



DIE ERDE

Journal of the  
Geographical Society  
of Berlin

# Challenging the current climate change – migration nexus: exploring migrants' perceptions of climate change in the hosting country

Corinna de Guttery<sup>1</sup>, Martin Döring<sup>1,2</sup>, Beate Ratter<sup>1,2</sup>

<sup>1</sup> Helmholtz-Zentrum Geesthacht, Institute for Coastal Research, Department Human Dimensions in Coastal Areas, Max-Planck-Str. 1, 21502 Geesthacht, Germany, corinna.de.guttery@hzg.de, doering@metaphorik.de, beate.ratter@uni-hamburg.de

<sup>2</sup> University of Hamburg, Institute of Geography, Bundesstr. 55, 20146 Hamburg, Germany

Manuscript submitted: 04 August 2015 / Accepted for publication: 11 March 2016 / Published online: 30 June 2016

## Abstract

*Along with the growing scientific and political concern on global warming, the relationship of climate and migration is framed as cause and consequence. Alarmist numbers of mass migration and related conflicts currently represent the main scientific narratives merging the issue of migration and climate change. This paper takes a different and explorative perspective: it suggests that scientific discourses on migration and climate change should be reframed by taking into consideration the diverse 'knowledges' offered by migrants. Employing an experimental approach, we aim at filling this gap in research and introduce an empirical perspective on climate framings among Italian and Chinese citizens in the local context of the city of Hamburg (Germany). Qualitatively analysing semi-structured interviews, the paper conveys an in-depth analysis of how Italian and Chinese migrants frame climate change and, furthermore, explores philosophical backgrounds informing them. We start with a theoretical and methodological outline on undertaking research with migrants and then turn to an empirical analysis in which we examine and discuss four prevailing categories found in the course of our investigation. The final section summarises the results and reflects upon the methodological and theoretical approach applied which refers to the relevance of migrants as active actors in local adaptation and mitigation processes of the hosting country.*

## Zusammenfassung

Im Rahmen einer intensivierten wissenschaftlichen Analyse des menschlich verursachten Klimawandels erfährt auch die Beziehung zwischen Klimawandel und Migration in den vergangenen Jahren eine zunehmende wissenschaftliche Beachtung. In vielen Fällen wird im wissenschaftlichen Diskurs Migration kausal als Konsequenz des Klimawandels verstanden und – nicht ganz unproblematisch – mit alarmierenden Zahlen von möglichen Klimaflüchtlingsen verbunden. Jenseits solcher Bedrohungsszenarien möchte der vorliegende Beitrag für die Relevanz des Klimawissens von Migranten sensibilisieren und dessen Potenziale für einen produktiven Klimaanpassungs- und -mitigationdiskurs im Gastland erkunden. Ausgangspunkt ist ein erfahrungsbezogener Ansatz, mit dem empirisch unterschiedliche Klimarahmungen von italienischen und chinesischen Migranten im lokalen Kontext der Stadt Hamburg analysiert wurden. Mit Hilfe semistrukturierter Interviews wurden neben kulturellen Bedeutungszuschreibungen durch eine Tiefenanalyse auch deren philosophische Hintergründe und kulturelle Weltbilder offengelegt. Der Beitrag beginnt mit einem theoretischen und methodischen Überblick, auf den eine umfassende empirische Analyse der vier vorgefundenen

de Guttery, Corinna, Martin Döring and Beate Ratter 2016: Challenging the current climate change – migration nexus: exploring migrants' perceptions of climate change in the hosting country. – DIE ERDE 147 (2): 109-118



DOI: 10.12854/erde-147-8

Klimadiskurskategorien folgt. Die Ergebnisse werden abschließend vor dem Hintergrund einer methodischen und theoretischen Reflektion zusammengefasst und im Hinblick auf die Rolle von migrantischem Klimawissen für Anpassungs- und Mitigationsmaßnahmen im Gastgeberland diskutiert.

**Keywords** Migration, cultural perception of climate change, mitigation, adaptation

### 1. Introduction: migrants and climate change

In the current discussion revolving around climate change and migration, migrants are either framed as victims or as a threat for their hosting country: in most cases, they are not conceived as individuals and appear as numbers in statistical reports. In the present paper, we want to challenge this view. Migrants are an integral part of society as they constitute 20.5 % of the whole population in Germany (Bundesamt 2014). It is all the more astonishing that migrants are overlooked in the scientific literature on climate change perception as they potentially hold innovative knowledge skills that they can bring to their hosting country. To address this gap, we investigate the different knowledge dimensions and structures underlying the perception of climate change among Italian and Chinese migrants in Hamburg (Germany). Although individual framings have gathered interest in recent years and the importance of social and cultural dimensions of climate change in society has been recognized (Hulme 2013), factual methodological challenges have limited the investigation of cultural climate framings. The mainly applied quantitative approaches with predefined categories (Wolf and Moser 2011) did not offer the possibility for an in-depth understanding of the social and cultural processes engendering and structuring individual climate change framings. Consequently, a qualitative and culturally sensitive approach appeared to be relevant in the context of the present study. As we will demonstrate, semi-structured interviews provide the interviewee with the opportunity to elaborate on the abstract entity of climate change, while they allow the interviewer an in-depth analysis of underlying worldviews. The aim of the paper generally is twofold: addressing the methodological challenges of cross-cultural studies by developing a comprehensive qualitative approach and applying it in a detailed analysis to how Italian and Chinese migrants frame climate change. More precisely though, it addresses four aims: it provides a theoretical discussion of the scientific discussion on climate change induced migration against which a method to study culturally differing climate change perceptions is developed. This approach is empirically applied and finally discussed with regard to

different cultural perceptions of climate change and their potentials for reflecting different kinds of climate change adaptation and mitigation. In brief, the paper is an explorative but empirically grounded attempt to re-frame migrants as actors who can productively contribute to addressing the challenge of climate change.

### 2. A theoretical perspective for analysing migrants' concepts of climate change

Since the start of the 1990s, the major issue of climate change stands in direct relation to migration. The first IPCC report stated that "[...] the gravest effects of climate change may be those on human migration [...]" (Watson et al. 1997: 103) From then, the nexus between climate change and migration has led to different interpretations in science, often addressing alarmist accounts of security (Bettini 2013). Koser (2007: 1), however, claimed that immigrants were "[...] entrepreneurial and dynamic members of society", they could conceptually enrich discourses on climate change and contribute to climate-related solutions in the hosting country. This aspect has also recently been acknowledged by the IPCC (Adger et al. 2014) that has called for case studies that explore positive effects migration might hold. Such aspects have also been addressed by authors such as Barnett and Webber (2010) who referred to the fact that current migration policies often impede the improvements inherent in migrants. More recently, Sakdapolrak (2014) reframes the migration-climate change nexus by investigating the contribution of migration for improving social resilience to climate change in the case of Thailand. Furthermore, along the same conceptual lines, Klocker and Head (2013) challenge the population-environment debate by suggesting greater openness to ethnically diverse practices of sustainability in Australia. These studies pave the way towards an innovative approach that analytically recognizes human-environment interaction and discloses the positive role of migrants for enhancing social resilience.

Nevertheless, many of them remain too theoretical and miss to examine possible ways to empirically investigate migrants as knowledge mediators. Ecolinguistic

research (Harré et al. 1999; Fill and Mühlhäusler 2006) represents in this context a relatively new approach which applies the concept of ecosystems or biological systems metaphorically to language (Trampe 1990). The aim of the analysis consists in investigating the structure and dynamics of language-world systems to reveal the role of language in perceiving environmental issues (Fill 1996) and for developing solutions for ecological or environmental problems (Fill and Penz 2007). Language can – following an ecolinguistic approach – be understood as an experientially and dialectically moulded filter through and by which the natural environment is perceived and shaped at the same time. Such a fine-grained ecolinguistic double-looped and culturally sensitive analysis holds the potential to tackle linguistic mechanisms used to bestow climate change with meaning. Following an ecolinguistic understanding, language is consequently not conceived as a self-contained entity that helps to perceive and frame climate change, but it should rather be understood as a culturally embedded structure that dialectically shapes and is shaped by the outside world (Nisbett 2003; Northoff 2014). In this sense, language and linguistic structures may also be envisaged as forms of life (Wittgenstein 2009: § 23) that develop varying but culturally grounded worldviews of and on the natural phenomenon of climate change. Hence, there is not one singular perspective on climate change but it rather appears to be endowed with and subconsciously shaped by its nature cultures (Latour 1993). Against this theoretical framework, the language of migrants represents an analytical unit which can help to reveal the framings and worldviews nestling in their cultural conception of climate change.

### 3. Method: concealed worldviews in interviews on climate change

Analysing migrants' perception of climate change bears at least two methodological challenges: cultural sensitive data gathering and their in-depth interpretation. The qualitative method of semi-structured interview provided a methodological contribution to meet this double challenge. The present paper is part of a larger study that comprises the main migratory groups in the City of Hamburg. For this paper, however, we focus on the Italian and Chinese communities as most divergent in their worldviews and each in their specific way involved in the discussion of climate change and migrants. The interviewees were 9 Italian (3 women and 6 men, age range: 35-59, length of residence in Germany: 2-40 years) and 9 Chinese migrants (8 women,

1 man, age range: 26-46, length of residence in Germany: 2-23 years). Due to the specific focus of the research, data about reasons for migration were not collected, also assuming that migration factors are often multiple and difficult to detect. The two groups were interviewed in order to develop a contrasting data-set based on the assumption that members of individualistic and collective societies hold converging but also diverging climate change framings. In order to secure the entrance to the migrants' community, minimize language barriers and provide cultural sensitivity, each interview was conducted by a native speaker in her migrant community. Most of the semi-structured interviews lasted between 30 and 45 minutes and started with the open question 'What is climate change for you?' This initial question was followed by questions that build on each other such as 'What are the impacts of climate change?', 'What are the causes of climate change?', 'Which measures could be taken to tackle it?' 'Who is in charge of it?' 'What sources of information do you use to know more about climate change?', 'How would you assess the quality of information?', and finally 'Is there anything more you would like to add or comment on what we have discussed?' All interviews were transcribed by the two native-speaker interviewers, who have both a background in geography and previous experience in conducting interviews. In the Italian case, interviews (IT\_HH) were transcribed in Italian and analysed subsequently by the first author of this paper, while interviews with Chinese migrants (CH\_HH) were first transcribed in Chinese and then translated into English by the bilingual interviewer. This translation into English proved to be difficult as many of the Chinese notions and their underlying semantic concepts cannot directly be translated. The translation of the Chinese interviews consequently followed the logic of a grammatically correct verbatim translation which was complemented by comments explaining the meaning of certain phrases to secure intercultural understanding.

After the transcription, the cultural-sensitive analysis was applied and data interpretation followed an adjusted interpretation scheme in order not to get trapped in imposing stereotypes. The interpretation scheme first included the development of categories following the requirements as outlined in Grounded Theory (Charmaz 2006; Corbin and Strauss 2008). This analysis was carried out separately to ensure intercoder reliability and yielded 12 converging analytical categories after a discussion of all interview excerpts allocated to them. Although the first results might suggest that there are considerable overlaps between the overall

Chinese and Italian framings of climate change, significant differences nestle in the linguistic structure of different categories. Thus, the second step consisted in a fine-grained analysis of the language deployed in each category. This analysis was accompanied by the reading of scientific literature dealing with environmental ethics and the role of Daoism and Confucianism in contemporary China as background information (*van Ess* 2009; *van Ess* 2011; *Callicott and Ames* 1989; *Xia and Schönfeld* 2011; *Kuo* 2011). The results were presented to the native interviewer for critical inspection. The aim of this endeavour was to avoid over-interpretation and the ascription of stereotypes. Effectively, the expert discussion of the categories and their internal structure confirmed some results while it prevented over-generalisation in other cases. In sum, the overall approach proved to be a fruitful way of engaging with the interview material in a methodologically sound and culturally sensitive way. For the aim of this paper we will focus on four of the 12 categories found: General framing of climate change, Causes and consequences, Responsibilities for climate change and Typical measures of mitigation and adaptation. These categories provide the best insight into the con- and divergences between both ways of framing climate change.

## 4. Results and discussion

### 4.1 Migrants' perspectives on climate change

For the detailed analysis of the main categories encountered, we start with the General framing of climate change among Italian and Chinese migrants as it represents the entry point of the interviews and provides a first insight into how the interviewees frame and relate themselves to climate change. Bearing in mind that climate change itself is a scientific and abstract construct, it is of utmost importance to study and analyse how and by which means people holding different cultural backgrounds ascribe meaning to it and whether certain culturally informed patterns could be revealed. This aspect has rarely been addressed in the majority of surveys conducted with migrants on the perception of climate change. *Taylor et al.* (2014), for example, have demonstrated that the abstract entity of climate change is often correlated with the change of seasons or a-typical weather patterns. These quantitative results are in line with our own taken from interviews as they share the general tendency to frame the abstract entity climate change by way of more concrete and experienced phenomena. However, a strong convergence

between the two groups was found which is based on framing climate change with the help of changes in seasonal temperatures and increasing rainfalls:

1. "In summer it rains so much, winters became mild. There is no more the cold there was before" (2.IT\_HH).
2. "What I can feel is that in recent years, the winter is getting colder and colder and the summer is getting warmer and warmer. The springs and the autumns are getting shorter and shorter. That's the climate change that I can feel" (7.CH\_HH).

Yet, there are some differences as some of the Chinese interviewees conceive tsunamis and earthquakes as typical phenomena of climate change.

3. "Then there are unusual earth crust collisions. Tsunamis, earthquakes are happening more and more frequently" (7.CH\_HH).

Interestingly, and in accordance with research carried out by *Toan et al.* (2014) and the UNESCO (2014), tsunamis, earthquakes and typhoons are prototypical phenomena used to refer to climate change: they represent knowledge reservoirs of "events that are recent, unusual, [...] personally experienced" and meaningful (*Taylor et al.* 2014: 2). Hence, in our case study, these phenomena are indications of climate change belonging to the collective memory of the Chinese community in Hamburg: they are culturally grounded interpretative repertoires (*Wetherell and Potter* 1988) to construct climate change. Although such interpretations might appear to be misconceptions of what climate change scientifically is, it is these cultural constructions that we aim to explore in the following sections as they go beyond a scientifically legitimated judgment and require in-depth reflection on the cultural knowledge dimensions revolving around climate change. It thus appears useful to study in the next section the different causes and consequences of climate change. The patterns of meaning underlying these concepts con- and diverge among Chinese and Italian migrants and display philosophical worldviews.

### 4.2 Conceptualising causes and consequences of climate change

Besides the aspect of what climate change represents, important questions address its causes and resulting



consequences. When asked, both Italian and Chinese interviewees intuitively referred to CO<sub>2</sub> emissions and a variety of typical anthropogenic causes such as car driving. However, once the process of reflection was instigated in the course of the interviews, interviewees specifically referred to civilization and industrialisation as main causes for climate change. These concepts were refined and engendered with individual experiences and moral values during the interview. This becomes particularly apparent in the following quote, where an Italian migrant offers an almost all-encompassing explanation for the causes of climate change in relation to his own behaviour, and with strong reference to climate justice:

4. "The causes are the excessive use of energy and its uneven distribution at a global level. [...] We have houses that, in the global distribution of resources, are shameful as in the end, me, I live in a house which is irresponsible to the energy need of an average world citizen" (9.IT\_HH).

What we witness here is, first, a moral argument addressing the aspect of climate justice and, second, a critical self-evaluation. The conceptual merging of global and local scales against a cause and consequence image schema (*Johnson* 1989) blends the global into the local and vice versa and implicitly establishes an explanatory relationship between an actor and climate change: the individual. Differently, one Chinese interviewee states that climate change exists:

5. "[...] because of industrialization. Because industrialization has caused air pollution by emitted gases from cars, for instance. I think it's the big problem brought about by modern civilization" (10.CH\_HH).

This quote is based on the same cause-consequence schema as the previous one but one has to be careful with comparing them. Although terms such as "industrialisation" and "civilisation" appear in other Italian quotes, in the Chinese interviews they remain on a generic level and are not individualised. It is striking that interviews with Chinese migrants mainly display comparable structures that lack the recurrent individualised cause-consequence schema encountered in the interviews undertaken with Italian migrants. It could thus be concluded that both Chinese and Italian migrants identify industrialisation and civilisation as causes for climate change. More specifically however, it appears that both ways of interpreting

climate change are based on different cause-consequence schemas: whereas the Italian answers contain compounds and adjectives such as "excessive use", "shameful" and "irresponsible to the energy need" that express criticism and individual moral scruples, comparable structures and the individual dimension are simply absent in the Chinese interviews.

Besides the previously depicted aspects, clear differences exist in the interpretation of climate-induced consequences: Italian migrants highlight climate-induced migration while Chinese citizens continuously emphasize the negative impact of climate change on the economy. Such views contrast with current surveys on the population of Hamburg (*Ratter et al.* 2012) that identified storm surges as the main hazard due to climate change. This result is particularly interesting compared to the answers provided by our interviewees. As already mentioned, Italians declare climate-induced migration as an important social consequence:

6. "It [climate change] will cause only few human lives [...]. And then even if the water will rise some centimetres the consequences will be quite bearable. But what is strongly happening is the issue of populations in lands where they cannot survive due to this climate change" (1.IT\_HH).

The natural impacts such as sea level rise are depicted here as manageable while the probability of climate induced migration is metaphorically estimated as strong ("strongly happening"). It is astonishing that climate-induced migration does not appear as a main consequence in previously published surveys (*Lorenzoni and Pidgeon* 2006; European Commission and European Parliament 2009). With regard to the specific Italian situation and in view of the tragic events around the island of Lampedusa and the massive Italian media coverage on drowned refugees, local and more familiar events may have once more become an interpretative repertoire to render abstract climate change tangible.

In contrast to these framings of climate-induced migration as a consequence, Chinese migrants thematically emphasize the consequences of climate change for the economic sector. Quotes like the following appear quite often. In most of them, a more or less holistic perspective on the cause and consequence relationship between climate change and the economy is detectable.

7. "Like oil price, commodity price, have some relations with the climate. There must be correlations,

if this year there is a severe drought, then the production of wheat will be less, the price will for sure increase" (7.CH\_HH).

What becomes apparent in this and other quotes is a specific mindset that is based on the idea of mutual interrelatedness: The impact of climate change on the functional relation between objects is emphasized rather than the impact on objects themselves. As investigated inter alia by *Nisbett* (2003), *Xia* and *Schönfeld* (2011) and *Kuo* (2011), 'Easterners' and 'Westerners' differ substantially in their conceptualisation and interpretation of phenomena such as climate change. While Westerners' atomistic approach focuses on one or more objects and their impact on a process, Chinese migrants in Hamburg display a holistic understanding starting with the all-comprising phenomenon and focus on the relationship between objects and the changes they bring about. This difference is reflected in the narrative structure of the Chinese interviewees that explicitly emphasize the interrelation between oil price, drought, climate change and the consequences it brings about. In contrast, the Italian quote focuses on single and independent objects such as temperature, sea level rise, migration and their impact on climate change. As a preliminary result, one can conclude that holistic and atomistic mindsets of conceptualising causes and consequences affect the Chinese and Italian ways of framing climate change. The analysis, hence, discloses different cultural models (*Shore* 1996) of climate change that may also shape concepts of responsibility, adaptation and mitigation.

#### 4.3 Ascribing responsibilities for climate change

In Western tradition, concepts of causes and consequences are closely connected to the idea of individual and/or collective responsibility (*Nisbett* 2003). In brief, the agent who instigates a process has not only to cope with the outcomes, he or she is also morally accountable for them. On the other hand, the Chinese notion of responsibility is based on a completely different rationale with regard to the conception of the 'I'. In Chinese philosophy, there is still to be detected, though not completely, the influence of Confucianism (*van Ess* 2009, *van Ess* 2011) in which the self is conceived as a part of a larger organic whole between heaven, the earth and humanity: The individual is related and constituted by the interrelation with these contextual elements. In brief, the self has limited power and authority to take over responsibility. Only

wise men hold the capacity to understand the whole and are legitimated to make decisions and suggest actions or measures to be taken. The individual thus holds a different role compared to western ideas of the self and this becomes apparent in the main bulk of the interviews. One Chinese interviewee affirms that "[...] we have been taught that one individual is very insignificant" (9.CH\_HH). Such culturally engrained assumptions about the impossibility of individual competency obviously hold consequences for acting against climate change because the individual cannot be made morally accountable. In fact, the transcripts show that Chinese interview partners mainly reject individual responsibility and assign it to the government that is in charge of finding solutions:

8. "If you want the masses to do something, then the government has to push it. [...] The masses, [...] they need the government to function as a platform to guide them!" (5.CH\_HH).

What appears to the European reader at first glance as an authoritarian governance process changes if one considers the previously mentioned Confucian conception of government that is based on a powerful and leading figure that possesses superior wisdom and provides moral guidance (*Shi* and *Lu* 2010). This understanding is clearly reflected in the above quote where phrases such as "pushes the masses" and "guides" use verbs of movement and directionality metaphorically implicating the search for the right climate policy.

While the Chinese migrants' concept of responsibility is clearly relegated to the government that is granted trust on the basis of a weaker self-conception, Italian excerpts exhibit the individual as responsible for climate change. In contrast to Chinese conceptions, Italians frame the government as a separate entity or as an untrustworthy and self-centred caste that does not represent citizens' interests:

9. "At the end, every person is responsible. So I think I had my stake in the change, in a negative way but also, in the last years, [...] I know I am contributing positively. [...] Who has the power in their hand, instead of taking care about their [politicians] own pockets; they should do what they [politicians] really are supposed to" (3.IT\_HH).

Two different aspects can be shown in this quote: First, the concept of the self as the responsible and active unit for taking action against climate change, and second,

politicians as a socially corrupted group, an aspect which is linguistically expressed by the metaphor “care about their own pockets”. In brief, a responsible self starkly contrasts with an irresponsible government.

The two previous quotations provide evidence for different philosophical traditions and cultural patterns structuring the concept of responsibility and the self with regard to climate change. In this context, climate change is not only constructed via a restricted range of cultural reservoirs, but it is also suffused with underlying worldviews and philosophies. Ignoring these aspects engendering the concept of responsibility would actually mean to miss entry points towards culturally contextualised approaches of mitigation and adaptation. The concept of responsibility is deeply and differently interwoven with the concept of climate change influencing conceptions of mitigation and adaptation.

#### 4.4 Different cultural perspectives on adaptation and mitigation

After having analysed the different and partly overlapping concepts of responsibility between Italian and Chinese migrants in the previous chapter, we now turn to the study of ideas of mitigation and adaptation distributed among them. Taking a closer look at the interviews, it appears that knowledge about climate-related issues results from a combination of worldviews imported from the home country and new practices encountered in the hosting country. More precisely put, there is an interaction between migrants' past memories and present practices encountered in the hosting country. This integration obviously affects ideas revolving around measures of mitigation and adaptation and surfaced also in narratives meandering between references to the home and the hosting country. Preferred solutions for dealing with climate change could be deducted and certain lessons to be learnt were explicitly mentioned.

The first lesson concerns the fact that among migrants the hosting country represents a role model for “best practice” with regard to adaptation and mitigation. Interestingly, fairly emotional statements appeared (“I am very proud”).

10. “I am very proud on what Germany is doing, that they closed the nuclear power plants, they are starting producing wind and solar energy”(2. T\_HH).

The closing down of facilities such as nuclear power plants were in many cases used as narrative starting points to positively depict the German turn towards a more climate-friendly energy policy. While such aspects quite often emerge in the context of the Italian interviews, Chinese migrants develop a different line of argument: Environmental protection is framed in terms of mitigation. Consequently, practices such as the recycling of plastic bottles are conceived as mitigation measures:

11. “One thing I feel very good is that in Germany, they recycle plastic bottles and cans. [...] Before people just threw them away, into the trash bins [...]. I think similar actions should be promoted in China [...]” (3.CH\_HH).

Such quotes exhibit, besides the fact that they are estimated as applicable in the home country, a culturally different way of conceptualising mitigation as it is based on a relational way of problem solving: Human behaviour helps to keep the environment in balance with the other elements of the organic whole. Against the backdrop of a concealed Confucian mindset, mitigation is thus interpreted as a means to achieve balance and harmony by environmental protection. This argumentative strategy stands in contrast to the Italian way of framing mitigation which is based on categorical and functional relations. In addition to such differences, it becomes evident that the city of Hamburg and Germany represent paradigmatic reference points for a good mitigation-oriented climate change policy. What is interesting in this context is the fact that the hosting country in the majority of the cases becomes a source of inspiration for measures to be applied in the home country.

The second important lesson to be learnt touches upon the cultural understanding of nature, which has important repercussions on choice and social support for mitigation and adaptation measures. As already seen, Confucian philosophy partly provides an important though unconscious interpretation frame for mitigation and adaptation. Technology plays a vital role as it is seen as a decisive tool to re-establish harmony. Thus, technology is not interpreted as the opposite of nature or the cause of environmental problems, but rather as contributing to the solution of such problems. This explains why most of the interviews contain relational narratives infused with technological references (“drainage system” or “filter systems”, 4.CH\_HH) or regulating practices (“restrictions shall be given” or “production shall be reduced” 4.CH\_HH).

Here, the same interviewee explicitly claims that once a certain degree of technological development is achieved, fewer resources will be exploited, finally resulting in better environmental conditions:

12. "I feel that environmental problem is also somehow a technology problem. Because sometimes, for emit something, if your technology reaches a certain level, then maybe the toxic elements inside the emissions will be reduced. [...] If you don't have the technology to reach the efficiency, you will need more raw materials, and then yes, you will emit more" (4.CH\_HH).

In order to thoroughly frame these paradigmatic quotes, one needs once more to read and interpret them through a cultural-sensitive lens. Confucian environmental morality tends to estimate nature as an entity that should not be exploited or manipulated (*Callicott and McRae 2014; Hourdequin and Wong 2005; Weiming 2001*). Thus, human beings have to respect and assist nature, they should not interfere with it: "Heaven does not speak, yet the four seasons run their course and all things come into being" (see *Kuo 2011*). Technological advancement is seen as part of the organic whole belonging to the human sphere: technology is hence not conceived as a counterpart to nature. On the contrary, if properly applied, it can contribute to re-establishing the desired cosmic order and harmony. This conception goes hand in hand with the Chinese assumption that technological and economic growth can be compatible with environmental sustainability.

Different cultural concepts of mitigation and adaptation emerged in the course of the analysis that also affect the understanding of the respective concepts and exert an impact on the measures to be taken. In fact, the Western tradition of framing climate change contrasts with the tacit Asian ways of conceptualising it. Whilst the former is based on a rationale that separates nature and culture and requires man to subject nature to his will, the latter does not strictly separate nature from culture and emphasizes human assistance of nature for the sake of harmony. In summary, philosophies develop culturally different backgrounds and moralities that lead to different concepts of mitigation and adaptation.

## 5. Cultural differences as opportunities: theoretical and methodological implications

Looking back at the spectrum of our results, they suggest that culturally generated worldviews bear

an impact on the framing of climate change: Unconscious climate change worldviews appeared to exert a vital impact on the conceptualisation and preference of certain mitigation and adaptation measures. This aspect became particularly visible in the analysis of causes and consequences where underlying Western (atomistic) and Eastern (holistic) worldviews emerged. In fact, it was shown that Italian migrants hold the tendency to primarily analyse objects as separated from the context and on the basis of categorical membership, while Chinese individuals acquire meaning on intertwined causes and consequences once they are contextualized and related with other objects. Another important aspect revealed in our study was the role of the self-concept and its relation to the responsibility of government and government authorities to tackle climate change. Here, two divergent concepts emerged in the course of our study: The powerful and wise government combined with a weak "self" in the Chinese interviews stood in contrast to the Italian perception of an untrustworthy government where the individual has to accept and shoulder responsibility. Finally, ideas of technology as a means to understand and fix the un/controllability of nature considerably diverge: In the Chinese interviews, technology is interpreted as an integral part of nature and thus can be used as a tool to support it while Italians frame it as a separate category that has significantly contributed to the corruption of the atmosphere.

Besides these empirical results of our analysis, there are also conceptual repercussions on the scientific discourse as the nexus of climate change and migration is in many cases scientifically framed in terms of a threat for the hosting country. Our results indicate that this nexus requires a thorough methodological approach to overcome cultural stereotypes. Given the challenges implied by the analysis of cross-cultural differences in climate change perception, the approach applied here helped us to avoid misleading over-interpretation and stereotypes through its inbuilt analytical loops of control, reflexive checks and the assessment of results by written sources and with the help of native experts. Theoretically, the approach enabled us to reconsider the roles ascribed to migrants in the scientific literature and interpret them as active members of society. The awareness that different 'knowledges' and worldviews saturate the framing of climate change adaptation and mitigation not only suggests that the migrant population might support certain measures, but it also holds the potential to develop culturally sensitive and different ways to deal with climate change in



the hosting country. This important social potential has almost completely been neglected in the scientific literature. As seen in the example of the “self” in Eastern cultures, a Westerner might see at first hand a communication problem: How to communicate with a person about introducing climate-friendly measures if this person does estimate the “self” as too small and meaningless to instigate change? Undoubtedly, this represents a challenge but the solution is to meet this challenge with empathy. Instead of assessing the individual as nexus of power and duty, one could alternatively think about the opportunities that a collective dimension might offer. Such empirically based reflections provide the opportunity to explore migrant's knowledges but also to reflect upon our own culture and on its role in shaping climate change framings. Hence, the methodological and theoretical aspects outlined here as well as the results represent an attempt to find ways to explore the social and cultural dimensions of climate change through science and in society (Hulme 2013). More specifically, they helped us to reconsider and assess the role of migrants and their possible contribution to mitigate or adapt to climate change in their hosting country.

## Acknowledgements

The research undertaken in this paper was funded by the REKLIM Initiative of the Helmholtz Association, Germany, under Topic 7: Risk analysis and risk management for integrated climate strategies, which addresses the regional and local perception of regional climate change. The REKLIM initiative ([www.reklim.de](http://www.reklim.de)) analytically focuses on various scientific and socio-cultural aspects of climate change and aims at developing socially acceptable and integrated adaptation and mitigation strategies. We would also like to thank our interviewees who devoted their time to answer our questions. A big thank you goes to *Qian Jiang* who helped us to contextualize and re-interpret results taken from interviews with Chinese migrants.

## References:

- Adger, W.N., J.M. Pulhin, J. Barnett, G.D. Dabelko, G.K. Hovelsrud, M. Levy, Ü. Oswald Spring and C.H. Vogel 2014: Human security. – In: Field, C.B., V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastrandrea, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea and L.L. White (eds.): Climate change 2014: impacts, adaptation, and vulnerability. Part A: Global and sectoral aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. – Cambridge, UK, and New York, NY, USA: 755-791
- Barnett, J. and M. Webber 2010: Accommodating migration to promote adaptation to climate change. – Policy Research Working Papers 5270. – The World Bank. – Washington, D.C.
- Bettini, G. 2013: Climate barbarians at the gate: a critique of apocalyptic narratives on ‘climate refugees’. – *Geoforum* 45: 63-72
- Bundesamt für Migration und Flüchtlinge 2014: Das Bundesamt in Zahlen 2013. – Nürnberg
- Callicott, J.B. and R.T. Ames (eds.) 1989: Nature in Asian traditions of thought: essays in environmental philosophy. – Albany
- Callicott, J.B. and J. McRae (eds.) 2014: Environmental philosophy in Asian traditions of thought. – Albany
- Charmaz, K. 2006: Constructing grounded theory: a practical guide through qualitative analysis. – London et al.
- Corbin, J. and A. Strauss 2008: Basics of qualitative research: techniques and procedures for developing grounded theory. – 3<sup>rd</sup> edition. – London et al.
- European Commission and European Parliament 2009: Europeans' attitudes towards climate change. Report. – Special Eurobarometer 313. – Accessed online: [http://ec.europa.eu/public\\_opinion/archives/ebs/ebs\\_313\\_en.pdf](http://ec.europa.eu/public_opinion/archives/ebs/ebs_313_en.pdf), 18/03/2015
- Fill, A. (Hrsg.) 1996: Sprachökologie und Ökoinguistik. Referate des Symposions Sprachökologie und Ökoinguistik an der Universität Klagenfurt, 27.-28. Oktober 1995. – Tübingen
- Fill, A. and P. Mühlhäusler (eds.) 2006: The ecolinguistics reader: language, ecology and environment. – London
- Fill, A. and H. Penz (eds.) 2007: Sustaining language: essays in applied ecolinguistics. – Austria: Forschung und Wissenschaft; Literatur- und Sprachwissenschaft 5. – Wien et al.
- Harré, R., J. Brockmeier and P. Mühlhäusler 1999: Greenspeak: a study of environmental discourse. – London et al.
- Hourdequin, M. and D.B. Wong 2005: A relational approach to environmental ethics. – *Journal of Chinese Philosophy* 32 (1): 19-33
- Hulme, M. 2013: Exploring climate change through science and in society. An anthology of Mike Hulme's essays, interviews and speeches. – London et al.
- Johnson, M. 1989: The body in the mind: The bodily basis of meaning and imagination. – 3<sup>rd</sup> printing. – Chicago
- Klocker, N. and L. Head 2013: Diversifying ethnicity in Australia's population and environment debates. – *Australian Geographer* 44 (1): 41-62
- Koser, K. 2007: Why migration matters. – In: Koser, K.: International migration: a very short introduction. – Oxford: 1-16

- Kuo, S. 2011: Climate change and the ecological intelligence of Confucius. – *Journal of Global Ethics* 7 (2): 185-194
- Latour, B. 1993: We have never been modern. – Translated by Catherine Porter. – Cambridge, Mass.
- Lorenzoni, I. and N.F. Pidgeon 2006: Public views on climate change: European and USA perspectives. – *Climatic Change* 77 (1): 73-95
- Nisbett, R.E. 2003: The geography of thought: how Asians and Westerners think differently ... and why. – New York et al.
- Northoff, G. 2014: Wie kommt Kultur in den Kopf? eine neuro-wissenschaftliche Reise zwischen Ost und West. – Berlin et al.
- Ratter, B.M.W., K.H.I. Philipp and H. von Storch 2012: Between hype and decline: recent trends in public perception of climate change. – *Environmental Science & Policy* 18: 3-8
- Sakdapolrak, P. 2014: Building resilience through trans-locality. Climate change, migration and social resilience of rural communities in Thailand. – *TransRe Working Paper* 1. – Bonn
- Shi, T. and J. Lu 2010: The shadow of Confucianism. – *Journal of Democracy* 21 (4): 123-130
- Shore, B. 1996: Culture in mind: cognition, culture, and the problem of meaning. – Oxford et al.
- Taylor, A., W. Bruine de Bruin and S. Dessai 2014: Climate change beliefs and perceptions of weather-related changes in the United Kingdom. – *Risk Analysis* 34 (11): 1995-2004
- Toan, D.T.T., V.D. Kien, K.B. Giang, H.V. Minh and P. Wright 2014: Perceptions of climate change and its impact on human health: an integrated quantitative and qualitative approach. – *Global Health Action* 7: 1-8
- Trampe, W. 1990: Ökologische Linguistik. Grundlagen einer ökologischen Wissenschafts- und Sprachtheorie. – Opladen
- UNESCO 2014: Understanding community perceptions about climate change in the Pacific. SPARCK, Sharing perceptions of adaptation, resilience and climate knowledge. Final report. – Apia, Samoa
- van Ess, H. 2009: Der Konfuzianismus. – 2. Auflage. – München
- van Ess, H. 2011: Der Daoismus: von Laozi bis heute. – München
- Watson, R.T., M.C.Zinyowera and R.H.Moss (eds.): The regional impacts of climate change: an assessment of vulnerability. Special Report of IPCC Working Group II. – Cambridge et al. – Accessed online: <https://ipcc.ch/ipccreports/sres/regional/index.htm>
- Weiming, T. 2001: The ecological turn in new Confucian humanism: implications for China and the world. – *Daedalus* 130 (4): 243-264
- Wetherell, M. and J. Potter 1988: Discourse analysis and the identification of interpretative repertoires. – In: Antaki, C. (ed.): *Analysing everyday explanation: a casebook of methods*. – London et al.: 168-183
- Wittgenstein, L. 2009: *Philosophical investigations*. Philosophische Untersuchungen. The German text with an English translation by G.E.M. Anscombe, P.M.S. Hacker and J. Schulte. – 4<sup>th</sup> edition. – Chichester
- Wolf, J. and S.C. Moser 2011: Individual understandings, perceptions, and engagement with climate change: insights from in-depth studies across the world. – *Wiley Interdisciplinary Reviews: Climate Change* 2 (4): 547-569
- Xia, C. and M. Schönfeld 2011: A Daoist response to climate change. – *Journal of Global Ethics* 7 (2): 195-203