning, which at that stage would be more frequent than in interactions with human beings.

Still, I suspect she would have been quite happy and sometimes even amused to have a robot companion in later Alzheimer stages, as long as it looked friendly. Meyer's pet analogy seems quite apt, but the robot's duties would go beyond those of a pet. I don't think she would have discriminated much between human and mechanical co-presence, as long as they were performing their duties similarly. If she did feel a rapport with the robot, I am sure physical interaction – the robot holding her hand, giving her a hug – would have been welcome, especially if the robot were covered in a soft, fuzzy material.

I don't believe, however, that everyone would have been as accepting of a robot companion as Marianne. She was exceptionally sweet and easy-going for a person with dementia. Less trusting and less pleasantly disposed people might interact with much difficulty – just as they do with human beings. Could a robot perform its duties effectively with such a person? Probably not if the person were aware of the artificiality of the intelligence and reacted in a hostile manner.

Still, a robot might be better equipped than a human to deal with a verbally belligerent or physically violent person (less likely to be irritated or injured), with someone who reverted to a foreign tongue (it could be programmed to be multilingual) or long pauses in conversation. People who act as caregivers to

dementia patients are more likely than average to suffer depression and even develop dementia themselves. Robots, of course, are immune to such problems and robot-assisted care would be able to reduce the toll on human caregivers. With a little technological progress, remote sensing would also enable robots to monitor heart rates and breathing patterns more easily and less intrusively than human beings.

I imagine artificial intelligence algorithms and computer interfaces will need to improve significantly before they are able to communicate effectively with people with intermediate-stage or advanced Alzheimer's. It may technologically feasible for them to follow a person's gaze, be programmed with the language(s) that the person is speaking, but the non-linearity of conversations and difficulties in communicating at would potentially be quite difficult to surmount. For instance, Marianne sometimes inserted seemingly random words into her statements, such as Palestinians, hemisphere, sandbox, greyhound and jitterbug. How would a robot have dealt with them? It would have to be programmed with filters that would pay less heed to such nonsensical talk, while remaining attentive to words that might suggest physical or psychological distress in a context in which simply asking if anything is wrong might not elicit an intelligible answer. In this regard, it is hard to imagine robots being as adept as human in picking up visual signs of distress, such as facial expressions, but such advances are possible.

Towards alterity synergies?

My own experiences, especially my Alzheimer-induced exposure to socio-cognitive alterity, have given me a glimpse at the future that Meyer envisions. Communication may be more difficult, but there will be trade-offs, including a premium on empathy. In addition, there should be some useful synergies between socio-technical and socio-cognitive differences – and presumably with socio-cultural differences as well. In other words, artificial intelligence may help us adapt to the other new alterities.

The normalization of socio-cultural difference and the future of democracy

Commentary by Daniel Gaus

Christian Meyer's piece on 'New Alterities and Emerging Cultures of Social Interaction' offers rich and fascinating insights into some of the fundamental changes currently under way in (Western) societies. Meyer draws our attention to phenomena whose societal effects are clearly set to be as powerful as they are unpredictable. By highlighting the ways in which robotization and societal ageing are challenging core modes of social interaction, he is helping to flesh out what has so far been a somewhat poorly developed political debate. Discussion of these two trends still centres mainly on their economic implications—namely, the increased burden of long-term financial provision occasioned by demographic ageing, and the need for compensatory measures to deal with growing industrial robotization and concomitant job-losses.

The observations which Meyer makes on the third 'new alterity'—namely, increasing experience of socio-cultural difference—are no less illuminating but, by contrast, do form part of an established debate about the effects of this phenomenon on political life. Globalization, migration, feminism, and European integration have all, in various ways, helped to anchor the phenomenon of increased encounter with, and recognition of, 'the other' firmly within the research-agenda of normative political and democratic theory. In democratic theory, the critique which this has elicited from 'difference democrats'[1] bears striking similarities to Meyer's contention regarding a 'blind spot' in our understanding of social interaction. Meyer argues that '[c]onceptions deriving from the Enlightenment have been particularly influential in causing us to restrict our view too narrowly to cognitive-mnemonic, anthropic, and putatively rational but—as will be shown here—highly culture-bound aspects of the social person' (p. 3). This is precisely the reason which difference democrats cite for their rejection of the still dominant liberal understanding of democracy. They object that liberal democratic theory—be it in the form of a rational-choice-inspired economic theory of democracy or, as has been the case more recently, a deliberative democratic approach—starts from a very narrow conception of the individual as a rational political person. Economic theories of democracy see political behaviour as driven by cost–benefit calculations based on individual preferences and possibilities. In the view of deliberative democratic theory, by contrast, the notion of politics as a series of cost–benefit play-offs is too narrow and takes no account of the role of normative political discourse. Despite its own objections, deliberative democratic theory is itself held to be overly rationalistic. By viewing democratic politics as a quest for consensus, so the charge goes, it is clinging to a utopian ideal. It assumes the individual is a rational political actor motivated only by the 'constraint-free

[1] 'Difference democracy' is not an established paradigm or school of thought. I use the term rather loosely to describe theorists who base their critique of liberal democracy mainly on aspects of socio-cultural difference (see e.g. Mouffe 1993, Pateman 1987, Tully 1995, Young 2000).

force of the better argument' (Habermas 1984: 28), whereas in fact, so critics argue, politics is a constant struggle for recognition against a background of cultural diversity and plurality. As difference democrats see it, to assume that consensus-oriented argument is the primary mode of politics is to suppress all individual and group identities that deviate from (Western, rationalistic) national identity—a view echoed in one of Meyer's observations. The lack of a shared background-understanding, he explains, can constitute an insurmountable barrier to consensus. It may preclude articulation of the views and needs of 'the other' in the (rationalistic) language of established political discourse, with the result that the very recognition of others' identities and interests fails from the outset.

Meyer contends that Western societies are experiencing a 'normalization of socio-cultural difference brought about by globalization' (p. 3). In what follows here, I would like to examine this contention against the backdrop of the debate in democratic theory which I have just outlined. I will argue that increasing encounters with the cultural 'other' fundamentally affect both our understanding of democracy and the legitimacy of established nation-state democracies. Unlike difference democrats, I do not hold that deliberative democracy is devalued by the normalization of socio-cultural difference. Instead, so I believe, it offers us a vantage-point from which we can gain a better understanding of the ongoing transformations and the possible ways of coping with growing diversity in the political realm. To illustrate this, I will begin by describing some of the challenges which the growth in experience of socio-cultural difference is posing for national liberal democracies. I will then give a brief account of Jürgen Habermas's theory of democracy, of the role played in it by consensus and sameness, and of the function it attributes to parliamentary discourse. My aim is to demonstrate that Habermas's discourse-theory of democracy can fruitfully incorporate Meyer's observation regarding the normalization of socio-cultural difference and, having done so, can offer us new ways of thinking about transnational democracy.

1. Normalization of socio-cultural difference as a challenge to national liberal democracy

The chief way in which the proliferation of encounters with the culturally different is challenging nationally integrated democracies—and, more generally, our understanding of democratic politics—is through its impact on the emotional cornerstone of political community: the idea of the nation. The effects of the normalization of socio-cultural difference are already visible: in some circles, such normalization breeds fear and a diffuse sense of insecurity in regard to immigrants and foreigners, leading to calls for *renationalization*; amongst growing numbers of people, however, the ongoing encounter with cultural others evokes not xenophobia but curiosity, not a fearful clinging to tradition but a celebration of difference. Socio-cultural difference prompts us to some extent to adopt a reflective stance towards our own political identity. One consequence of this is that demands relating to justice and equality, to redistributive policies and social security, no longer automatically cease at a national community's borders—whether these be external, in regard to the application of national policies to neighbouring countries, or internal, in regard to the entitlements of non-national

inhabitants. In other words, increasing socio-cultural difference also fuels processes of *denationalization*. And this denationalization is giving rise to one of the greatest challenges confronting democratic theory today—that of determining how our political framework must be adjusted as the nation loses its ideational power and our long-established democracies, founded as *national* entities, are increasingly faced with problems relating to inclusion and representation.

In this context, the normalization of socio-cultural difference triggers a series of important questions about the nature and possibility of transnational democracy. This is a multi-faceted conundrum involving much more than the simple search for realistic ways of extending democracy beyond territorial borders. It implies subjecting a whole range of deeply entrenched political concepts to radical questioning: What do we mean by a citizen of a democracy? And who is entitled to be or become one? Does democracy depend on the state's monopoly on the use of force, or are there other, horizontal, non-state forms of democracy ('network' democracies, as some call them)? And—most importantly for our purposes here—how much sameness does democracy require?

Views on this last question are being profoundly influenced by the slow but steady normalization of socio-cultural difference that is currently under way. By forcing us to reflect on the normative bases of our political communities, the proliferation in encounters with the cultural other in political life is eroding the as yet predominant notion that political community—particularly in its democratic permutation—is dependent on a pre-existent, pre-political (national) identity. The impact which this transformation is having is hard to overestimate, given that it changes the very basis of political integration. A degree of sameness is clearly required in every democracy: a minimum level of trust must exist if we are to view the other as enjoying the same rights as ourselves in the self-government of our political community (Preuss 1998). And yet if we accept Meyer's prognosis, this commonality will in future cease to be regarded as a natural phenomenon or a given—something that the other has or has not, depending on the cultural community she belongs to. With the normalization of socio-cultural difference, pre-political sameness is likely to fade away. As Meyer puts it (paraphrasing Stichweh), we will increasingly find ourselves in situations where we routinely 'act under the presupposition of socio-cultural similarity only in interactions within our very close social network (family, friends), while in professional life, in organizations of any kind, and at public events, we will generally assume we are interacting with socio-cultural strangers with whom we do not share even the most basic assumptions' (p. 5). If this proves to be the case, there will come a point when we no longer expect to encounter 'our own kind' in the political realm (assuming we ever did so in context of the nation-state). Instead, we shall expect, and be prepared for, inevitable encounter with 'the other', and this will undoubtedly have critical consequences for how we view the collective identity on which our political community is based. Rather than seeing this identity as a kind of mystical bond deriving from a shared history, language, culture, or ethnicity and transcending political cooperation, we shall regard it as something to be constantly re-created and renewed in the actual course of political cooperation, as the fruit of repeated attempts to reconcile the diverse, perhaps even contradictory, views of citizens who remain strangers.

What are the implications of this as regards thinking on transnational democracy? As I see it, Meyer's diagnosis of a normalization of socio-cultural difference

highlights two elements that are of major importance in identifying potential non-national forms of democracy. On the one hand, it suggests that we need to rethink the kind of sameness that is requisite for democracy. On the other, it prompts us to review the role which parliamentary politics plays within a democracy: in a context of increasing socio-cultural difference, the role of a democratic parliament would no longer be confined to that of mirroring societal interests and aggregating these into law-giving majorities; parliamentary discourse would have a deeper, integrative function constitutive of democratic political communities. Drawing on Habermas's theory of democracy, I will now explore these two elements in greater detail.

2. Understanding in difference—the epistemic function of democracy

A common interpretation of deliberative democratic theory takes the following form. Deliberative approaches, it is said, see democratic politics mainly as an exchange of arguments aimed chiefly at producing consensual decisions. The function of political discourse—and of parliamentary discourse in particular—is to filter out all non-generalizable particular interests, thus paving the way for decisions that are viewed by all as the best solution to a shared problem. In short, say these commentators, deliberative democrats model democratic politics as a collective quest for consensus driven by the 'constraint-free force of the better argument' (Habermas 1984: 28).

Viewed in this light, there is no doubt that deliberative democratic theory is open to serious criticism—on three specific counts. In the first place—as difference democrats point out—the account it offers of democratic politics appears to be strongly culture-bound: the presumed existence of a rational individual always willing and able to put aside subjective interest and emotion for the sake of the generalizable common good would appear to anchor deliberative democratic theory firmly within Western Enlightenment traditions. Secondly, it views democratic politics through the utopian lens of an 'ideal speech situation' (Habermas) which can never be realized in practice and from which the very core of politics, namely its agonistic and pluralistic character (Mouffe 1999), is absent. Lastly, the presumed nature of politics as a quest for consensus presupposes a high degree of sameness, a strong collective identity. The reasons for this are twofold: only where there is a strong collective identity will citizens of a democracy be willing to relinquish their subjective interests in favour of the common good; and only where such citizens have a strong shared background will anything akin to a generalizable interest emerge in the first place (Scharpf 1999: 7–8). On this view, Meyer's diagnosis of ever more frequent encounters with the cultural 'other' clearly poses a serious problem for a deliberative understanding of democracy. If democracy depends on a high degree of cultural sameness and a strong collective identity of a kind that only the nation has so far been able to provide, the normalization of socio-cultural difference will effectively undermine the conditions necessary for its existence.

This critique is in stark contrast to the view which Habermasian democratic theory takes of the relation between the nation and democracy. According to Habermas,

the idea of the nation acted as a catalyst in the historical development of modern democracies. It sowed the seed of collective emotional attachment, a 'we feeling' that promoted consciousness of the equality of rights in regard to individual freedom and thus helped democratic self-rule gain a foothold amongst the broad mass of the population. In today's democratic societies, however, democratic values are already more or less firmly entrenched. In this context, increasing socio-cultural difference does not pose a threat to democracy; what it does, rather, is highlight the contradictions that exist—and have always existed—between democracy and the nation. From the perspective of deliberative democracy, the normalization of socio-cultural difference strengthens democratic claims for equal rights to individual self-determination (to each according to her own cultural background) and thus encourages movement beyond the rather artificial boundaries of existing national communities. This is not to say that nation-states are in the process of becoming meaningless or dissolving. It means, rather, that increasing experience of socio-cultural difference 'activates' the potentially universal reach of the values of democracy and prompts us to apply them to people beyond our 'own' national community. One likely consequence of this would seem to be a transformation in the perception of the nature of political community. In this sense, the normalization of socio-cultural difference opens up the sealed container of national identity and fosters new and complementary forms of transnational political attachment.

But how do these assumptions about the universal reach of democracy stand up to the criticisms outlined above, according to which deliberative democracy, as a quest for consensus, is either hopelessly utopian or dependent on a 'thick' collective identity—on the idea of the nation? In my view, the key here lies in a correct understanding of the claims of deliberative democratic theory. By this I mean an understanding that refrains from viewing ideal speech situations, (political) discourse, and consensus as elements in a blueprint for an ideal democratic process. In contrast to such overly concrete interpretations—on which the above critique is mostly based—the discourse theory of democracy advanced by Habermas does not seek to provide a model for an ideal democracy. Instead, in its analysis of the development of modern democracy, it suggests that the norms inherent in that democracy to some degree mirror fundamental features of social cooperation.

Most importantly for our purposes, it is not the case that deliberative democracy simply assumes that democratic politics is a quest for consensus or that the function of parliamentary discourse is to filter out non-generalizable interests. Rather, the concept of consensus (in the sense of an ideal speech situation[2]) has its place in an explication of what Habermas assumes to be basic features of language-mediated cooperation. In this context, it is not consensus itself, as a product of cooperation, that is of greatest relevance, but orientation towards reaching it—or, more precisely, reaching a common understanding. The deliberative element in deliberative democratic theory rests on the assumption that social cooperation (and thus also political cooperation) depends on language-based interaction in which the participants ultimately have no other choice than to try to reach a common understanding via an exchange of perspectives. This stance draws on

[2] Given the space constraints here, discussion of the concept of the ideal speech situation must be left for another occasion.

pragmatic philosophy and its account of how we cope with the material and social world. The basic assumption here is that when ego and alter encounter a problem they cannot deal with individually, and for which established routines offer no way through, their ability to find, or rather create, a new solution depends on their exchanging perspectives with a view to reaching a common understanding as to how to do this. Note that this account of cooperation does not presuppose an extensive shared background. Although a degree of shared background is necessary, it is actually the lack of it, in the context of a new and unforeseen situation, that makes orientation to reaching a common understanding a functional necessity and thus unavoidable for cooperation in the first place.

Seen in this light, consensus, in the sense of a coming-to-terms with each other based on a sufficient overlap of existing convictions, is a secondary concern in Habermasian deliberative democracy. Rather, the assumption of an intrinsic individual orientation towards reaching a common understanding—the 'telos' of communication—relates to the creative element inherent in, and constitutive of, language-mediated world-disclosure or social cooperation. Such an orientation is, so to speak, the (only) basic tool available to humans, as societal animals, to cope with the new and the unknown—whether this be a puzzling new natural phenomenon or an encounter with the cultural 'other'.

We are now in a better position to appreciate how Meyer's diagnosis of a normalization of socio-cultural difference intermeshes with the assumptions underlying deliberative democratic theory. Deliberative democratic theory views the institutions of democracy as mechanisms for the exercise of stabilized societal cooperation in as peaceful and just a way as possible. On this view, democratic politics is a routinized and stabilized way of coping with the new and the unknown on a broad, societal scale. Having a strong shared background does not appear to be a necessary condition of democratic cooperation. The decisive condition, rather, is the weaker one of shared perception of a common problem and trust that the other is willing to engage peacefully in joint problem-solving. Where such a condition pertains, even if there is strong cultural divergence and no common background, repeated interaction on the basis of a shared concern to arrive at an understanding will result in the gradual build-up of shared background knowledge. In Meyer's terms: '[T]he temporal-sequential and bodily structures that humans share existentially appear to provide a common ground for interaction under conditions of socio-cultural difference' (p. 17) and 'in the course of repeated interaction, stocks of knowledge become more and more inclusive, flexible, and—eventually—cosmopolitical (in other words sensitive to, and competent in regard to, socio-cultural alterity)' (p. 14).

Ideally, I should here cite further evidence in support of these far-reaching assertions, but considerations of space preclude an account of the Habermasian chain of argument linking the analysis of language-based cooperation and the institutions of modern democracy.[3] I will therefore confine myself to a few brief remarks about one other aspect relevant to Meyer's thesis of a normalization of socio-cultural difference and the prospects for transnational democracy.

The shift in perspective implied in the deliberative account of democracy crucially affects our understanding of the function of parliaments in democratic politics.

[3] For a more detailed account, see Gaus (2009).

According to a widely held view in political science, democratic parliaments are places where the full range of societal interests are promoted by representatives of the people. In this scheme of things, the main aim of parliamentary politics is to aggregate these interests into governing majorities, thus enabling the very functioning of the political community. This voluntaristic understanding of parliamentary democracy doubtless has a place in the overall scheme of things, but the deliberative account stresses another, more epistemic—and often neglected—side of parliamentary politics. This relates not to the elimination of non-generalizable interests through parliamentary discourse, but to what might be viewed as the heuristic function of public deliberation as conducted in and around parliamentary politics. Even within a nation-state democracy—in other words, where there is a strong national identity—the view that parliamentary politics is concerned chiefly with the aggregation of given societal interests into majorities neglects the crucial function which such political activity has in dealing with the ethical and moral issues associated with policy decisions. In such cases, the parliamentary process serves the function of facilitating an exchange of views, with the initial aim of establishing a common understanding of what is at stake, who is concerned, why they are concerned, and how. Clearly, these two functions—aggregation to form governing majorities and the attainment of common understanding via a public exchange of views—are in a state of some tension vis-à-vis one another. It may reasonably be assumed that for major redistributive issues, a stronger form of 'we identity' is needed than the one suggested above (Scharpf 1999). That said, a democratic parliament also (and perhaps more importantly) functions as the institutionalized societal space within which the common standpoint of the political community is repeatedly established and then subjected to challenge, in a process of open deliberation. Democratic politics does not presuppose a high degree of sameness here. On the contrary, a democratic parliament may be seen as an institutionalized public meeting-place where a shared background, rather than being a precondition for mutual dealings, actually grows out of repeated interaction and exchange between societal views that either simply conflict or else are culturally alien to one another.

3. Conclusion

My aim in this brief response has been to show how a future 'normalization of socio-cultural difference', as posited by Christian Meyer, might be conducive to the development of new forms of transnational democracy. In an interpretation of the Habermasian approach that runs counter to the widespread criticism of deliberative democracy, I have suggested that democratic politics should be viewed not simply as a struggle for majority but also as driven by an over-arching logic of understanding across difference.

Such a view allows us to see democratic parliaments as public meeting-places where diverse, contradictory, and even culturally alien societal views can encounter one another. In this scheme of things, the function of democratic parliamentary politics (or at least one of its functions) is to serve as a forum for encounters with the other, for the exchange of perspectives, and for the raising of awareness in regard to the expectations and needs of others—all as a means of reaching a

shared standpoint on the particular problem to be solved and the possible ways of solving it.

Clearly, if transnational policies were based purely on transnational majority-decisions, the absence of a common identity would present a major challenge in terms of garnering the requisite public support. However, even under conditions of socio-cultural difference, the heuristic function of a democratic parliament could produce an integrative effect. In a forum such as a transnational—or indeed global—parliament, the endeavour to secure mutual recognition is likely to result in the creation of precisely the kinds of inclusive, flexible, and ultimately cosmopolitan stocks of shared knowledge described by Christian Meyer.

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On Human´s Adjustability to 'Alterity' – Can Global Cooperation within a World Society Be Successful?

Commentary by Dirk Messner

The Käte Hamburger Kolleg / Centre for Global Cooperation Research (KHK/GCR) researches the possibilities and limits of global cooperation in a developing world society. Without a new quality of cross-border cooperation, the growing global interdependencies will change into global risks. One of the great challenges of the 21st century will be in inventing institutions and ways of proceeding to stabilise the global commons and to sustainably administer or organise them. This holds for the climate system as well as other sub-systems of the Earth system, the international financial markets, global infrastructures (such as the Internet and other communications networks, traffic systems) the world economy depends on, as well as for an international political system providing for peace, security and a way of living together which is based on rules. To make global cooperation happen, mankind must learn to understand itself as a (risk) community with a common responsibility for the maintaining of the global commons. Thus, the success of global cooperation depends not only on interest and power structures but also on man´s and the societies´ capability to produce social innovations favouring cooperation and social interaction at a worldwide scale. The creation of a culture of global cooperation means a new stage of the development of civilization in the history of mankind.

In the context of many national states and – to limited extent – in the context of the European Union, densely woven social infrastructures which favour cooperation (such as we-identities, shared normative and cognitive role models, grown cultural understandings, common institutions which are perceived as being legitimate) have developed. At the level of developing world society these 'densely woven cooperation cultures' are confronted by 'fragile and thinly woven cooperation cultures'. Can humankind be successful, under conditions of 'cultural hybridity', much 'alienness' and 'alterity' among the almost 200 national states and given the sheer complexity of cross-border social networks, with developing patterns of global cooperation to govern globalisation? This question is even more urgent as, coming along with globalisation growing ever faster, the western predominance over the international system which consisted since the Industrial Revolution seems to come to an end. 'The West' will have to learn how to appropriately acknowledge the points of view, interests, role models, cultural identities and historical experiences of non-western countries if worldwide cooperation is to have a chance. Within a post-western world order actors who often do not know much about each other and have only little experience with cooperation on an equal footing must establish cooperative relationships.

Thus, the question about the possibilities and limits of global cooperation also means asking about if and how soon humans are able to adjust to radically changed

conditions. Will cultural diversity, the multi-levelled differences of non-western actors, the social complexity of worldwide networks within which the most different interests, role models, systems of norms, values and rules encounter each other, prevent man from driving on global cooperation in a developing world society? By globalisation, are we coming to the social limits of human´s ability to cooperate?

Of course, Christian Meyer is not able to give a final answer to these fundamental questions. But his work does change our view at the basic conditions of social interaction for the development of global cooperation structures. Apart from globalisation, which forces humans to get along with each other within internationalised contexts or even to jointly solve problems, Christian Meyer researches two other mega-trends which will result in far-reaching changes of the social interaction between humans: the growing number of people suffering from dementia in many societies as well as the growing significance of artificial intelligence in modern societies. Christian Meyer believes us humans to be capable of coping with all three challenges. The historical, social-psychological, sociological and anthropological arguments on which he bases his optimism are multi-levelled and worth considering. Already the fact that these three trends are compared to each other comes as a surprise!

The insight drawn from Christian Meyer´s considerations – surprising from the point of view of cooperation research – is: it may well be that dealing with a growing number of people suffering from dementia as well as human´s interaction or even melting to one with various kinds of artificial intelligence will confront individuals and human societies with much bigger challenges than the interaction of people and attempted cooperation between actors within delimited, globalised spaces. Given the dementia problem, which is of growing significance in many societies, and given the phenomenon of artificial intelligence, in Christian Meyer´s view the challenges man is confronted with when dealing with 'alterity' within global cooperation networks are less significant. If we share Christian Meyer´s optimism regarding human´s adjustability and capability of social learning, it should be possible to successively develop the social infrastructures and foundations of global cooperation. If we do not share his optimism, the parallelity of globalisation, increasing dementia and growing significance of artificial intelligence might bring rough times for humankind and might result in dangerous processes of social disintegration.

Thus, why is it that dementia and artificial intelligence as well as human´s ability to deal with alterity are a bigger challenge to mankind than cooperation within delimited spaces? Meyer is supplied with convincing arguments: in 2060 may be up to 5% of Germany´s population will suffer from dementia. Society would have to learn how to integrate a great number of people who have lost essential characteristics of grown-up humans: cognitive skills, memory, social skills when it comes to dealing with other people, ability to self-determination. From this there result fundamental questions: which rights will this large group have? How could we learn to deal in a dignified way with people we know or even with those we are not familiar with who have lost essential elements of what makes us human? Will we have to newly define 'being human'? How will it be possible to avoid marginalisation and discrimination? Much suggests that it might be easier to initiate social interaction between people from India, Ghana, Germany and Uruguay in the context of trans-national networks than social interaction between people

suffering from dementia and 'healthy people' in Germany. In such cases, 'alterity' may be much more insignificant in trans-national contexts than within local spaces.

In 2001, 17 million services robots worldwide were employed in households, at hospitals and enterprises. Until 2015 another 26 million of these machines, equipped with artificial intelligence, are supposed to be employed in public and private services as well as in education. Furthermore, there is a trend of implanting computers for the optimisation or healing of humans into the latter. Possibly, in the future the brains of people suffering from dementia may be changed by way of computer chips. It might be that human and artificial intelligence will form an immediate symbiotic relationship. The governments of Japan and South Korea are working on programmes for a 'human-robot coexistence society'. How will man, his/her way of thinking and acting be changed by artificial intelligence? Which kinds of artificial intelligence will man accept in which fields of society or not? Will artificial intelligence be easier accepted if it appears as human as possible, or is it just the other way round, will it more easily be accepted if its alterity compared to man stays obvious? How far will man drive the melting into one of brains and computers, and for which purposes? What would that mean for our understanding of being human, of human dignity, of our idea of the equality of man? There are no historical models for such a world. It might be that humankind will create a new age with 'human-machines' or 'machine-humans' coexisting with 'natural humans'.

Against this background, the demand of creating cooperation within globalised spaces and networks looks less spectacular. After all, it is 'only' about 'scale', about new degrees of human interaction; the respective basic patterns of social complexity resulting from globalisation have long been known to man. Since the Neolithic Revolution humans have learned how to get along within ever larger and more heterogeneous groups (from small groups or villages as far as to large national states and international organisations), with cultural diversity and alterity as well as with new role models, values and ever more complex interests. The history of human civilization and the history of the development of cooperative relationships between humans is a history of the increase of social complexity – temporary setbacks (e. g. as a result of war) are not at all ruled out in this context. And what is to stop man from continuing or, so to speak, 'completing' this process, now in the context of unfolding world society? Or will the new 'quantity' of social complexity in a globalised world turn into a new quality which might overtax man? Christian Meyer does not find any indication for the latter.

We need not necessarily agree with Christian Meyer´s conclusions, however in any case his arguments are worth considering. Furthermore, two of Meyer´s observations and hints regarding man´s dealing with 'alterity' are of interest, no matter if it is about globalisation dynamics, dementia or artificial intelligence. Firstly: the easiest way for humans to learn how to cope with 'alterity' and 'alienness' is simply to deal with them. Common values, rules, perceptions as well as new, sustainable, peaceful patterns of interaction and cooperation do not first of all develop 'in the laboratory', 'at the desk', in the context of academic debating but by those 'being different' dealing with each other. Concerning global cooperation this means: for us humans the easiest way to learn how to cooperate is cooperation. The social infrastructure of cooperation develops successively. The essential mechanisms of cooperation (Messner, Guarín and Haun 2013) cannot be created in real time, they must be 'made' by way of human acting.

Secondly: concerning all three cases discussed by Meyer, a prudent way of dealing with alterity requires a kind of man who is not characterized by narrow rationality, cognitive skills and utilitarianism. Both when it comes to dealing with dementia and with artificial intelligence as well as with human interaction within globalised spaces, humanity, empathy, human sympathy gain significance. People suffering from dementia, who have lost their cognitive skills, may well be approached by way of emotions, human sympathy and compassion. When it comes to dealing with artificial intelligence, humans must clarify, beyond man´s cognitive skills, what is 'human' and how this core of humanity could be protected. When considering the basic difference between man and highly intelligent computer systems, we think of social skills such as empathy, humanity, emotion. The interaction of humans within globalised spaces may be affected by different value systems, historical experiences or social role models. Referring to the fundamental common grounds of all people of developing world society (human dignity, compassion, emotion, capability of empathy) may be helpful when it comes to dealing with the various kinds of 'alterity'. In the past few decades the social sciences have been dominated by approaches which were characterized by a narrow concept of man, while ignoring or hardly mentioning these social skills. According to Christian Meyer, the utilisation-maximising individuals of rational choice theory or homo economicus of neo-classical economics may be supposed to be completely overtaxed by the social challenges of globalisation, dementia and artificial intelligence.

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