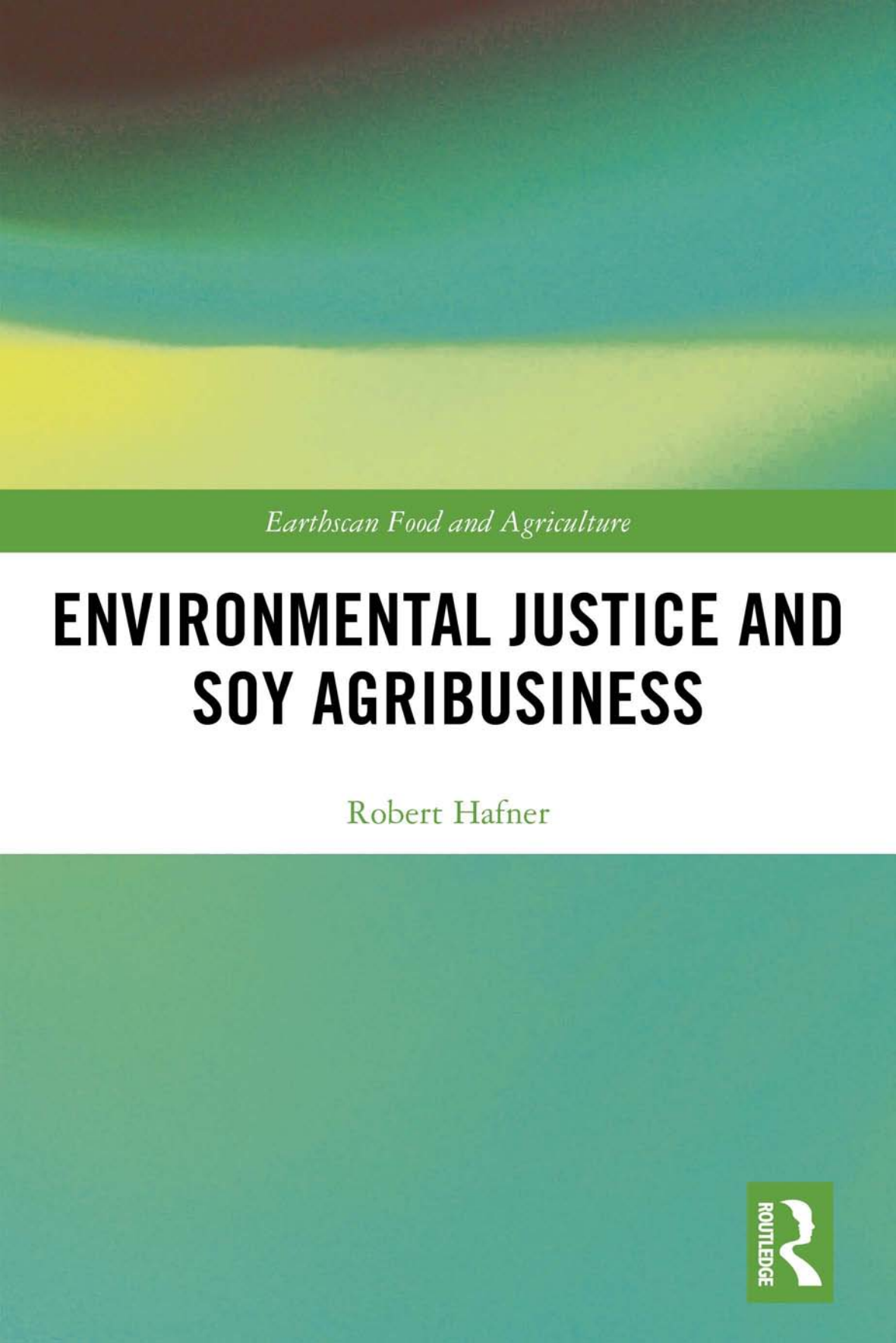
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ENVIRONMENTAL JUSTICE AND SOY AGRIBUSINESS
Robert Hafner
ROUTLEDGE

Environmental Justice and Soy Agribusiness

Environmental justice research and activism predominantly focus on openly conflictive situations; claims making is central. However, situations of injustice can still occur even if there is no overt conflict. *Environmental Justice and Soy Agribusiness* fills this gap by applying an environmental justice incommensurabilities framework to reveal the mechanisms of why conflicts do not arise in particular situations, even though they fall within classic environmental justice schemes.

Empirically, the case study focus is on the remote soy frontier in Northwest Argentina, particularly the town of Las Lajitas as the nucleus of soy production. This represents an excellent example of the recent expansion of the soy agribusiness industry in Latin America. First, a classic environmental justice analysis is carried out. Second, and drawing on the epistemological works of Ludwik Fleck, an alternative analytical framework is proposed, visualising locals' thought styles on change, effects and potential conflict in relation to soy agribusiness. Here, visceral elements and the application of a jazz methodology are vital for a more holistic form of multisensory cognition. Third, incommensurabilities among the classic and alternative approach are uncovered, arguing for the importance of temporal and spatial contexts in environmental justice research.

Robert Hafner is a postdoctoral researcher, funded by the Post-DocTrack Pilot Program of the OeAW, and a member of the Work Group Development Studies and Sustainability Research, the Institute of Geography, Innsbruck University, Austria.

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Environmental Justice and Soy Agribusiness

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Preface and acknowledgements

I like odd statistics.

Up to this point, I have spent 1,509 days working on this book, which means I have been writing about 80 words per day on average.

Most of the pages were generated in St. Wolfgang im Salzkammergut in Austria, at the house of my parents, Sonja and Reinhold. They always – much like my sister Iris – supported me in any way possible, helped me push through difficult stages and put things in perspective when necessary. I am very grateful to them for that.

The second highest number of pages (and the majority of the figures and maps) came together in Innsbruck, sitting in the office of our Work Group Development Studies and Sustainability Research at the Institute of Geography, Innsbruck University, in Austria. Thank you for the input, particularly relating to the figures and maps, but especially for tolerating my antics of writing on 3/7 of all the windows. Not just moral support from my family *in situ* was personified by my aunt. Thanks for always being there for me, Elfriede.

The third highest number of pages were written in San Miguel de Tucumán in Argentina, at the *Instituto Superior de Estudios Sociales*, Universidad Nacional de Tucumán. Thank you for offering me a desk and (especially moral) support during my fieldwork phase.

Speaking of fieldwork organisation, I have spent 14 months in Argentina, made two round-trip transatlantic flights, travelled 22,000 km by bus, carried out fieldwork twice by car (thank you, Pablo Paolasso, for showing me around on my first trip) and once with a pickup truck. I have slept in 15 different types of accommodation, including hostels, hotels, floors and truck beds, a private house (thank you, Isabel and Hugo Karplus, for your great hospitality and friendship over the years; without you, I would not have discovered so many facets of Argentina and Buenos Aires), or private rooms. Thank you, Soledad, José María, Julia, Olga and the people from the *Vecinos Autoconvocados del Río Juramento*.

However, there are also dark sides to fieldwork. During my stay, two birds were hit by our car, and approximately 20 cockroaches as well as seemingly 100,000 mosquitos killed.

On a more pleasant note, the suckling pig that was grilled for us by Pablo in Coronel Mollinedo was delicious (thanks to the whole Sánchez family, for letting us stay at your house and giving us insights into local structures).

Some 167 interviews were conducted, 120 caught on tape (leaving me with 176 hours, 33 minutes and 30 seconds of audio material) and 47 not recorded. Thank you all for using your precious time to talk to me. You were a great help.

Some 15 workshops were conducted with the local youth. Thank you very much to all of you for participating enthusiastically, opening a window of cognition that would have otherwise remained eternally shut. Thanks also go to the teachers, headmistresses and headmasters for letting us carry out our activities with their students.

Most of the fieldwork (particularly the workshops), was carried out with my colleague, Julieta Krapovickas. Thank you, Julieta, for your awesome input; together, we made a great team!

There is no dissertation without a supervisor. Martin Coy, thank you for putting up with my sometimes off-the-norm ideas and approaches, but (almost) always encouraging me to venture forth.

Special thanks goes to Gerhard Rainer, thank you for your input, critiques and your willingness to read the *whole thing*. Roman Ossner, you always had a keen eye on my figures and maps, thanks for that. Walter Kraus, an excellent proof-reader, it is beyond my understanding how you work so efficiently, I owe you big time. And Simone Sandholz, even though our offices are no longer next to each other, thanks for letting me bug you with anything and everything, at any time.

Money makes the world go round. So in order for *me* to go around the world, I'd like to thank Innsbruck University for granting me both the Doctorate Scholarship for Young Researchers (DOC-UIBK) and the Scholarship for Short-Term Studies Abroad (KWA, Innsbruck University) at the *Instituto Superior de Estudios Sociales, Universidad Nacional de Tucumán,* Argentina. Thank you OeAD GmBH for awarding me a 12-month Marietta Blau Scholarship (OeAD, Austria) at the *Instituto Superior de Estudios Sociales, Universidad Nacional de Tucumán*, Argentina. And thanks to the Austrian Academy of Science for a three-year DOC Fellowship of the Austrian Academy of Science at the Institute of Geography, Innsbruck University, Austria.

And finally, I want to thank you, dear reader, for your openness and willingness to engage with a somewhat unusual book and its underlying, new approaches towards cognition.

Abbreviations

Term	*Spanish*	*English*
AACREA	Asociación Argentina de Consorcios Regionales de Experimentación Agrícola	Argentinian Association of Regional Consortia for Agricultural Experimentation
AAPRESID	Asociación Argentina de Productores en Siembra Directa	Argentinian Direct Tillage Producers Association
ARS		Argentinian peso
ASC		Local administrations, support and control institutions. Those actors range from local politicians, members of the public sector, representatives of the police, environmental enforcement groups as well as representatives of INTA.
BRL		Brazilian Real
CEPRONAT	Centro de Protección a la Naturaleza	Centre for the Protection of Nature
CONICET	Consejo Nacional de Investigaciones Científicas y Técnicas	National Commission of Scientific and Technical Research
DTM		digital terrain model
EDU		Schools and education entities. This category comprises representatives of schools, i.e. headmasters, teachers and librarians.
EFSA		European Food Safety Authority
EJ		environmental justice

Term	*Spanish*	*English*
EJIF		environmental justice incommensurabilities framework
EJOLT		Environmental Justice Organisations, Liabilities and Trade
EOEA		Executive Office of Environmental Affairs (USA)
FARN	Fundación Ambiente y Recursos Naturales	Foundation for the Environment and Natural Resources
GM		genetically modified
GMO		genetically modified organism
GRR	Grupo de Reflexión Rural	Group of Rural Reflection
INTA	Instituto Nacional de Tecnología Agropecuaria	National Institute of Agriculture and Livestock Technology (Argentina)
IPV	Instituto Provincial de Vivienda	Provincial Institute of Housing
LULU		locally undesired land use
MEMSIS		Framework for Assessing the Sustainability of National Resource Management Systems (Spanish acronym)
Mercosur	Mercado Común del Sur	Southern Common Market
MNCI – Vía Campesina	Movimiento Nacional Campesino Indígena	National Campesino-Indigenous Movement
NEA	Noreste Argentino	North-east Argentina
NGO		non-governmental organisation
NOA	Noroeste Argentino	North-west Argentina
NPA		National Park Administration
OECD		Organisation for Economic Cooperation and Development
PE★ (total); PEL (Las Lajitas); PEM (Coronel Mollinedo); PER (regional)		Local perception actors. This group comprises locals I have spent significant amounts of time with and thus gained insights into their ways of thinking and acting.

Term	*Spanish*	*English*
REDAF	Red Agroforestal	Agroforestal Network
RTRS		Round Table on Responsible Soy
SAB		Soy agribusiness. The majority of the members of this group are farmers, members of *pooles de siembra* and/or agroservice providers.
SENASA	Servicio Nacional de Sanidad y Calidad Agroalimentaria	National Service for Health and Quality of Agrifoods
SOC		Social entities. Members of social entities are considered hospital staff (both administrative and medical), members of health centres, social workers, who work directly 'in the field', visiting households, or heads of religious organisations with social projects in the region (e.g. soup kitchens).
TIN		Triangulated Irregular Network
TSDF		treatment/storage/disposal facility
UAC	Unión de Asambleas Ciudadanas	Union of Citizen Assemblies
UNSA	Universidad Nacional de Salta	National University of Salta (Argentina)
UPOV		International Union for the Protection of New Varieties of Plants
US EPA		US Environmental Protection Agency
US FDA		US Food and Drug Administration
WHO		World Health Organisation

1 Introduction

> Have you ever applied environmental justice in obviously conflicting settings and nothing happened?

Environmental justice conflicts are omnipresent. By October 2017, 2,252 cases worldwide had been reported to the Environmental Justice Atlas (EJOLT 2016), covering topics ranging from nuclear to mineral ores, waste and water management, infrastructure, to biodiversity conservation, biomass and land conflicts. Soy agribusiness-related conflicts are an under-represented part of this list, even though they encompass central issues like new globalisation processes, land grabbing and far-reaching environmental problems, deforestation, GMO and fumigation and the exclusion of indigenous groups, as well as fairness and fair trade.

The potential is there, research is missing. Adding a small part to the manageable corpus of literature, this book will focus on the particular setting of the third-largest soy producer worldwide: Argentina (FAOSTAT 2014). The core area of soy production lies in the Argentine Pampas Region, a traditional agricultural region, where – through the application of heavy machinery, fertilisers and pesticides/herbicides – vast areas of soy monocultures have developed. Based on the increasing international demand for soy and its derivatives over the last three decades, a spatial expansion of the producing area towards the North-west of Argentina (NOA) is observed (cf. Reboratti 2010, p. 65). This traditionally peripheral region with economic and infrastructural deficits and above-average proportion of the population living below the poverty line, is now being transformed to an area of large-scale, externally financed and export-oriented soy fields (Bolsi 1997; Reboratti 2001; Bolsi and Paolasso 2009; Rivas and Natera Rivas 2009). Thus, the integration of the North-west into the processes of globalised soy agribusiness, particularly the accompanying structural and procedural changes, is generating socio-spatial fragmentation and conflicts among local actors, among actors on different scalar levels and among different interest groups. Such topics have already been studied in my research area (e.g. Hufty 2008; Izquierdo and Grau 2009; Silva *et al.* 2010; Venencia *et al.* 2012; Goldfarb and Zoomers 2013; Piquer-Rodríguez *et al.* 2015).

Three observations stand out: first, no explicit reference to the concept of environmental justice has been made so far, neither from an activist nor a scientific perspective. Second, locals living in urban areas (i.e. the villages and small towns) make up the majority of the population in the Chaco Salteño; they are affected by both the environmental change of their surrounding environments (e.g. through deforestation or fumigation) as well as by social effects (e.g. related to health, work, crime) thereof; but their thought styles (i.e. processes, circulations of ideas and social practices from which the style-appropriate conditioning of perception, thinking and acting of actors emerge) have not yet been the focus of social-environmental research. And, finally third, very little (meta-) research has been carried out (an exception is Davoudi and Brooks 2014) on the prequel to environmental justice conflicts, i.e. the focus on the asking (and subsequent questioning) of the 'right' questions.

Hence, with this book I aim to tackle those three central themes, go off the beaten path and introduce new forms of thinking (Schopenhauer 1851, p. 93) about environmental justice and soy agribusiness at the frontier in North-west Argentina.

Theoretically, I show that environmental justice activism/research – with few exceptions – has too narrow a perspective, leaving the pre-conflict stage and creation of different realities out of sight. Hence, my book 'fills a much-needed gap'[1] by focusing on the blank spaces of thought style incommensurabilities that hinder the understanding among actors.

Empirically, I focus on the most remote soy frontier in North-west Argentina, particularly the town of Las Lajitas as the nucleus of soy production. My aim here is to go beyond a classic stakeholder analysis and visualise the thought styles of locals (no extensive work has been done here so far) on change, effects and conflict (potentials) in relation to the soy agribusiness.

Finally, I show that context matters, both from a theoretical (i.e. which theoretical line of thought do I follow?), as well as an empirical perspective (i.e. what sort of questions, methods and findings do I use?).

Structure of the book

Research on environmental justice allows room for experimentation with research designs (Funderburg and Laurian 2015; Hodges and Stocking 2015). This book falls into this category. It is highly influenced by two elements: perspective and jazz. While the former draws heavily on the thinking of Ludwik Fleck (1980) and his thought styles and thought collectives (i.e. a group of people with similar backgrounds who share the same codes and rationalities as well as context) to obtain an understanding of the underlying dimensions that ultimately lead to the construction of differing realities (thus he can be considered a proto-constructivist), the latter resembles the methodological approximations that I have used to design both my fieldwork as well as post-processing, applying the attributes of this musical genre as a strong metaphor (Chapter 3).

This book, while maintaining the spirit of alternative research designs, is divided into three parts. Part I focuses on the meta-contextualisation of the research process and the epistemologies of cognition that become relevant throughout the empirical analysis. Here, Chapter 2 on thought styles and incommensurabilities, two terms highly influenced by Ludwik Fleck, lays the foundation for Chapter 3, dealing with the method(olog)ical consequences of Fleck's forms of thinking. Viscerality, jazz and the translation of those two concepts into the research process are put to the foreground. Thus, understanding the epistemology of my thinking, as I argue, is the first step towards the understanding of my perspectives, my thought styles and ways of thinking.

Part II deals with the contextualisation of the two main themes of this book. In Chapter 4, the notion of justice is conceptualised and analysed according to its origins and forms of normative interpretation, as well as dimensions. Consequently, those considerations hold true for the debate on environmental justice (EJ), a concept that has undergone major shifts in foci over the last year. Chapter 5 highlights the thematic, temporal and spatial contexts of the soy agribusiness in Argentina. In so doing, strategic reasoning for expanding the soy frontier to the North-west of Argentina is revealed, which will be of particular importance for the in-depth analysis of the case study in Chapter 8.

Part III re-contextualises both the thematic as well as the spatial configurations presented in Part II. Chapter 6 embeds the debate on environmental justice in a Latin American context, highlighting the challenges that come with the concept in this particular setting. Going more into detail in Chapter 7, the Chaco Salteño research area located in the North-west of Argentina is used to combine and adapt classic environmental justice concepts discussed in Chapter 4. Here I take up one aspect that has not yet been studied: EJ incommensurabilities, or why environmental justice activism/research does not work under certain circumstances. Taking up this omission, I develop an environmental justice incommensurabilities framework (EJIF). However, unlike those concepts' focus on openly conflictive situations, the starting point of my approach is pre-conflict, thus particularly designed for cases where all conditions for EJ activism are given, but still nothing happens, no conflict arises. Chapter 8 relies on the new framework and takes up different realities and readings (CLASSIC, ALTERNATIVE and the COMPLETE, see the next section) of local facts in the town of Las Lajitas located in the nucleus of soy production in the Chaco Salteño.

Finally, Chapter 9 ties all the loose ends together, answering the questions posed in three different readings as well as giving a contextualisation of the whole method applied.

As you like it: a guide to three different perspectives

In line with the two themes of perspective and jazz, I propose three different readings in this book. They are based on three perspectives towards environmental justice (Table 1.1): the CLASSIC, the ALTERNATIVE and the

Table 1.1 Three perspectives discussed in the book

THE CLASSIC ENVIRONMENTAL JUSTICE ACTIVISM/SCIENCE PERSPECTIVE	*THE ALTERNATIVE* BEYOND ENVIRONMENTAL JUSTICE AND WHAT '*REALLY*' MATTERS
The first reading focuses on a narrow perspective of environmental justice, greatly influenced by the early stages of environmental justice (particularly phase 1; cf. Chapter 4) in general and distributional justice in particular. The thought style is framed deductively, i.e. the research area is viewed explicitly theoretically informed, applying environmental justice methodologies to identify conflict potentials.	The ALTERNATIVE approach goes the opposite way to the CLASSIC one. A theoretical embeddedness in environmental justice discussions is – though important – not primarily the key aspect and induction central here. The main objective is to construct thought styles of local actors first, identifying their concerns and claims, highlighting underlying dimensions that can or cannot lead to conflicts in the research area.[1]
Thus, the main questions in this field are:	Here, the central questions are:
What forms of social-environmental conflicts are observed in Las Lajitas?	*Who are the core actors in the research area?*
• Where are those conflicts located? • Who are the actors in the conflict? • How are environmental goods and bads distributed?	• What are their thought styles in relation to the soy agribusiness, regional development and social-environmental interaction? • What types of social-environmental problems are identified? • How far are claims made, against whom, and why (not)?
The requirements for an analysis of this sort are relatively low; little time for fieldwork is necessary to identify conflicts, interactions can be kept to a minimum by identifying and working with key actors.	This exploratory approach has the great advantage – by means of long-term fieldwork and by being 'more than just physically "there"' (Atkinson, 2015, p. 39) – to obtain a broader picture of local structures and elements of (thought style) powers.

THE COMPLETE ENVIRONMENTAL JUSTICE INCOMMENSURABILITIES

The last perspective is a combination and comparison of the CLASSIC and the ALTERNATIVE approach. Here, the cognitive interest is of a more abstract nature: The incommensurabilities (i.e. the blind spots that hinder the understanding among the thought collectives) of the different thought styles' realities will be revealed. The central question is:

What consequences arise from environmental justice incommensurabilities?

- What differences and similarities of results show the CLASSIC and ALTERNATIVE perspective on environmental justice?
- How and why are they manifested in the way they are?

Note

1 While four different actor groups are identified, I have placed the main focus on the locals' perception, since very little research has been carried out on that topic so far.

COMPLETE. Each perspective has different – thought-style-dependent – research questions. Here, the concept of 'methodological drag', 'a performance in which qualitative methodologists convincingly masquerade as situated within epistemological, theoretical, and methodological frameworks, even those that they may not situate themselves in personally or professionally' (Nordstrom and Happel-Parkins 2016, p. 149) becomes important. Counter-discourses beyond the familiar are deliberately shown to unearth new forms of cognition and allow for the creation of 'space[s] of curiosity' (Phillips 2014). So, based on the thought styles, certain contextual information is provided, ultimately leading to the construction of different realities. Each chapter is (or not), marked according to its inclusion/exclusion in the respective perspective.

Note

1 This is part of an alleged quote by Moses Hadas (cf. The Quotations Page 2015).

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Part I

Meta-contextualisation

2 Thought styles and incommensurabilities

Writing in the realms of science presupposes the possession of a certain conception of science itself. The epistemology of thinking, i.e. the membership in particular thought collectives, interactions and experiences of and among researchers, the articles and books read; all those elements are influential for the thinking process of an individual (Egloff 2005). Thus, context matters, be it (inter-, intra-, multi-, or trans-) disciplinary, outside the walls of academic institutions, i.e. in the field while doing research, or after results have been compiled and are being transmitted to the audience. This context also influences the way of how to do science, which questions are to be asked and which conclusions are drawn (see Ginev 2015). Nevertheless, as Das (2015, p. 39) highlights, most of the studies do not reveal their epistemological perspective for research question framing or how the data collected is applied in answering the questions posed. I fully agree with Das and therefore have the obligation/privilege to uncover the meta-theoretical and meta-contextual background of this book. In this sense, I find the writings of Ludwik Fleck highly enlightening; his ideas and thoughts have deeply influenced my way of doing science.

Ludwik Fleck, a physician and biologist, sees science not as a formal construct but rather as a task carried out by communities of scientists. His writings on the philosophy of science and logology are (as yet) little known, even though they had a great influence on Thomas S. Kuhn and his *The Structure of Scientific Revolutions* (1971), where he mentions that Fleck had actually anticipated many of his own ideas; but beyond this comment, he does not make the references to Fleck explicit (ibid., pp. 6–7).

Kuhn's terminology in his (1971) model of change was an eye-opener in the 1960s and 1970s, particularly for many geographers, even though years later, Kuhn (1991) himself argued that his model was not suitable for disciplines in the pre-paradigmatic stage:

> A paradigm is an academic culture, a means of operating whereby the adherents … agree on issues of epistemology, ontology and methodology within a defined sphere of academic activity – usually a sub-discipline rather than an entire discipline, as Kuhn made clear in his later writings.
>
> (Johnston 2004, p. 267)

Thus, this discrepancy of the use of paradigms and Kuhn's original intention will be used as a starting point to compare Fleck and Kuhn, allowing for a better understanding of the overall context (Table 2.1).

The core difference between Fleck and Kuhn is based on the fact that the former works on a very small-scale level, focusing on practical applicability and thus developed a well-described and named methodology for the generation of knowledge in different and plural contexts. The latter wants to reflect the bigger picture deriving from the history of physics (Werner and Zittel 2011, p. 15) and thus striving for very high levels of abstractions. This feature had been highly criticised by Fleck (before Kuhn even published *The Structure of Scientific Revolutions*) as being methodically outdated (Werner and Zittel 2011, p. 12).

For the purposes of this book, I favour Fleck's approach of an open epistemology (cf. Borck 2004) and his considerations of fluidity and evolution

Table 2.1 Differences between Ludwik Fleck's and Thomas S. Kuhn's philosophies of science

Category	*Ludwik Fleck**	*Thomas S. Kuhn*
Central concept for common thinking	*Denkstil* (thought style)	Paradigm
Change of ideas	*Denkstilumwandlung* *Denkstilumänderung* (transformation of thought style)	Paradigm shift
Occurrence of change of ideas	often	Very rarely
Type of change of ideas	Fluid, transformation-like	Radical; Kuhn mentions up to four examples for paradigm shifts, such as Copernicus
Discipline of origin	Medicine, microbiology	Physics
Origin of thinking	From praxis, i.e. scientific communication	Large-scale theoretical changes
Type of approach	Bottom-up	Top-down
Scalar focus	Small-scale occurrences	Large-scale epochs
Reach of philosophy of science	Beyond the scientific community	Remains predominantly within scientific community
Understanding of history and sociology of ideas	Fluid, context-loaded and historically influenced	Properly developed and established patent and received structure

Note

* Most of Ludwik Fleck's work has been written in German and is therefore read in the original language. Translations of the terms applied by Fleck derive from the work of Graf and Mutter (2006), who compiled the *Flecksikon*, a list of key words and concepts used by Ludwik Fleck in German that are translated into French and English. (own elaboration based on Kuhn 1971, Fleck 1980, Kuhn 1991, cf. Babich 2003, p. 88, Fleck 2008, 2011f, 2011g, 2011b, 2011a, 2011c, 2011e, 2011d, Werner and Zittel 2011, p. 16).

rather than revolution. Thus, the following pages briefly describe the core elements of Fleck's ideas.

Thus, thought styles[1] are neither methods nor fixed forms of thinking; they do not represent an epoch, worldview or ideology and they do not characterise any individuals, social groups or institutions; they are processes, circulations of ideas and social practices, out of which the style-appropriate conditioning of perception, thinking and acting of researchers emerge (Werner and Zittel 2011, p. 19). Or, as Fleck writes, '[t]he style is, then, a limited entity, a closed organism, and there is no possibility to obtain access through a common human, i.e. "logical" or "rational" way' (2008, p. 92; my translation).

The interrelation of science with praxis is crucial: 'Science is not a flower from the greenhouse, cultivated in absolute isolation from the world' (Fleck 2011f, p. 328). Each scientist is influenced by her/his socio-cultural surrounding, which consequently influences the form of how to approach scientific work, and vice versa (Stuckey *et al.* 2015). Thus, Fleck talks about the three components of cognition (both in everyday life and in science): Besides the *subject* and the *object* as the first two elements, the third is considered the *collective* (Fleck 2011b, p. 411), later termed *community*, defined as being 'creative like a subject, stubborn like an object and dangerous like an elemental force' (Fleck 2011a, pp. 470–471; my translation). His main objective here is to humanise science (particularly natural sciences), with the proposed advantage that the gap between theory and praxis in scientific life would disappear, leading to less hypocrisy. New ideals would develop, bringing the natural sciences and humanities closer together, allowing scientific conventions to become more transparent and explicable (ibid., p. 471). In a certain way, Fleck has already argued strongly (though implicitly) for the incorporation of transdisciplinary research, highlighting the democratic attribute of open as well as citizen science in order to validate 'truth' by the community rather than the elite (Fleck 2008, p. 98).

The three components of cognition have far wider-reaching consequences than just bringing together different strands and standards of science and the community. The interrelatedness of science and non-science mean that scientific achievements are not the outcome of individuals but produced by collectives (Fleck talks about *thought collectives*; Fleck 1980) during complex exchange processes (Werner and Zittel 2011, p. 18). This, again, has two subsequent effects:

1 Personalised thought styles, such as 'Galileo Galilei's thought style', or 'Nicolaus Copernicus' thought style'[2] cannot exist, since they too were involved in and influenced by their surroundings, be it supportive, accepting, critical or hostile (ibid., p. 21).
2 Thinking and cognition are both social and collective activities, expressed both in the form of ideas but also materialised in scientific practices; the scientific objects of the communication of thoughts are not only thought