

**Sustainability and Justice**  
**Conceptual Foundations and Cases in Biodiversity and**  
**Fishery Policy**

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# Introduction

## 1. Motivation

The societal vision of *sustainability* has a normative dimension which can be captured in terms of justice: *intragenerational justice*, that is global justice between currently living humans, *intergenerational justice*, that is justice between currently living humans and humans living in the future, and, at least in a substantial share of sustainability conceptions, *justice towards nature*, that is justice towards non-human entities.

These calls for justice are expressed in central documents of the sustainability debate. For instance, according to the seminal Brundtland report, sustainable development is defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED 1987: Ch. 2 §1) and aims “to promote harmony among human beings and between humanity and nature” (WCED 1987: Ch. 2 §81).<sup>1</sup>

However, the justification, specific content, practical implications and feasibility of justice claims and obligations in the sustainability context in general, and in particular cases of sustainability policy, often remain underspecified. How can specific claims of justice be justified normatively? What exactly is the content of, e.g., intergenerational justice claims? How can these claims be fulfilled with given scarce resources? Where do conflicts occur between different justice claims, or between justice objectives and other objectives?

These questions fall into the domain of the fields of sustainability ethics (Becker 2012) and sustainability economics (Baumgärtner and Quaas 2010, Baumgärtner 2011). Sustainability ethics (Becker 2012) as a relational and structural ethics seeks to address the individual and systemic challenges of sustainability, focusing on the relationship between contemporaries, towards future humans and with nature (the three sustainability relations), and taking into account the systemic structures that mediate these relationships. Sustainability economics (Baumgärtner and Quaas 2010), being normatively grounded in the calls for justice in the sustainability relations, aims at efficiency, that is non-wastefulness in the use of scarce resources for attaining the justice objectives.

Located within these two fields, the aim of this thesis is to contribute to the clarification of the normative dimension of sustainability by clarifying the notion of justice and its relationship to sustainability. The thesis approaches the issue from different angles, working at the conceptual level and at the level of cases from biodiversity and fishery policy. The thesis is motivated both by a need for conceptual clarification at the

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<sup>1</sup> The relationship between sustainability and justice, however, is discussed controversially in the literature. See Section 3 for a discussion.

theoretical level, and by the benefit this clarification may yield in practical realms of sustainability policy.

The thesis addresses the following research questions:

- How can the concept of justice be systematically understood and specified?
- How can justice be specified in the context of sustainability – i.e. as *sustainability justice*, integrating intergenerational justice, intragenerational justice and justice towards nature?
- Which specific problems of justice arise in specific contexts of sustainability policy? Particularly,
  - which justice problems arise regarding the utilization of genetic resources and traditional knowledge, especially if associated with patenting (as expressed in the “biopiracy” debate)?
  - how do stakeholders concerned with the management of a scarce resource, in this case the Newfoundland fishery, think about justice?
- What are the respective contributions of (sustainability) economics and (sustainability) ethics to the discussion and implementation of justice in the sustainability context?

In tackling these questions, the thesis addresses a number of research gaps and makes original contributions to the scientific discourse on sustainability and justice. For example, while there are different conceptual analyses of justice (see, e.g. Dobson 1998, Caney 2005, Page 2007a, 2007b, Risse 2012), an analysis applicable to all domains of justice, such as distributive justice, corrective justice, justice-in-exchange and structural justice (Aristotle [POL] 1985, [EN] 2000), is missing in the literature. Moreover, while there are some inquiries into the relationship between justice and sustainability (e.g., Dobson 1998, see also Section 3), there is a gap in systematically relating these ideas at the general concept level. Furthermore, by also addressing specific cases of sustainability policy, the thesis contributes to the process of mutual engagement between empirical and normative work and between constructive and reconstructive work on justice in the sustainability context (see also Section 3). Finally, the thesis contributes to the further development of the emerging fields of sustainability economics and sustainability ethics.

## **2. Research papers**

This cumulative doctoral thesis is comprised of five research papers:

[1] Stumpf, K. H., C. Becker and S. Baumgärtner (2014), The conceptual structure of justice. *Manuscript*.

[2] Stumpf, K. H., S. Baumgärtner, C. Becker and S. Glotzbach (2014), The justice dimension of sustainability. A systematic and general conceptual framework. *Manuscript*.

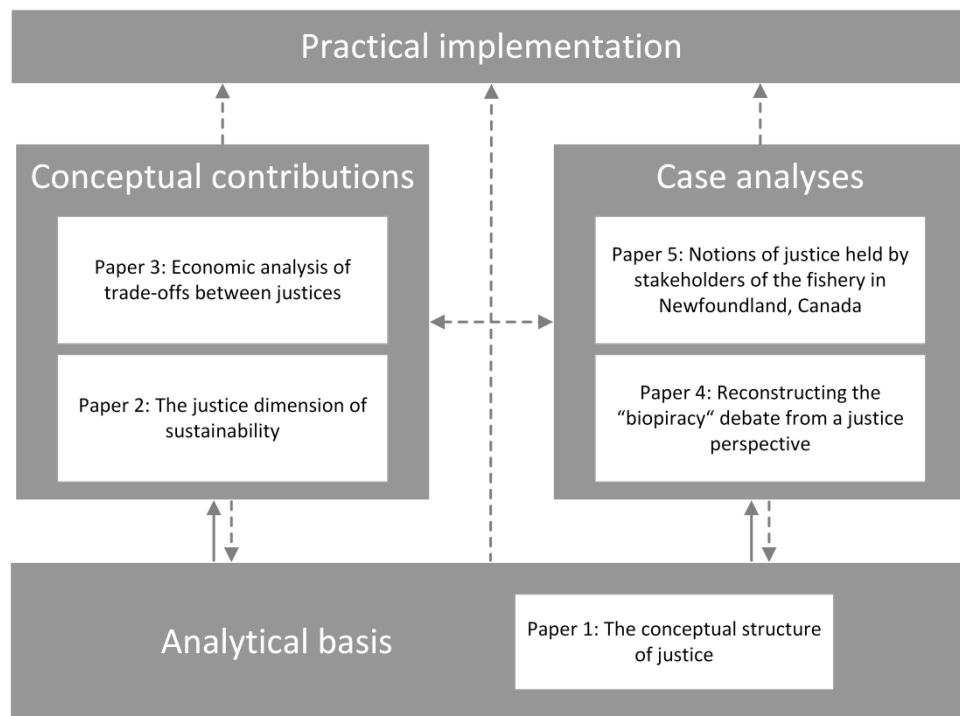
[3] Baumgärtner, S., S. Glotzbach, N. Hoberg, M. F. Quaas and K. H. Stumpf (2012), Economic analysis of trade-offs between justices. *Intergenerational Justice Review*, 1/2012, 4–9.

[4] Stumpf, K. H. (2014), Reconstructing the “biopiracy” debate from a justice perspective, in: D. Lanzerath and M. Friele (eds), *Concepts and Values in Biodiversity*. Oxon: Routledge, 225–242.

[5] Kahmann, B., K. H. Stumpf and S. Baumgärtner, Notions of justice held by stakeholders of the fishery in Newfoundland, Canada. *Manuscript*.

Further information on author contributions, publication status, and conference contributions can be found in the appendix to this thesis.

In the following, I will briefly describe the contribution of each research paper to the research questions and the aims of this thesis. Figure 1 illustrates the types of contributions of and main relationships between the research papers.



**Figure 1: Illustration of the types of contributions of and relationships between the research papers.** Solid arrows from A to B symbolize that A lays an analytical basis for B, dotted arrows symbolize that A has implications for B. Paper 1 provides the analytical basis for the other four papers. Paper 2 and Paper 3 provide conceptual contributions in the fields of sustainability ethics (Paper 2) and sustainability economics (Paper 3). These fields are related to each other in that sustainability ethics can contribute to the normative foundation of sustainability economics, and sustainability economics can provide information on feasible justice outcomes which are relevant to “non-ideal” theorizing in sustainability ethics. Papers 4 and 5 provide case analyses. They are related to the conceptual contributions, especially to Paper 2, because empirical work on justice may have implications for normative theorizing, while on the other hand it cannot do without a normative foundation. Papers 2 to 5 constitute “tests” of the conceptual structure of justice, which may in principle feed back into the formulation of the conceptual structure (Paper 1). All papers give some limited hints at the practical implementation and attainment of justice.

## Paper 1: The conceptual structure of justice

Talking about sustainability requires talking about justice. In this paper, we discuss and structure the concept of justice on a general level. The conceptual structure of justice developed in this paper provides an analytical basis for the following four papers.<sup>2</sup>

At its core, justice refers to the balance of the owed, demandable claims (or rights) and the corresponding obligations (or responsibilities) within a community of justice from the standpoint of impartiality and equal consideration (e.g., Gosepath 2007). As a contested concept (Gallie 1956, Rawls 1971), justice gives rise to many different specific conceptions, i.e. different interpretations of how the concept should be applied in practice (Jacobs 1999). Justice conceptions can belong to different domains of justice such as distributive justice, justice-in-exchange, corrective justice, or structural justice (Aristotle [POL] 1985, [EN] 2000, Pogge 2006, Young 2011).

To capture the multifarious dimensions of justice, we present a formal, conceptual structure of justice (called “syntax” in earlier versions), which allows us to analyse and compare different conceptions of justice and to explore new definitions of justice in an analytical way. This structure lists several elements necessary to fully describe a specific conception of justice. It aims at a high level of generality and abstraction, being applicable to all domains of justice.

One conceptual element to be specified is the *community of justice* (Dobson 1998), whose members can have one, or both, of the two roles of claim holders (those holding particular claims) and claim addressees (those responsible for the fulfilment of the claims). Further, the *claims*, as something to which the claim holders are fundamentally entitled, are central to the concept of justice (Ott and Döring 2008). Claims give rise to corresponding obligations of the claim addressees. A further conceptual element of justice is the *judicandum*: that which is to be judged as just as unjust. Judicanda can be individual or collective actors, actions (or omissions), social rules, or states of affairs (Pogge 2006). To assess judicanda and evaluate the satisfaction of claims, one needs to specify the *informational base* (Sen 1990) for the judgment. Furthermore, the *principles of justice* determine claims and obligations, and correspondingly, how the informational base is applied. Basic principles of justice include equality, proportionality, priority, and sufficiency (Young 1994, Frankfurt 1987, Krebs 2003). Finally, on a more practical level, one can specify the *instruments of justice* (Anand and Sen 2000) to be employed in the satisfaction of claims and therefore in the attainment of justice.

For the foundation of justice conceptions, we discuss different sources, such as broader philosophical and ethical frameworks, grounds of justice, and the reconstruction of actual claims. Different conceptions of justice define different claims, claim holders etc., depending on which foundation they build. Moreover, underlying ontological and

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<sup>2</sup> As the conceptual structure of justice was developed and evolved over a time-span of several years, the formulations of the conceptual structure vary slightly between the papers. In Paper 3 and Paper 4 (both submitted 2011), earlier versions of the conceptual structure of justice are presented.



epistemological assumptions also play an important role in determining which specifications of the conceptual elements make sense.

Our analysis proceeds on the meta-level of ethics, i.e. it is focused on the formal conceptual structure of justice and insofar independent of what primary ethical position one adopts exactly. While our focus is on the general concept of justice, we also refer to specific conceptions of justice to illustrate particular points, and to back up and reinforce our analytical argumentation in a synthetic way.

We argue that by specifying the conceptual elements of justice, it is possible to analyse and compare different conceptions of justice and to explore new definitions of justice in an analytical way (philosophical-analytical purpose). We further argue that the conceptual structure of justice helps in the evaluation of concrete policies, actions, or states of the world and in institutional implementation of justice, by explicating any idea of justice in a manner that provides concrete links to the relevant context (societal-political purpose). We show in this paper how the conceptual structure of justice may be used to link the general idea of justice to a concrete case by providing an example regarding the use and production of biofuels.

A limitation of this paper is that the conceptual structure of justice is a purely formal framework, which by itself does not give guidance on well-argued grounds of justice or reasonable epistemological and ontological assumptions underlying a conception of justice. Therefore, institutional implementation will always require argumentation about the right grounds of justice and ontological and epistemological assumptions. The application of the conceptual structure cannot resolve certain disputes, e.g. disputes between proponents of different ethical schools on different grounds of justice, or disputes on factual questions; but it can help in this discussion by clarifying terms and relationships between terms. The pure formality therefore also is a strength of the approach, as it allows to structure ideal, non-ideal, implementation-oriented and empirical work on justice and therefore to relate them to each other. Moreover, the conceptual structure of justice facilitates to check whether the specification of the conceptual elements of justice is consistent with each other, with underlying ontological and epistemological assumptions, and with the grounds of justice or ethical foundation that are taken to apply.

We conclude that the conceptual structure of justice is helpful as a structuring device, which allows a more explicit discussion on different justice conceptions and their underlying assumptions and reasoning. Moreover, it can be applied to link specific justice conceptions to concrete contexts and thereby used to explore paths for institutional implementation or to assess public policies.

## **Paper 2: The justice dimension of sustainability. A systematic and general conceptual framework**

This paper links the concepts of justice and sustainability. We discuss how the normative dimension of sustainability can be captured in terms of justice. In the context

of this thesis, this paper is the main conceptual contribution from the perspective of sustainability ethics.

We start from the observation that both justice and sustainability are contested concepts, and that there is a need to clarify their meanings and systematic relationships. We distinguish between two levels of meaning of contested concepts: At the level of the general concept, there is a unitary, undisputed but also vague conceptual core, constituted by a number of core characteristics. At the level of specific conceptions, alternative ways in which the concept and its core characteristics can be understood and specified are discussed (Jacobs 1999).

Our analysis proceeds mainly at the level of general concepts. We ask how the general concepts of sustainability and justice can be linked to form a new concept of *sustainability justice*. Our aim is to map out the space of possible specifications of sustainability justice. We do not suggest a specific conception of sustainability justice, but develop requirements for any conception of sustainability justice. Thereby, we aim to provide a theoretical framework that can serve future research and debate about justice in the context of sustainability issues.

Sustainability is an integrative concept, linking different issues and aiming to resolve them simultaneously and at best, in a mutually reinforcing way. We identify the core characteristics (i.e., meanings and “circumstances”) of sustainability as follows: Sustainability is (as a literal meaning) about continuance, aims at normative orientation, covers an encompassing temporal and spatial scope and is essentially about fundamental relationships of the human being with contemporaries, future humans and nature (the sustainability relations). These relationships are characterized by considerable asymmetries and are mediated by economic, scientific and technological systems. The sustainability context is also characterized by fundamental limits and uncertainty.

Different sustainability conceptions vary in how they interpret these core characteristics of sustainability, based at least partly on different underlying assumptions as regards the human being, nature and their relationships (ontological assumptions), as regards questions of knowledge (epistemological assumptions) and as regards questions of moral status, values and norms (ethical assumptions). At the same time, some minimum ontological and epistemological assumptions for all sustainability conceptions can be identified, such as the existence of at least weak relationships in the three sustainability relations, the existence of at least some limits in the biophysical environment, and (at least to some extent) the ability of humans to influence nature and human dependence on nature. Sustainability presupposes the ability to recognize at least some aspects of the biophysical environment as an external reality, albeit subject to substantial uncertainties. To arrive at normative conclusions, additionally certain ethical assumptions (basic evaluative and prescriptive statements) are needed.

After discussing the sustainability concept, we turn to the concept of justice and briefly introduce the conceptual structure of justice developed in Paper 1. We then employ this

conceptual structure to determine the specific characteristics and challenges of justice in the context of sustainability.

We argue that any conception of sustainability justice needs at least to consider partners in the sustainability relations (currently living humans, humans of future generations, and nature or natural entities) as potential claim holders, and give reason for the inclusion or exclusion of members of these groups in the community of justice. Responsibility may be divided between different (individual and collective) actors, and between (present and future) generations: A dynamic perspective is needed. While claims (and obligations) may be defined in different ways, depending on the ground of justice, there are some general requirements for the specification of claims from the core characteristics of sustainability, e.g. the avoidance of risks (derived from the uncertainty prevalent in the sustainability context) and the provision under which justice can flourish and under which obligations to later generations can be fulfilled (derived from the asymmetry of the sustainability relations). A sufficientarian threshold of claims can be formulated as a minimum standard of sustainability justice. Such an approach based on the sufficiency principle arguably allows better to deal with uncertainty and indeterminacy.

As the sustainability relations are often mediated by complex economic, technological and scientific systems, we argue that these structures constitute important judicanda of sustainability justice. Coping with these systems in a sustainable manner might require their reform (as an instrument of justice), and also supposes the existence and definition of adequate claim addressees (such as collective actors). We discuss different instruments that correspond to different specifications of claims, on both individual and collective, and on both local and global levels. The informational base to measure the attainment of justice needs to be consistent with the claims formulated in the specific conception of sustainability justice, may differ between the sustainability relations and needs to take account of epistemological restrictions.

We emphasize the need for a consistent specification of the conceptual elements in a conception of sustainability justice in at least two ways: First, the specification of the elements of justice should fit the concept of sustainability with its core characteristics and underlying assumptions; and second, the elements should be consistent with each other.

The contribution of this paper to the discussion of sustainability and justice lies in its systematic and conceptual approach. In contrast to many contributions in the literature, we develop a meta-approach to sustainability and justice, mapping out requirements for conceptions of sustainability justice by considering all three relations of sustainability: with contemporaries, future generations, and nature. With this, our approach identifies the space within which existing and potential future conceptions of sustainability justice may be located. Our approach can thus help to compare and evaluate different conceptions of sustainability justice, and develop new ones.

This conceptual and analytic approach at the same time is a limitation of the paper: Due to the analytic approach, slicing a justice conception into its conceptual elements, some issues come up several times, as implications that concern several conceptual elements. This may seem redundant at times, but is a result of our systematic approach. Furthermore, we do not develop a specific conception of sustainability justice ourselves. While this not the intention of the paper, it would certainly be interesting and worthwhile to develop a conception of sustainability justice which fulfils all the requirements formulated in the paper and is consistent across elements and with a well-reasoned ethical foundation. The conceptual and systematic framework set out in the paper will certainly serve helpful in such an endeavour. Moreover, we only touch upon the implications of our framework for sustainability research and policy, and it would be interesting to work this out in more detail.

### **Paper 3: Economic analysis of trade-offs between justices**

This paper addresses the contribution of (sustainability) economics to the discussion of justice. We argue that economics can be helpful for assessing the trade-offs, or other possible relationships, between two of the justice objectives of sustainability: intergenerational and intragenerational justice.<sup>3</sup> Again, the conceptual structure of justice serves as a structuring device to discuss how inter- and intragenerational justice may be specified.

We build on Robbins' (1932) definition of economics as the science that "studies human behaviour as a relationship between ends and scarce means which have alternative uses" (Robbins 1932: 15), that is, we understand economics as defined by its method. Economic analysis thus becomes relevant to the discussion of justice when there is scarcity in the use of instruments of justice which can be put to alternative uses in the attainment of the two justice objectives.

Depending on assumptions on the structure and functioning of a given system (including natural, technological and institutional factors), the relationship between the two justice objectives in a given situation (with a particular combination in the degrees of attainment of each justice objective yet achieved) may be characterized in one of the following three ways: (1) It may be possible to further the attainment of inter- and intragenerational justice independently, i.e. attaining one objective to a higher degree does not necessitate any change in the attainment of the other one (independence), (2) an improvement in the attainment of one justice objective supports the attainment of the other one, i.e. there is a potential for a win-win improvement (facilitation), (3) none of the two justice objectives can be attained to a higher degree without reducing the degree to which one attains the other one (rivalry).

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<sup>3</sup> While we acknowledge that sustainability may also include justice towards nature (as introduced in Section 1 of this introduction and in Paper 2), we focus on inter- and intragenerational justice in this paper.

We further base our analysis on three assumptions: We assume that (1) inter- and intragenerational justice are of equal normative rank, (2) it is possible to measure the degree of attainment of each justice objective, and (3) it is possible to describe the outcome of using scarce instruments of justice for a given context.

Under these assumptions, economic analysis can delineate the “opportunity set” of politics with respect to the two normative objectives of inter- and intragenerational justice, i.e. it can describe which outcomes are feasible in achieving the two objectives in a given context, and which are not. The criterion of efficiency then characterizes the non-wasteful use of scarce resources (as instruments of justice) to attain the justice objectives: A situation is efficient with regard to the justice objectives if it is not possible to further the attainment of on one justice objective without decreasing the attainment of the other justice objective. Under this definition of efficiency, an efficient situation is characterized by a rivalry between the two justice objectives, and an inefficient situation is characterized by the potential for a win-win improvement (facilitation), or by independency in the further attainment of the two justice objectives.

A contribution of the paper in the context of this thesis is to clarify the role of economic analysis and of the criterion of efficiency for the discussion of justice. While the two justices are primary normative objectives, efficiency – when directed at the attainment of these justice objectives – acquires the status of a secondary normative objective, claiming that one *should* use instruments of justice in a non-wasteful manner. The contribution of economic analysis lies in pointing out which combinations of attaining the two justice objectives are feasible in a given context, i.e. it can delineate the “opportunity set” of society, and distinguish efficient from inefficient combinations. Economic analysis cannot say which of the efficient outcomes is preferable, but it can delineate the opportunity costs of moving from one to the other. Whether or not this movement is ethically desirable is left to a societal decision or to ethical debate. For example, a small sacrifice in terms of, e.g., intragenerational justice, may be justified if it enables a big gain in terms of intergenerational justice. Furthermore, economic analysis can help to identify how a change in the system determinants (including natural, technological and institutional factors) changes the “opportunity set”.

A limitation lies in the fact that the paper only considers two normative objectives. For the case of three or more normative objectives of equal rank, the result that a potential for a win-win improvement of two values signals inefficiency requires reinterpretation (cf. Hoberg and Baumgärtner 2014). Moreover, the applicability of the results may be limited by the epistemological restrictions present in the sustainability context (see Paper 2), where the “opportunity set”, and the factors determining its shape, can be described only partially or only under uncertainty.

#### **Paper 4: Reconstructing the “biopiracy” debate from a justice perspective**

As one case for a justice debate in sustainability policy, in this paper I turn to biodiversity policy and the “biopiracy” debate associated with the Convention on Biological Diversity (CBD). The CBD was set up not only to foster the conservation

and sustainable use of biodiversity, but also to address problems of justice connected to the utilization of biodiversity. The requirements of the CBD regarding the utilization of genetic resources and traditional knowledge, in the so called Access and Benefit-Sharing (ABS) framework, are based on an exchange perspective, leading to approaches of justice-in-exchange. The ABS framework emerged as a response to the practice of bioprospecting (the search for biological and genetic materials for practical applications in science and industry) and connected allegations of “biopiracy”. While no general definition of this term exists, “biopiracy” usually refers to some kind of offense to developing countries or indigenous and local populations regarding the utilization of genetic resources and traditional knowledge for (potentially patented) inventions (cf. Federle 2005: 25). This paper addresses the question which problems of justice arise regarding the utilization of genetic resources and traditional knowledge, especially if associated with patenting.

The analysis builds on a theoretical framework which refers both to the core meaning of justice, the domains of justice and the conceptual structure of justice (as in Paper 1), and to the legal, philosophical and economic background of patenting, elaborating on the general justification of patents (Machlup 1958). The paper uses a comparative approach to assessments of justice (with reference to, inter alia, Sen 2009), which aims at enhancing justice case-by-case and step-by-step rather than defining and achieving perfect justice. The aim of the analysis is to assess arguments which are brought forward in the “biopiracy” debate and to evaluate them, rather than to construct a theory of “biodiversity justice” from a particular line of ethical reasoning.<sup>4</sup>

The reconstruction focuses on the different justice claims advanced in the “biopiracy” debate, and the arguments that can be made to support these claims. The paper is organized along these arguments, while the conceptual structure of justice (in particular: the elements claim holder, claim content, and claim addressee) are used to structure the arguments. The analysis focuses on discussing the grounds of justice that are (or could be) given for each claim, discussing whether they can be rationally reconstructed, i.e. whether the ground of justice is actually applicable to the situation and can ground the claim that is advanced. I start by examining one of the most common claims, to respect the procedural and substantial requirements of the CBD for access and benefit-sharing, then clarify the allegations connected to the term “bad patents” (i.e. erroneously granted patents), furthermore look at claims of moral desert, reciprocity, human rights, and – somewhat outside the moral sphere – incentives, as well as conservation financing, and finally touch upon further issues of structural justice. By this reconstruction of the “biopiracy” debate, it can be shown that the exchange perspective is insufficient and therefore complementary domains of justice, namely of distributive justice, corrective justice and structural justice have to be taken into account.

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<sup>4</sup> The paper thus takes a non-ideal theory stance in its philosophical foundation and a reconstructive approach to the analysis of justice issues regarding the utilization of genetic resources and traditional knowledge. See Section 3 of this introduction for discussion.

The paper sketches some implications for step-by-step improvements of justice and for further analysis. Practical implications include the need for capacity building to ensure a level playing field in negotiations about benefit-sharing. Furthermore, a reform of the patent system to address allegations regarding “bad patents” and structural injustice is needed and should include a strict emphasis on the distinction between invention and discovery. Also, other forms of rewards and incentives other than intellectual property need to be considered. For further analysis, the paper concludes that many of the distributive issues discussed do not only concern the use of genetic resources and traditional knowledge, but biodiversity more generally, and that the concern for justice in the CBD should therefore be conceived more broadly. Further, the conclusion hints at the interplay of the CBD and other institutions in the attainment of justice claims, such as human rights claims.

A limitation of the paper can be seen in its omission of aspects of justice towards nature and of justice towards future generations. This limitation was incurred for pragmatic reasons, to limit the scope of the discussion, and the importance of these two justice relationships, especially in the context of sustainability, is only highlighted in the conclusion of the paper.

The paper contributes to the aims of this thesis by providing a comprehensive analysis of the (anthropocentric) justice claims within the “biopiracy” debate. The paper exemplarily shows the fruitfulness of classifying and structuring claims of justice according to the domains and the conceptual structure of justice, and of evaluating the arguments (i.e. grounds of justice) used to justify these claims. It therefore shows one way to clarify justice claims in the sustainability context, namely by a reconstructive analysis of the (written) arguments given in a debate. The paper furthermore provides some limited practical implications.

#### **Paper 5: Notions of justice held by stakeholders of the fishery in Newfoundland, Canada**

As another case of justice problems in sustainability policy, this paper addresses justice issues in the management of fish stocks which are threatened by overexploitation. The paper aims to identify the notions of justice held by stakeholders of the fishery in Newfoundland, Canada. In contrast to Paper 4, which focusses on the (written) justice claims advanced in a debate, this paper focusses on the (spoken) justice judgments by people who, at least to a large extent, do not express their justice judgments in written and public form in such a debate.

We pursue a dual research interest in this paper: First, at the level of the particular case, we want to contribute to a better understanding of the situation in terms of justice. Second, at the general theoretical level, we are interested how well people’s stated, empirical notions of justice may be captured in terms of the conceptual structure of justice introduced in Paper 1.

To date, only little attention is paid to issues of justice within social science fisheries research (Hernes et al. 2005). That is, there is a need to explore this field and to discover which issues of justice may play a role. To address this research gap, we use qualitative, semi-structured in-depth interviews, allowing for new and unexpected issues and concerns of justice to come up.

We base our analysis on interviews with 21 stakeholders of the Newfoundland fishery, using an interview guide that was based on the conceptual structure of justice. We use a combination of inductive and deductive coding to structure and interpret our results. We discuss the judgments of the stakeholders for each conceptual element.

While there is considerable diversity in the stakeholders' specification of the conceptual elements, there is also considerable agreement, particularly in seeing the (inshore) fish harvesters as claim holders and the government as claim addressee, as part of larger group of claim addressees. As crosscutting issues, we find that most interviewees demand participation of all relevant stakeholders in the decision-making process and that the outcome should particularly enable the inshore fish harvesters to make a living from the fishery. Moreover, rules play an important role in the justice notions of the interview partners. Overall, the fishery is both a source of income and food, and a way of life. This implies that Newfoundlanders will need to find a balance between supporting and maintaining the small-scale fishery and moving on to new sources of livelihoods. This is connected to a twofold challenge: securing the continued existence (and rebuilding) of the fish stocks, and securing the continued existence of the communities who traditionally depend on the fishery. As future generations and, to some extent, natural entities are also conceptualized as claim holders in this context, one can understand the questions of justice in the Newfoundland fishery as questions of sustainability (referring back to the discussion on sustainability justice in Paper 2).

We identify patterns in the results and put the results into perspective by relating them to the fisheries management literature. Moreover, we also discuss how the results resonate with exemplary theories of justice. Schlosberg's (2004) argument that recognition, participation and distribution are all important aspects of justice can be confirmed for the context of the Newfoundland fishery. The concern of many interview partners for those most dependent on the resource resonates with Rawls' (1971) priority for the worst-off, and the claims to make a good living and for participation and voice may be linked (cautiously) to the substantial freedom and the choice demanded by the capability approach (Sen 1990, 1992, 1999 and Nussbaum 2000). On the other hand, maximising aggregate utility (as in utilitarianism, based on based on the works of Mill [1871] 1998 and Bentham [1789] 1970) was no primary justice concern for any of the interview partners. The interview partners took a rather differentiated and pluralistic stance. For example, they mentioned several different principles of justice, implying that, e.g., a concern for equality (as in Rawls' theory) should be complemented by other justice concerns. Moreover, one may argue that once basic justice concerns are satisfied, other normative goals also play a role for the interview partners, such as conservation of the resource or concerns for efficiency and overall welfare.



Abstracting from the case, the paper is a contribution to empirical justice research and indicates the contested and pluralistic nature of justice. We discuss some implications for normative theorizing: In the words of David Miller (1992, 1999), normative theorists should take “what the people think” into account. While normative theory plays an important role for the consistent justification of justice conceptions (ensuring, *inter alia*, that justice conceptions are truly impartial and separate from other normative goals such as efficiency and other motivations such as self-interest), it needs to take into account what is important for those impacted, if it wants to be relevant for the actual realization of justice. Empirical assessments of justice perceptions alone, however, cannot tell us what justice requires, either. Justice should not be merely equated with acceptability, but needs to be grounded in good reasons. Therefore, a process of engagement between empirical and normative work is needed, with the goal of mutual scrutiny and enhancement.

A contribution of this paper in the context of this thesis lies in showing how empirical, stated notions of justice may be analysed using the conceptual structure of justice introduced in Paper 1, and how they may be related to normative theorizing. The qualitative approach allows exploring the field and gaining insights unexpected by the interviewer. We also contribute to methodological innovation by combining inductive and deductive coding in an innovative way and by speculatively identifying patterns in the results, which may point the way for further inquiry with more quantitative methods. A limitation of the qualitative approach is that it does not deliver statistically valid results. Moreover, we identified two difficulties: the translation of the conceptual elements of justice into every day speech, and the difficulty of distinguishing between justice and other normative criteria. The latter observation confirms that empirical work on justice cannot do completely without a normatively grounded (at least core) idea of justice.

### **3. Discussion and conclusion**

Looking at the five papers of this thesis together, I will discuss some of the main issues, achievements and difficulties of this thesis and relate them to some broader debates on sustainability and on justice.

#### **The relationship between sustainability and justice**

In Section 1 of this introduction, I represented the normative dimension of sustainability as referring to justice in a threefold sense: intragenerational justice, intergenerational justice, and justice towards nature. This is in line with the basic orientations in sustainability economics (Baumgärtner and Quaas 2010, Baumgärtner 2011) and sustainability ethics (Becker 2012).<sup>5</sup> However, given the contested nature of both sustainability and justice (Dobson 1998, Jacobs 1999, Connelly 2007, Zaccai 2012), this relationship between justice and sustainability is not undisputed (see also Dower 2004).

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<sup>5</sup> See also Agyeman et al. (2003: 3) and Dobson (1998: 244f.) for positions that advocate a threefold justice objective in the context of sustainability.

I would like to discuss two ways in which positions on the relationship between justice and sustainability may differ from the threefold justice interpretation described above:

- (1) Sustainability may be interpreted as a societal goal distinctive from justice. The normative dimension of sustainability may be captured in terms other than justice, e.g. as long-term responsibility (Gethmann and Mittelstrass 2008), or as obligation to sustain certain types of capital for reasons of human welfare or duties to nature, but not necessarily for justice reasons (as in the three sustainability conceptions distinguished by Dobson 1998). Sustainability thus understood can then be related to justice as a distinct objective. For example, one may ask whether (social) justice is functional for (environmental) sustainability (Dobson 1998: 240ff.).
- (2) Sustainability may be interpreted in terms of justice, but referring only to one or two of the justice objectives. As discussed in Paper 2, the sustainability relations (with contemporaries, future generations, and nature) are interpreted differently by different sustainability conceptions. Particularly, the relationship with nature may be interpreted as crucial in itself, or as instrumental to human interests or welfare (see also Dobson 1998: 240). In the latter case, sustainability justice refers to relationships between humans only, i.e. to (anthropocentric) intra- and intergenerational justice (e.g. Ott and Döring 2008: Chapter 2). Sustainability may also be taken to refer to only one justice objective, such as intergenerational justice (e.g. Norton 1991, 2005, Ott 2014). Moreover, the justice objectives may be related differently on the “value side”, or on the “production side” (Glotzbach and Baumgärtner 2012).<sup>6</sup> The focus on only one or two justice objectives may also be grounded in pragmatic reasons.<sup>7</sup>

In the papers of this thesis, sustainability and justice are not seen as distinctive societal objectives. The first of the two options just mentioned therefore plays no further role for this thesis. Resonating with the second option, the papers of this thesis differ in the number and types of justice objectives they take into account.

Paper 2 discusses all three justice objectives (inter- and intragenerational justice and justice towards nature) and argues that sustainability justice should address them in an integrated way, hinting at some of the options and challenges of determining the

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<sup>6</sup> For the distinction between the “value side” and the “production side”, see also Le Grand (1990). See also Paper 3.

<sup>7</sup> For example, Ott (2014) argues that, in order not to overburden the concept of sustainability, sustainability ethics should focus on the long-term intergenerational perspective, putting both intragenerational concerns for poverty reduction and concerns of justice towards nature to the side, albeit “in the close surroundings” of sustainability. Norton (1991, 2005) argues that an intergenerational perspective is sufficient to capture both the concerns of those advocating environmental concerns and of those concerned with the claims of future generations. Both of these authors are pragmatic in the sense that they try to establish an ethics of sustainability with minimal argument. Another pragmatic reason to focus on only one or two of the justice objectives may be to limit the scope of discussion when working on a particular problem.

relationships between these justice objectives on the “value side”. Paper 3 understands sustainability as referring to inter- and intragenerational justice, and an equal normative rank of these justice objectives. Paper 4 pragmatically limits its discussion to human claims within the “biopiracy” debate, while acknowledging that a further analysis should pay more attention to claims of nature and future generations. Paper 5 finds that the interview partners name claim holders within the current generation of humans, within future generations of humans, and within nature. Because Paper 1 does not address sustainability directly, it takes no stance on the relationship between sustainability and justice.

### **Different conceptualizations of nature**

The papers of this thesis employ different ways of conceptualizing nature. Paper 2 conceives of nature as a potential claim holder, but also as a mediating system in the relationships between humans. Paper 3 mentions natural resources as instruments of justice for intra- and intergenerational justice claims. Paper 4 starts from a very broad notion of biodiversity and narrows it down to the use of genetic resources and traditional knowledge as a justice issue between humans, deliberately leaving out questions of justice towards nature. Paper 5 conceives of marine ecosystems as delivering provisioning and cultural ecosystem services, but also touches on justice claims of non-human entities. So, while nature is conceptualized as a resource, ecosystem service or instrument of justice in all papers, natural entities are addressed as claim holders in their own right only in some of the papers. However, all analyses principally leave open the possibility to include nature (or natural entities) as claim holders.

### **Comprehensive analysis of structural elements of justice and different domains of justice, building on different foundations**

The conceptual structure of justice developed and presented in Paper 1 has been employed and “tested” in different contexts in this thesis – exploring the justice dimension of sustainability (Paper 2), taking justice as a normative foundation of sustainability economics (Paper 3), reconstructing claims of justice in the “biopiracy”-debate (Paper 4), and assessing the justice perceptions of stakeholders in the Newfoundland fishery (Paper 5). While the conceptual structure has undergone some changes and redevelopments over the time-span of this thesis, it has proven fruitful as a structuring device for the description and analysis of justice issues in the sustainability context and beyond. As a purely formal device, it gives no normative guidance on which domains of justice to look at, which grounds of justice to apply, or which ethical framework to adopt. However, it can be helpful to be able to speak clearly about these issues. Moreover, it is applicable to different domains of justice and aims at comprehensiveness in incorporating different conceptual elements of justice, some of which have not been differentiated from each other in other conceptual analyses.

The analysis furthermore shows that different domains of justice are important. In Paper 2, we emphasize the importance of taking economic, technological and scientific

systems as *judicanda* and thus refer to an aspect of structural justice. In Paper 4, the reconstruction of the “biopiracy” debate shows that justice-in-exchange is too narrow for an understanding of the justice problems associated with the use of biodiversity, and that structural justice, distributive justice, and corrective justice also play a role. In Paper 5, respondents emphasize not only distributive aspects, but also call for participation and recognition of relevant stakeholders and a just design of institutions. Throughout the thesis, the issues of just institutions and systems, and of structural justice emerge as important topics (while not denying the importance of the other domains of justice).

The papers draw on different sources in the foundation of justice conceptions: Paper 1 discusses exemplary philosophical and ethical frameworks and grounds of justice from the history of philosophy, to back up the conceptual analysis of justice. Paper 2 discusses philosophical and ethical frameworks and grounds of justice that may have implications in the sustainability context. Paper 4 reconstructs actual claims brought up in the “biopiracy” debate, and discusses their (potential) normative justification. Paper 5 reconstructs conceptions of justice from the fishery context, and relates them to normative theorizing. Paper 3 does not discuss any foundations of justice conceptions on the “value side”.

### **Between ideal and non-ideal theorizing, empirical analysis, and implementation**

Looking at different types of *normative* work on justice, one can distinguish, according to Robeyns (2008), between (1) ideal theory, which builds on idealizing assumptions, (2) non-ideal theory, which lifts certain idealizing assumptions and is more concerned with feasibility, and (3) action design and implementation.

These categories, rather than a sharp distinction, form a multidimensional continuum in which works on justice differ from each other. For example, Valentini (2012) distinguishes three strands of the debate about ideal and non-ideal theory, making the distinction between ideal and non-ideal theory along different dimensions: (1) full vs. partial compliance of claim addressees as an underlying assumption of the theory, where ideal theory assumes full compliance of claim addressees with what is required by justice and non-ideal theory takes into account that claim addressee may not be motivated to comply, (2) utopian vs. (more or less) realistic theory, where the more feasibility constraints (such as scarcity and limited altruism) are taken into account when formulating principles of justice, the more “non-ideal” the theory is, and (3) end-state vs. transitional theory. Regarding the third dimension, Stemplowska (2008) argues that there are different roles of normative theory: the evaluation of some *judicandum* against a “final landmark” on the one hand, and recommending change on the other hand, and concludes that different types of theory are needed for these different purposes. Aiming at the second purpose of normative theory, Sen (2009) advocates a transitional (step-by-step) approach to justice.

In addition to the normative work on justice, one may add a fourth category: Justice research which is primarily empirical and non-normative (e.g., Miller 1992), sometimes

with the aim of reconstructive theory building “bottom up” (e.g., Young 1990, Miller 1999, Schlosberg and Carruthers 2010), and with the aim of actual improvements in justice (e.g., Schlosberg 2004).

The papers of this thesis make contributions at different points along this multidimensional continuum: While Paper 1 provides a purely formal analysis of the justice concept, the conceptual structure of justice presented in this paper may be used as a structuring device for ideal, non-ideal, implementation-oriented and empirical work on justice, in constructive or reconstructive ways. Paper 2, while not concerned with concrete cases of sustainability policy, nevertheless finds that limits are a core characteristic of sustainability, and argues that a conception of sustainability justice needs to give guidance on how to weigh conflicting justice claims in the face of feasibility concerns. A conception of sustainability justice therefore must be non-ideal at least in a weak (moderately realistic) sense. Paper 3, on the other hand, assumes a rather ideal conception of justice on the “value side”, and brings in feasibility on the “production side”. It works on a strict distinction between “ideal theory” and “non-ideal” politics. However, even if assuming “non-ideal” normative theorizing, the main conclusion on the contribution of economic analysis – that it cannot decide which normative objectives to pursue, but can delineate the opportunity set of feasible combinations of attainment of the normative objectives – remains largely intact. Paper 4 takes a transitional, step-by-step approach (Sen 2009) to the achievement of justice which is “non-ideal” in the sense of the third dimension mentioned above, giving some hints at practical implications. Paper 5 provides an empirical analysis of stakeholders’ justice notions which could feed into policy design and may also have implications for normative theorizing.

Taken together, the papers of this thesis thus provide a broad approach to issues of sustainability and justice, integrating aspects of ideal and non-ideal theorizing, economic analysis, empirical justice research and hints at institutional implementation (on institutional analysis of justice, see also Stumpf et al. 2012). Further steps could include (a) an extended analysis of the cases from biodiversity and fishery policy as well as cases from other fields of sustainability policy, also including quantitative analyses and assessments of actual (e.g., distributive) impacts and background constraints and factors, (b) integrating and feeding insights from these cases back into the general framework of sustainability justice, (c) developing a concrete conception of sustainability justice that is consistent with the requirements of Paper 2 and with these feedbacks, (d) developing more concrete implications for policy design and implementation, based on ethical and economic analysis.

### **Overall conclusion: Contribution to sustainability ethics and sustainability economics**

This thesis contributes to the debate on justice and sustainability in several ways. Employing the conceptual structure of justice, this thesis provides a structured account of justice conceptions and claims in the sustainability context. It provides conceptual clarifications on justice, efficiency and sustainability. It contributes to sustainability

ethics (Becker 2012) by discussing challenges and requirements for sustainability justice, based on an analysis of the sustainability concept. It outlines the contribution of economic analysis to the discussion of justice via the secondary normative criterion of efficiency and via the description of the “opportunity set” of feasible justice outcomes. By analysing in-depth the three justice objectives that are advocated by sustainability economics (Baumgärtner and Quaas 2010, Baumgärtner 2011), this thesis contributes to the normative foundations of sustainability economics. Furthermore, it analyses specific cases of sustainability policy in terms of justice, and gives some hints at institutional implementation of more just policies for sustainability.

Overall, this thesis integrates aspects of ideal and non-ideal theorizing, economic analysis, empirical justice research and hints at institutional implementation in the debate on sustainability and justice. By highlighting some of the issues that are at stake in each of these fields, it also provides starting points for further analysis, as outlined above. Concluding, the thesis can be seen as a substantial contribution to the ethics and economics of sustainability.

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**Paper 1:**  
**The conceptual structure of justice**

# The conceptual structure of justice

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## Abstract

Justice is a contested concept and gives rise to many different and competing conceptions, i.e. interpretations of the concept. To capture the multifarious dimensions of justice, we present a formal conceptual structure of justice. We argue that every conception of justice can be described by specifying the following conceptual elements: the community of justice including claim holders and claim addressees, their claims (and corresponding obligations), the *judicandum* (that which is to be judged as just or unjust), the informational base for the assessment, the principles of justice, and on a more practical level, the instruments of justice. We argue that by specifying these conceptual elements of justice, it is possible to analyse and compare different conceptions of justice and to explore new definitions of justice in an analytical way (philosophical-analytical purpose). We further argue that the conceptual structure of justice helps in the evaluation of concrete policies, actions, or states of the world and in institutional implementation of justice, by explicating any idea of justice in a manner that provides concrete links to the relevant context (societal-political purpose).

## Keywords

Conceptual structure of justice, meta-ethics, institutional implementation, public policy evaluation

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## 1. Introduction

Justice plays an important role in moral judgments. It has been a prominent topic in the history of moral philosophy and experienced a revival in philosophy of the 20<sup>th</sup> and 21<sup>st</sup> century, particularly since Rawls' (1971) *A Theory of Justice*. Justice also is a normative demand in more and more areas of public policy, ensuring legitimacy and wide support of policies in democratic societies. This includes, for example, access to education (Brighouse 2000), access to medicines and health services (Hollis and Pogge 2008, Pogge et al. 2010), and global environmental policies, regarding e.g. the distribution of benefits and costs of climate change and climate policies (Gardiner et al. 2010) or the access to and benefit sharing of genetic resources (Schroeder 2009, Stumpf 2014).

The crucial challenge for policy making then is: How to implement the general and abstract idea of justice in a concrete context through suitable institutions? This requires much more than a general, encompassing but therefore also necessarily vague idea of justice. It requires a workable conceptualization, capturing the general idea of justice and at the same time providing concrete links to the relevant context, that can serve as a roadmap for institutional implementation.

In this paper, we present a formal, general and universal conceptual structure of justice, which may serve at least two purposes:

- (1) It allows analysing and comparing different conceptions of justice and exploring new definitions of justice in an analytical way (philosophical-analytical purpose).
- (2) It allows explicating any idea of justice in a context-relevant manner so that it can be used in the evaluation of concrete policies, actions, or states of the world and in institutional implementation of justice (societal-political purpose).

Our analysis proceeds on the meta-level of ethics, i.e. it is focused on the formal conceptual structure of justice and insofar independent of exactly what primary ethical position one adopts. We argue that it is possible to approach and specify any idea of justice through a universal and general conceptual structure.

While our focus is on the general concept of justice, we also refer to specific conceptions of justice to illustrate particular points, and to back up and reinforce our analytical argumentation in a synthetic way. We aim to provide a theoretical framework that can serve future research and debate about how to specify justice and how to implement justice in different concrete contexts.

While we are not the first ones to distinguish different elements of justice conceptions (see e.g. Dobson 1998, Caney 2005, Page 2007a, 2007b, Risse 2012), our approach aims at a high level of generality and abstraction. For instance, it is applicable to all "domains of justice" (see Section 2), in contrast to most conceptual structurations which focus mostly on distributive justice.

The conceptual structure of justice, as a purely formal framework, may act as a structuring device for ideal, non-ideal, implementation-oriented and empirical work on justice (cf. Robeyns 2008, Miller 1992). The structured approach makes it easy to connect abstract considerations to concrete circumstances and cases.

We have developed and tested the conceptual structure through several applications, including a reconstruction of the “biopiracy”-debate (Stumpf 2014), an empirical investigation in the notions of justice held by stakeholders in the fishery (Kahmann et al. 2014), taking justice as a normative foundation of sustainability economics (Baumgärtner et al. 2012, 2013), and exploring the justice dimension of sustainability (Stumpf et al. 2014).

The paper is organized as follows. In Section 2, we introduce the general concept of justice as a contested concept giving rise to different conceptions of justice, which can belong to different domains of justice, and discuss different foundations for justice conceptions: ethical frameworks, grounds of justice, and the reconstruction of actual claims of justice. In Section 3, we present the conceptual structure of justice comprising conceptual elements which any comprehensive conception of justice should specify. In Section 4, we discuss how the conceptual structure may be applied, in particular by discussing one example of structuring an idea of justice for institutional implementation. We conclude in Section 5.

## **2. Justice: general concept, domains of justice, and foundations for justice conceptions**

As an ethical concept, justice belongs to the realm of judgments about right and wrong, good and bad. A main distinctive characteristic of justice is that it is a specific *relational* ethical concept. Justice considers actions, actors, institutions or states of affairs with regard to their *impact on others* and their entitlements (goods, rights, desert). Aristotle, for example, states that justice is always “effective in relation to somebody else” (Aristotle [EN] 2000: Book V.2, 1130b).

More specifically, justice concerns that part of morality which is *owed* to others. Mill ([1871] 1998: Chapter V), for instance, distinguishes duties that are ethically desirable but are not related to specific rights of others, such as e.g. charity, and duties that are ethically required due to the rights of others, such as not to do harm to others. Only the latter category would then fall under the concept of justice as in this case ethical requirements relate to definable claims or rights of others (Mill [1871] 1998: Chapter V, see also Young 1994, Ott and Döring 2008: 59ff.).

### **2.1 Justice as a contested concept**

Justice is a multifarious idea and as such, it is a prime example of a contested concept (Mazouz 2006). Contested concepts generally have two levels of meaning, reflected in the distinction between *concept* and *conceptions* (Gallie 1956, Rawls 1971). The first level of meaning, the level of the *general concept*, refers to the unitary, undisputed, but

also vague general idea represented by the concept and is constituted by a number of core characteristics (Jacobs 1999). The second level of meaning, the level of *specific conceptions*, is “where the contest occurs: political argument over how the concept should be interpreted in practice” (Jacobs 1999: 25). At this second level of meaning, different ways in which the concept can be understood and specified, and therefore alternative conceptions of the concept, are discussed.

The general concept of justice refers to the balance of the owed, demandable claims (or rights) and the corresponding obligations (or responsibilities) within a community of justice from the standpoint of impartiality and equal consideration (e.g., Gosepath 2007). Different conceptions of justice are exemplified by different theories of justice in political philosophy and different ideas of justice brought forward in civil society and politics, showing the different ways in which the concept might be interpreted and its elements specified.

## **2.2 Domains of justice**

Building on a typology introduced by Aristotle ([EN] 2000), one can distinguish different *domains* of justice that deal with different fields of application of justice claims: e.g., distributive justice deals with access to scarce resources, justice-in-exchange governs voluntary exchanges, corrective justice governs the punishment and rectification of harms done and structural justice concerns the background conditions of justice (Aristotle [POL] 1985, Pogge 2006, Petersen 2009, Young 2011).

In recent times, scholars have distinguished further domains of justice, such as gender justice (see Robeyns 2008) or climate justice (see Gardiner et al. 2010). These “new” domains may be interpreted as combining several of the Aristotelian domains, while adding further concerns. For example, gender justice may be interpreted as a combination of distributive, structural and corrective justice, while adding aspects of recognition.

## **2.3 Foundations for justice conceptions: ethical frameworks, grounds of justice, and reconstruction of actual claims**

In making judgments about what is just or unjust, one may draw on different sources. Many traditional theories of justice are grounded in a broader *philosophical and ethical framework* giving ethical reasons for the specification of its elements. For example, Aristotle’s ([EN] 2000) conception of justice is embedded in his virtue ethics and, ultimately, in his conceptions of rationality and the human soul. Mill’s ([1871] 1998) theory of justice is based on a utilitarian framework and assumes pain and pleasure as crucial elements of ethics. Kant ([1785] 1998, [1788] 1997) considers a strong and active role of reason for ethical guidance, as does to some extent, Rawls (1971). Based on these broad ethical foundations, one can then deductively work out the meaning of justice and injustice and the specification of each of the elements of justice.

Risse (2012) refers to the reasons why claims of justice are legitimate for a certain group of claim holders as *grounds of justice*. Some of the grounds that Risse identifies

are relational (such as sharing a state, membership in the global order, subjection to the global trading system), while others are nonrelational (such as common humanity and common ownership of the earth).<sup>1</sup> Risse argues that there is a plurality of grounds of justice, giving rise to different claims according to different principles within different, but potentially overlapping or embedded communities of justice. Risse concludes that obligations of justice “are often overdetermined and can be captured in various ways” (2012: 17). In certain cases, however, different grounds of justice may not point into the same direction, but give rise to conflicting claims and obligations.

Taking a different approach, some scholars turn to the *actual claims* of justice brought forward by individuals and groups, such as social movements, and then inductively abstract from the cases to arrive at general conclusions about justice. For example, Schlosberg and Carruthers (2010) analyse the concerns of justice formulated by different environmental justice groups. Iris Young (1990: 4) similarly argues for a sense of justice that builds on “listening” to claims of, e.g., social movements, contrasting this with a “self-standing rational theory” of justice unable to pay attention to actual institutions and relations.<sup>2</sup> Similarly, communitarian scholars (e.g. Walzer 1983, De-Shalit 1995) regard shared norms and moral traditions, especially a common conception of the good life within a community, as necessary background for political debate on justifiable principles of justice.

Proponents of the method of *reflective equilibrium* argue that to arrive at a justice conception one needs to dialectically consider the judgments made when faced with particular moral cases, and the principles given for these judgments upon reflection (Rawls 1971, Sandel 2009: 28). The method of reflective equilibrium assumes the revisability of considered judgments, principles and theories in light of their mutual coherence and as such stands in contrast to deductivist approaches where some beliefs are set as fixed or even self-evident (DeGrazia 2001, Daniels 2013).<sup>3</sup>

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<sup>1</sup> In Risse’s terminology, the term “relational” only refers to “essentially practice-mediated relations”, i.e. to relations in which certain individuals stand through practices such as sharing a state or taking part in the same global trading system. “Non-relational” grounds of justice, in contrast, refer to features (e.g. being human) shared by all of claim holders, independent of whatever practical relations they happen to be in (Risse 2012: 7ff.).

<sup>2</sup> This kind of approach is often connected with a concern for real world improvements of justice, in the sense of non-ideal theory (cf. Robeyns 2008), and therefore aims at understanding the real impediments to justice, such as, e.g. missing recognition of certain group identities, and the claims of justice that are made by local stakeholders. In this context, Schlosberg (2004: 520) argues as follows: “If the interest is about attaining justice, rather than attaining a sound theory of justice, recognition is central to the question and the resolution – and is not simply to be assumed.”

<sup>3</sup> There are different positions on the epistemological status of considered judgments (or, intuitions): a) they might be seen as referring to some ultimate moral truth existing in the world, or b) they might be seen as the result of practical experience in making judgments (such as by “wise men” in favorable circumstances, Rawls 1951), either individually or culturally (as when collective experiences about morality are said to be stored in the stories of the bible).

In addition to the ethical arguments and normative assumptions just discussed, different conceptions of justice build on, explicit or implicit, assumptions about how the world is and what can be known about it (“world views” or “basic constructions of the world”; cf. Baumgärtner et al. 2008: Sec. 4, referring to all three types of assumptions). In the next Section, we will therefore also highlight some points where ontological and epistemological assumptions may play a role.

### 3. The conceptual structure of justice

Different conceptions of justice differ in several ways. A conceptual analysis of justice shows that, to fully describe a conception of justice, one needs to specify a number of different elements (see e.g. Sen [1988] 2008, Dobson 1998, Caney 2005, Page 2007a, 2007b, Risse 2012). We propose a conceptual structure of justice, which allows to analyse and compare different conceptions of justice and to explore new definitions of justice in an analytical way. The conceptual structure of justice comprises crucial elements of every conception of justice: (1) the community of justice, consisting of claim holders and claim addressees (2) the claims of the claim holders and corresponding obligations of the claim addressees, (3) the *judicandum*, i.e. that which is judged to be just or unjust, (4) the informational base for the justice judgment, (5) the principles of justice, and (6) on a more practical level, the instruments of justice. In the following, we introduce these elements in turn; to illustrate the different elements and to back up our argumentation, we refer to exemplary conceptions (or theories) of justice.

#### 3.1 Community of justice

Who is included into the justice consideration? This question refers to the delineation of the community of justice. Within the community of justice, we can distinguish between two potential roles of its members: that of a claim holder (holding particular claims) and that of a claim addressee (bearing responsibility for the fulfilment of claims).<sup>4</sup> This terminology refers not only to distributive justice, but also to other domains of justice such as corrective justice, justice-in-exchange and structural justice. The community of justice is constituted of all claim holders and all claim addressees, where any one member can hold (in principle) both or only one of the roles. The status of a claim holder or claim addressee may be grounded in different grounds of justice (Risse 2012, see also Section 4.2 on the determination of claims).

To illustrate how the group of *claim holders* inside the community of justice might be defined, a look at different conceptions of justice is helpful. Most traditional theories define the community of justice as a community of humans living together in a well-defined society. Aristotle ([EN] 2000) considered the political society of the polis, a

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<sup>4</sup> In a similar vein (but more confined to distributive justice), Dobson (1998: 64ff.) also uses the term “community of justice”, but speaks of recipients and dispensers of distributive justice. Page (2007a, 2007b) uses the term “scope of justice”, which “concerns the entities identified as legitimate recipients (and providers) of benefits and burdens” (Page 2007a: 1). Caney also uses the term “scope of justice” (Caney 2005:103), while Risse speaks of the “relevant population” (Risse 2012: 4).



small state, to be the community of justice. Kant ([1785] 1998, [1788] 1997) considered all rational beings to constitute the relevant community of justice. In Rawls' (1971) *Theory of Justice*, the community of justice is constituted by the members of a nation state.<sup>5</sup> Mill ([1871] 1998) extended the community of justice (in the sense of claim holders) to all sentient beings. More recently, in the debate about animal rights some argue for an extension of the community of justice to higher sentient beings (e.g. Regan 1983, Singer 1990). Some approaches even go further and include other, non-sentient natural entities as well (e.g. Taylor 1986, Becker 2012). Who can be seen as a claim holder not only depends on who is assigned moral standing according to a ground of justice, but also who is seen as (factually) impacted within a system. This in turn, depends on ontological assumptions about the entities that exist in the world and their relationships, including their ability to impact each other.

The *claim addressees* in the community of justice bear responsibility for the fulfilment of the claims of the claim holders. This responsibility may be both positive (to see to it that the claims be fulfilled) and negative (not to hinder or harm the fulfilment of claims). This notion of responsibility is referred to as normative responsibility (Baumgärtner et al. 2014) or task responsibility (Goodin 1986).<sup>6</sup> Responsibility in a moral sense can only be attributed to a person as far as the person is free (i.e. acts voluntarily and intentionally) (Baumgärtner et al. 2006: Chapter 11, Baumgärtner et al. 2014).<sup>7</sup> Moreover, moral responsibility is usually limited to the reasonably foreseeable consequences of one's actions, which excludes responsibility for chance consequences, but includes responsibility for acquiring knowledge about foreseeable consequences where feasible (Baumgärtner et al. 2006: Chapter 11, Baumgärtner et al. 2014).<sup>8</sup> Epistemological assumptions are therefore important in the determination of responsibility, defining which properties of the system under study can actually be known. For positive responsibility, another condition of responsibility is that the actor has sufficient power to act (Baumgärtner et al. 2014).

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<sup>5</sup> Rawls considered other generations as claim holders (e.g. through his just savings rate), but not a global community.

<sup>6</sup> The term normative responsibility, according to Baumgärtner et al. (2014), refers to both moral and legal obligations. In the context of this paper, we focus on moral obligations.

<sup>7</sup> Baumgärtner et al. (2014) point out that only *persons* can bear responsibility, as only persons can have free will and the ability to act intentionally. Following John Locke ([1690] 1959), they define a person as a distinct being with an identity, self-consciousness, and the ability to reason and reflect. The status of personhood pertains to (most) individual humans, and may also apply to some collectives of humans, such as private or public corporations that have all the characteristics of a person (Baumgärtner et al. 2014). We use the term "actor" to refer to a (individual or collective) person.

<sup>8</sup> Formulated the other way round, the two constraints to an actor's moral responsibility – force (in the sense of external force, which hinders the free acting of the actor) and ignorance (in the sense of not being able to know about the consequences of one's actions) – are also called "Aristotelian conditions" (Fischer and Ravizza 1998: 12ff., Schefczyk 2012: 85 ff.). Obviously, these constraints do not apply to pure causal responsibility (describing a causal relation between some cause A and some consequence X, where A is causally responsible for X) (Baumgärtner et al. 2014).

Which claim addressee is responsible for the fulfilment of which claim may be determined according to different considerations. For claims based on relational grounds of justice, the relationship indicates who can be seen as a claim addressee. For example, the roles within a relationship (such as parents and children within a family) can give rise to certain obligations (such as the obligation of parents to care for the well-being of their children). One may also construe a special responsibility of those causally responsible for the violation of some claim to rectify this violation.<sup>9</sup> In the case of non-relational grounds of justice claims, one can argue the obligation to fulfil the claim falls, as a default at least, equally on all members of the community of justice (or their representative, such as a government). Other grounds for task responsibility include e.g. the capability to carry out a task, contractual obligations, or particular societal roles (Schefczyk 2012: 80ff.).

The normative responsibility to fulfil a certain claim must thus not necessarily pertain to a single actor. There may be claim addressees on different levels. For example, the judicial system might be a second-order claim addressee to enforce certain corrective claims against a wrongdoer (see also Stumpf 2014). Responsibility may be collective in two senses (cf. Smiley 2005): Collective responsibility in the strict sense refers to the responsibility of a *collective actor*. More loosely, responsibility may be collective in the sense that individual members of a group have individual shares of a joint responsibility (shared responsibility, Smiley 2005).

### 3.2 Claims

The notion of a claim is central to the concept of justice (Ott and Döring 2008: 47). A claim may be seen as legitimate if it can be ascribed to a member of the community of justice based on an accepted ground of justice or ethical position. It is a something to which the claim holder is fundamentally entitled. Claims may be formulated as positive claims, i.e. to a certain good, or as negative claims, demanding freedom from harm.<sup>10</sup>

In general, the definition of claims depends on what counts as an interest, or good, or right of those eligible as claim holders according to some ground of justice. For example, the determination of claims has been grounded in basic natural rights of individuals (Locke [1690] 1988, Nozick 1974), human rationality and dignity (Kant [1785] 1998, [1788] 1997), human rationality and reciprocity in social cooperation (Rawls 1971), a basic instinct for individual safety (Mill [1871] 1998: Chapter V), a conception of human excellence (Aristotle [EN] 2000), or the validity of local cultural identities (Schlosberg 2004). Claims as defined in these different approaches vary, respectively, from the right to private property and its protection (Locke [1690] 1988, Nozick 1974), the claim to a fundamental respect of individual dignity (Kant [1785]

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<sup>9</sup> Schefczyk (2012: 91ff.) calls this type of responsibility (the obligation to rectify harms) consequence responsibility or liability, which may in turn be grounded in different bases, one of which (but not the only one) is causal responsibility.

<sup>10</sup> What is understood as a positive or a negative claim thus hinges on the point of reference from which, e.g., “good” and “harm” are defined.

1998, [1788] 1997), basic rights to freedom and to participation in the distribution of the benefits of social cooperation (Rawls 1971), the right for individual safety (Mill [1871] 1998), claims for proper treatment according to desert (Aristotle [EN] 2000), or recognition and a “place at the table” (Schlosberg 2004).

Claims may be different in urgency or strength. For example, Rawls (1951) argues that the strength of a claim is proportional to the presence in the claim holder of that characteristic which is relevant for this type of claim. For example, if competing claims “are for a share in a certain amount of food, then the relevant characteristic is the need for food” (Rawls 1951: 193).

While much of justice theory is “recipient-oriented” (Pogge 2006) and therefore focuses on the claims of the claim holders, it should not be forgotten that claims give rise to corresponding obligations (or responsibilities) for the claim addressees in the community of justice. As hinted at above (Section 4.1), different claim addressees may be held responsible for the fulfilment of different claims based on different considerations and according to different principles (see also Section 4.5).

### 3.3 Judicandum

The judicandum is that which is to be judged as just or unjust. There are several categories of judicanda established in the literature (cf. Pogge 2006: 863): (i) individual or collective actors, (ii) actors’ actions or omissions, (iii) social rules, i.e. laws, institutions, conventions, (iv) states of affairs or events.<sup>11</sup> A judicandum may be considered in terms of outcome, or in terms of process (consequentialist vs. procedural justice *sensu* Dobson 1998: 70). Because “just” is a normative predicate, it only makes sense to talk of such entities as judicanda that can be (either directly or indirectly) changed or impacted by a claim addressee.<sup>12</sup> In this vein, Pogge argues that “because of the normativity of justice assessments, judicanda of the first two categories have a certain primacy. It is ultimately actors – and their conduct – who bear responsibility for the justice of social rules and, in part through these rules, for the justice of states of affairs” (Pogge 2006: 863). The active perspective of those who bear responsibility for a particular judicandum, and differences in attitude and causal pathways matter for the justice assessment (Pogge 2006: 869). Of course, sometimes people complain about the injustice of states of affairs beyond human control, e.g. that it rains more in the North than in the South of a country (to give a hypothetical example). Such a statement can

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<sup>11</sup> Additionally, more complex judicanda, combining several of the “classical” judicanda, may be discussed. For example, Becker (2012) discusses “meta-structures”, composed by basic assumptions, basic evaluations, driving forces, and institutionalizations, as judicanda. Young (2011) discusses structural processes and their outcomes as judicanda.

<sup>12</sup> Therefore, ontological assumptions and empirical findings about the relationship between potential claim addressees and judicanda (i.e., whether the claim addressee is able to impact and change the judicandum) are important.

either be situated in a religious context (God as claim addressee) or constitutes an improper use of the notion of justice (Pogge 2006: 863).<sup>13</sup>

Many established theories of justice refer to social rules as *judicanda*. For example, in Rawls' (1971) *Theory of Justice*, the basic structure of society (i.e. a set of institutions) is at centre-stage of the justice assessment and constitutes the *judicandum*. Aristotle defines as just what "tends to produce and preserve happiness and its components for the political society" ([EN] 2000: 1129 b 17f). The *judicanda* of his theory can therefore be found both in (the disposition and virtue of) actors and in an order of the society that enables its members to act virtuously (Aristotle [EN] 2000). In conceptions of distributive justice, the *judicandum* is a state of affairs as defined by the allocation of certain goods (Roemer 1996, Pogge 2006).<sup>14</sup>

### 3.4 Informational base

For the assessment of *judicanda* and the evaluation of whether claims are satisfied, one needs to specify the informational base (Sen 1990: 111) for the justice judgment.<sup>15</sup> As Sen (1979) pointed out in his lecture on "Equality of What?", it is an important dimension of moral judgments which kind of information they use in the assessment of justice.<sup>16</sup>

Informational bases are mostly discussed for the domain of distributive justice: candidates given in the literature are, for example, capabilities (Sen 1990, 1999; Nussbaum 2000), primary goods (Rawls 1971), or utility (e.g., Harsanyi 1955, see also Pogge 2006). Informational bases are tightly linked to claims: e.g. if the claim is to equal benefits from social cooperation (Rawls 1971), the informational base is the "currency" (Page 2007a) in which these benefits are measured; in Rawls' case, this is in terms of "primary goods". Others may agree with the claim to equal benefits from social cooperation, but may argue that the informational base to measure whether this claim to equal benefits is fulfilled should be (equal) capabilities or (equal) utility.

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<sup>13</sup> We call this an improper use of the notion of justice because we understand justice as a normative concept. The stated example, however, refers to a purely evaluative (non-normative) use of "unjust" (Pogge 2006: 863).

<sup>14</sup> A certain change of perspective pertains to the two before mentioned conceptual elements of justice (claims and *judicanda*): while a claim is what an *individual* member of the community of justice is owed by other members of the community of justice, a *judicandum* is what is to be judged as just or unjust *overall* in a conception of justice or in a justice judgment.

<sup>15</sup> This roughly corresponds to question 3 in the conceptual analysis of the notion of justice by Caney (2005: 103): "What should people have fair shares of (income, happiness)?" However, Caney only refers to distributive goods, while we seek to incorporate other kinds of information, too. Moreover, Caney does not distinguish clearly between claims and informational base. Page (2007a) uses the term "currency" of advantage (or benefit). Risse (2012: 4) speaks of "distribuendum, metric, or currency of justice".

<sup>16</sup> While claims and *judicanda* are about the "what" of the justice judgment (on an individual respectively overall level), the informational base refers to *how* the judgment should be made, i.e. how justice shall be "measured".

Moreover, the informational base need not only refer to objects of distribution, but can also refer to other kinds of information. For instance, in the domain of justice-in-exchange the information can refer to the existence of fair bargaining positions characterized by sufficient information, rational self-control and the absence of force and fraud (procedural perspective) or to the value of the exchanged goods (outcome perspective) (see e.g. Pogge 2006, Koller 2007).

In general, an informational base does not necessarily need to be combined with a principle of equality, as Sen's question (cited above) suggests, but might be combined with a different principle (see Section 3.5).

### 3.5 Principles of justice

What are the appropriate principles of justice? Principles of justice may apply to the way claims of justice are considered and, correspondingly, how the informational base is applied,<sup>17</sup> or they may apply to the way obligations of justice are construed.

Young (1994: 8) distinguishes three broad categories of principles: equality (or parity), proportionality, and priority. Furthermore, a principle of sufficiency is advocated by some authors (Frankfurt 1987: 22, Krebs 2003: 237). These abstract principles need to be further specified, as we will discuss in turn.

Equality may be interpreted in a formal sense (equal consideration) or as a substantive principle. Equality in a formal sense (equal consideration of claim holders with equal moral standing) is uncontroversial, as it belongs to the core of the justice concept. Characteristics of fundamental equality of all human beings are crucial for many modern conceptions of justice, e.g. for Locke ([1690] 1988), Kant ([1785] 1998, [1788] 1997) or Rawls (1971).<sup>18</sup> Equality may also be understood in a substantive, distributive sense – demanding that every claim holder gets the same amount of some good (as measured by the informational base). However, equality in this substantive sense is subject to the levelling-down objection, which states that if equality can only be obtained by worsening the situation of the better-off without improving the situation of

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<sup>17</sup> Also called “pattern of justice” (Page 2007: 1) or “principle of distribution” (Dobson 1998: 63). It corresponds to question 4 in the conceptual analysis of the notion of justice by Caney (2005: 103): “According to what criterion of distributive justice should goods be distributed (equality, according to desert, or the market)?”

<sup>18</sup> Some argue that utilitarianism also fulfills this principle of equal consideration, as one person's happiness is counted for exactly as much as another's (Bentham [1789] 1970: Chapter IV, Mill [1871] 1998: Chapter V, Birnbacher 1988: 54), and should therefore also be understood as a theory of justice. This means adding the principle of *sum-total aggregation* (of utility as informational base) (Sen [1988] 2008) to the list of substantive principles. However, understanding utilitarianism as a theory of justice has also been criticized, as it leaves little room for individual claims and rights (beyond being counted in the same way as everybody else) (e.g., Sen [1988] 2008, 1999).

the worse-off, there is nothing good about this move to equality (Parfit 1997, Tungodden 2008, Meyer 2010).<sup>19</sup>

The principle of proportionality is used to determine claims according to, e.g., need, desert, and contribution (Miller 1999). For example, Aristotle ([EN] 2000: 1131 a 30 ff.) prominently discusses proportionality as one basic principle of justice, where distribution should be proportional to some relevant characteristic (in Aristotle's terms: *axia* or worthiness) of the (potential) claim holder. The principle of proportionality is also discussed for the determination of obligations (or responsibilities) of a claim addressee (Section 3.1), which may be proportional e.g. to causal responsibility or ability to act (see, e.g., Ringius et al. 2002, Dellink et al. 2009 for obligations of climate justice).

Priority means that the strongest claims, e.g. those of the worst off, need to be fulfilled first, before other claims are considered. It is an ordinal rather than a cardinal principle because it does not say *how much more* deserving a claim holder is compared to another; it simply says that one claim holder *is* more deserving than another (Young 1994). Priority is a principle often used for indivisible goods (Young 1994).<sup>20</sup> It is advocated, e.g., by Parfit (1984), arguing for treating the claims of the worse-off as most urgent.

The principle of sufficiency (Frankfurt 1987: 22, Krebs 2003: 237) demands that all claim holders should have enough of some good without necessarily involving a comparison to what others have. It is defined in terms of "having enough" of something, i.e. it refers to an *absolute* standard of a certain informational base or claim (e.g. an absolute threshold of well-being). Some argue that according to this principle, justice has no more role to play once everybody has enough of the relevant good (Tungodden 2008). However, the sufficiency threshold may also be combined with a different principle above the threshold, such as proportionality to desert (see e.g. Miller 1999).

### 3.6 Instruments of justice

On a more practical level, one may ask: Which instruments shall be employed to satisfy the claims of the claim holders (see e.g. Anand and Sen 2000)? This often refers to objects of distribution (answers to the question: What is distributed?, Dobson 1998: 73ff.). However, the satisfaction of claims could, for example, also require institutional reform as an instrument of justice (e.g. Pogge 2008). Aristotle ([EN] 2000: Book V) considers the proper design of institutions such as the state and the household as a

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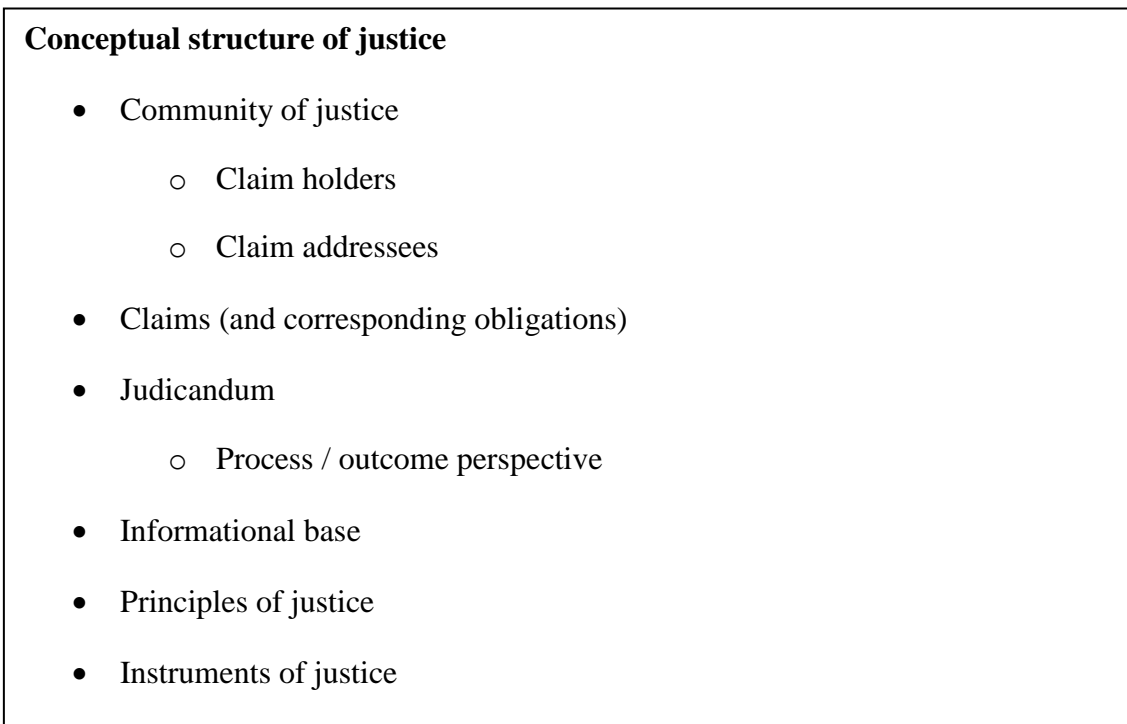
<sup>19</sup> Responding to this, Scanlon (1996) argues that many who seem to care about equality in fact care about avoiding suffering (i.e. act upon a humanitarian concern) and should advocate a principle of priority or sufficiency.

<sup>20</sup> The priority principle is employed, for example, when kidneys for transplantations are allocated according to a waiting list (which in turn may be set up according to multiple criteria which determine the strength of the patient's claim to a kidney, as time on the waiting list, chances of survival, etc.), or when lay-offs are organized according to seniority (i.e. those longest in the enterprise have priority to avoid a lay-off). See Young (1994) for these and further examples.

crucial instrument for developing a just society and just persons. A particular instrument in this context is education. Mill ([1871] 1998: Chapter V) discusses in some detail punishment and retribution as instruments of justice. Schlosberg (2004) calls for policy-making procedures that encourage active community participation and enable diversity as instruments of justice.

Overall, the term “instruments” may refer to a range of different options – whatever seems fit to achieve the satisfaction of the claims defined by the specific conception of justice. Whether something is suitable as an instrument of justice therefore depends on whether a claim addressee can actually use it to satisfy a claim, which depends on whether (and what kind of) a relationship holds (ontologically) between the instrument and the satisfaction of the claim.

In sum, a comprehensive description of a specific conception of justice needs to specify the community of justice (claim holders and claim addressees), the claims of the claim holders and corresponding obligations of the claim addressees, the *judicandum*, the informational base, the principles, and on a more practical level, the instruments of justice (Box 1).



**Box 1: Conceptual structure of justice**

#### **4. Applying the conceptual structure of justice**

As outlined in the introduction, one purpose the conceptual structure of justice presented in Section 3 may serve is a philosophical-analytical purpose: The structure helps to analyse and compare different conceptions of justice and to explore new definitions of justice in an analytical way. How this can be done was illustrated by the

discussion of exemplary theories of justice from the history of philosophy throughout Section 3.

A second (societal-political) purpose of the conceptual structure of justice is to structure ideas of justice so that they may be used in the evaluation of concrete policies, actions, or states of the world and in institutional implementation of justice. The conceptual structure helps to explicate ideas of justice in a manner that provides concrete links to the relevant context, so that the general and abstract concept of justice may be applied to the concrete case. In the following, we provide a brief – and simplified – example of how the conceptual structure may help to address justice issues in public policy.

Our example refers to the use of *biofuels* within the European Union and particularly within Germany, and the corresponding production of biofuels worldwide. Biofuels have been welcomed e.g. as a way to increase energy security and reduce climate impacts of energy consumption, but have also met with severe criticism regarding the environmental impacts of their production, and the impacts on human rights and food security in producing countries (UNEP 2009, Weale et al. 2011). The German Biofuel Sustainability Directive (2009), in accordance with the European Renewable Energy Directive (2009), stipulates that all biofuels used in Germany must comply with certain sustainability criteria. In particular, they must comply with standards of nature protection and sustainable agricultural production, and must contribute to the reduction of greenhouse gas emissions. This applies to all biofuels produced within the European Union (EU), and to all biofuels imported from third countries. A policy maker interested in assessing the justice implications of the Biofuel Sustainability Directive may now use the conceptual structure of justice to structure this assessment, as follows.

The specification of two elements of the conceptual structure, claim addressees and *judicandum*, is already quite clear from the description of the example. Because of the extent to which biofuels development is driven by regulation and policy (Weale et al. 2011), legislative powers (in this case of the EU and Germany) shall be defined as *claim addressees*. The most obvious *judicandum* in this case is the Biofuel Sustainability Directive, or more generally the legal framework in Germany and the EU regarding biofuels.<sup>21</sup> Those impacted by the production of biofuels are *claim holders* in this context.<sup>22</sup> This is first and foremost the local population in countries (potentially) producing biofuels, both the rural population living on land which may be used for biofuel production and the urban poor in these countries, who are dependent on affordable food supplies. One could further consider future humans as potentially

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<sup>21</sup> One could discuss further *judicanda*, such as the behavior of consumers in Europe, the behavior of producers in the developing countries, and the general distribution of land use rights in the world. While these are important *judicanda*, the policy maker would need to consider whether he can influence them and whether he can therefore be considered a claim addressee. To keep things simple, we will focus on the Directive as *judicandum*, as a first step.

<sup>22</sup> That is, one may ground their claims on a relational ground of justice in Risse's (2012) use of the term, as they are impacted by the practice of producing biofuels, which in turn are imported into and used within the EU.



impacted by the land use changes and (positive or negative) climate effects of biofuel production. Finally, if one assigns moral standing to non-human natural entities, one needs to consider that these might be impacted by biofuel production as well and might therefore want to include them as a third group of claim holders. The specification of the *claims* of these claim holders again depends on the specific grounds of justice to be applied. As a rather minimal approach, local populations could claim a positive right to food security and a negative right not to be harmed by forceful land evictions and human rights abuses (Weale et al. 2011). For future humans, a claim to at least essential ecosystem services can be justified (Glotzbach 2013). Given the impact of climate change on future generations, one can also argue for a claim of future humans not to be harmed by exacerbated climate change (Weale et al. 2011). For natural entities, one could argue for a right to life and undisturbed habitat (e.g., Staples and Cafaro 2012). As these claims are rather basic and fundamental, one can argue that the appropriate *principle* is that of priority. The appropriate *informational bases* then need to be indicators measuring the effect of the Biofuel Sustainability Directive on the fulfilment of these claims. Regarding the claims of local populations these could e.g. include measuring food security, labour conditions and human health, and land tenure in biofuel production projects (for specific screening tools for these three issues see e.g. Franke et al. 2013). Regarding the claims of future claim holders, the informational base needs to assess the effect of biofuel production on conservation of essential ecosystem structures and functions (see e.g. Franke et al. 2013 for a screening tool for biodiversity protection), and measure its climate effect e.g. through life cycle assessment (UNEP 2009, Weale et al. 2011). Regarding the claims of natural entities, indicators could e.g. refer to the conservation of habitat (e.g., Franke et al. 2013) or assess land use change (UNEP 2009, Weale et al. 2011). If one or several indicators point to a breach of the fundamental justice claims, the most direct *instrument of justice* for the policy maker in this context is to work towards institutional reform of the legal framework on biofuels within the EU and Germany, e.g. by providing stricter safeguards on the mentioned indicators for the accreditation of biofuels under such legislation.<sup>23</sup>

## 5. Conclusion

The conceptual structure of justice introduced in this paper comprises a number of elements which one should be able to specify when talking comprehensively about a specific conception of justice: the community of justice including claim holders and claim addressees, their claims (and corresponding obligations), the *judicandum* (that which is to be judged as just or unjust), the informational base for the assessment, the principles of justice, and on a more practical level, the instruments of justice. We argue that the conceptual structure may be used to analyse and compare different conceptions of justice, to explore new definitions of justice in an analytical way, and to explicate an

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<sup>23</sup> However, the policy maker should also consider more indirect instruments, such as initiatives to secure land tenure, reduce energy consumption, develop more clearly carbon-neutral biofuels and other technology, etc. This points back to the further *judicanda* to be discussed (see above). The policy maker then needs to consider whether she can impact on these *judicanda*.

idea of justice so that it can be used in the evaluation of concrete policies, actions, or states of the world and is fit for the purpose of institutional implementation. We have shown in this paper how the conceptual structure of justice may be used to link the general idea of justice to a concrete case, in order to help to address justice issues in public policy, by providing an example regarding the use and production of biofuels.

A limitation of our approach lies in the conceptual structure of justice being a purely formal framework, which by itself does not give guidance on well-argued grounds of justice or reasonable epistemological and ontological assumptions underlying a conception of justice. Therefore, institutional implementation will always require argumentation about the right grounds of justice and ontological and epistemological assumptions. The application of the conceptual structure cannot resolve certain disputes, e.g. disputes between proponents of different ethical schools on different grounds of justice, or disputes on factual questions; but it can help in this discussion by clarifying terms and relationships between terms. The pure formality therefore also is a strength of the approach, as it allows to structure ideal, non-ideal, implementation-oriented and empirical work on justice and therefore to relate them to each other.

Moreover, as pointed out throughout the paper, the conceptual structure of justice as a structuring device facilitates to check whether the specification of the conceptual elements of justice is consistent in several ways: (1) The conceptual elements of justice need to be specified in a manner that is consistent with each other (e.g., instruments of justice need to be specified consistently with the claims of justice that they are intended to fulfil), (2) the conceptual elements of justice need to be specified consistently to the underlying ontological and epistemological assumptions (e.g., instruments of justice need to have an actual impact on claim fulfilment according to these assumptions), and (3) the conceptual elements need to be specified consistently with the grounds of justice or ethical foundation that are taken to apply (e.g., claim holder status and claims need to be consistent with the criteria formulated by the grounds of justice).

Overall, the conceptual structure of justice may be helpful as a structuring device, which allows a more explicit discussion on justice conceptions, and at the same time link them to concrete contexts, so that they can be used for institutional implementation.

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**Paper 2:**  
**The justice dimension of sustainability. A systematic  
and general conceptual framework**

# **The justice dimension of sustainability**

## **A systematic and general conceptual framework**

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### **Abstract**

We discuss how the normative dimension of sustainability can be captured in terms of justice. We (i) identify the core characteristics of the concept of sustainability and discuss underlying ontological, epistemological and ethical assumptions, (ii) introduce a general conceptual structure of justice for the analysis and comparison of different conceptions of justice, and (iii) employ this conceptual structure to determine the specific characteristics and challenges of justice in the context of sustainability. We demonstrate that the modern sustainability concept raises specific and partly new challenges of justice regarding the community of justice, the judicandum, the informational base, the principles, and the instruments of justice.

### **Keywords**

Conceptual structure of justice, epistemology, ontology, sustainability ethics, sustainability justice, sustainability science

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# 1. Introduction

Sustainability is a societal vision about how to act within social and ecological systems over the long term. The modern concept of sustainability, as it has evolved and gained global momentum since the 1980s, obviously has a normative dimension. This normative dimension is of key importance for sustainability policy and public debate, as well as for sustainability research (Hirsch Hadorn et al. 2006, Becker 2012). In this paper, we discuss how this normative dimension can be interpreted in terms of justice. Justice concerns a fair balance of mutual claims and obligations within a community. Justice issues are at the centre of morality and ethics (Mill ([1871] 1998), and are particularly pressing in the sustainability context.<sup>1</sup> We ask: What are the characteristics and challenges of justice in the context of sustainability? What is an adequate approach to analyse them?

## 1.1 Motivation and aim

Exploring the justice dimension of sustainability is important for several reasons. Debates in different sustainability policy fields increasingly put a strong focus on justice concerns, for example in international climate negotiations.<sup>2</sup> Those advocating fairness and equity in these arenas can benefit from good justification for these objectives, or, as Barry (1997: 63) puts it: “It is surely at least something to be able to assure those who spend their days trying to gain support for measures intended to improve the prospects of future generations that such measures do not represent optional benevolence on our part but are demanded by elementary considerations of justice”.

The exploration of the justice dimension of sustainability is also worthwhile for more theoretical, and philosophical, reasons. Sustainability and justice are both contestable, and contested, concepts (Dobson 1998, Jacobs 1999, Connelly 2007, Zaccai 2012). There is therefore a need to clarify their meanings and systematic relationships in order to develop a conceptual basis for further discussions of justice in the context of sustainability. This in turn may also contribute to avoid the misuse of the two concepts (and their relationship) as purely rhetoric devices in terms of a “legitimizing game” in politics (cf. Dobson 1998: 242f.).

Contested concepts, such as sustainability and justice, generally have two levels of meaning (Jacobs 1999). The first level of meaning refers to the unitary, undisputed, but also vague general idea represented by the concept and is constituted by a number of core characteristics. We refer to this first level as the level of the *general concept*. The

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<sup>1</sup> We consider justice to be a top candidate for the specification of the normative dimension of sustainability, as it allows well dealing with concerns of limits, scarcities and conflicts. There are other perspectives – not mutually exclusive – such as the concepts of responsibility (Gethmann and Mittelstrass 2008, Baumgärtner et al. 2010, 2014, Schefczyk 2012) and of virtues, the good life and an ethics of care (Newton 2003).

<sup>2</sup> Raymond (2003) names other policy debates that “gravitated towards equity concerns” (2003: 186), such as the allocation of SO<sub>2</sub> allowances and of public lands forage.

second level of meaning is “where the contest occurs: political argument over how the concept should be interpreted in practice” (Jacobs 1999: 25). At this second level of meaning, different ways in which the concept can be understood and specified, and therefore alternative conceptions of the concept, are discussed. We refer to this second level as the level of *specific conceptions*.<sup>3,4</sup>

Our analysis proceeds mainly at the level of general concepts. We ask how the general concepts of sustainability and justice can be linked to form a new concept of *sustainability justice*. We determine the specific characteristics and challenges of justice in the context of sustainability. While our focus is on the general concepts, we also refer to specific conceptions of justice and sustainability to illustrate particular points, and to back up and reinforce our analytical argumentation in a synthetic way.

Our aim is to map out the space of possible specifications of sustainability justice. We do not suggest a specific conception of sustainability justice, but rather deduce a set of characteristics and requirements for any conception of sustainability justice. Thereby, we aim to provide a theoretical framework that can serve future research and debate about justice in the context of sustainability issues.

## 1.2 Relation to the literature

This paper relates to a range of existing literature that discuss various conceptual and normative aspects of sustainability (e.g. Daly 1980, Jacobs 1999 and other contributions in Dobson 1999, Newton 2003, Ott and Thapa 2003, Agyeman et al. 2003a, Norton 2005, Waas et al. 2011, Christen and Schmidt 2012, Ott 2014), as well as to contributions that elaborate more specifically on three justice dimensions of sustainability: intragenerational justice (Sen 1973, Leist 2007), intergenerational justice (Sikora and Barry 1978, Partridge 1981, 2008, Parfit 1984, Barry 1997, Unnerstall 1999, Tremmel 2006, Page 2007a, 2007b, Habib 2013), inter- *and* intragenerational justice (Dower 2004) and justice towards nature (Stone 1974, 2010, Regan 1983, Singer 1990, Staples and Cafaro 2012).

Most of these contributions either discuss proposals for specific conceptions of justice, or refer to only one or two specific dimensions of sustainability, e.g. intergenerational justice or justice towards nature. In contrast, we develop a meta-approach<sup>5</sup> to

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<sup>3</sup> For the concept-conception distinction, see also Gallie (1956), Rawls (1971), and furthermore (in the sustainability context) Burger and Christen (2011: 788), Christen and Schmidt (2012: 402).

<sup>4</sup> In a similar vein, Waas et al. (2011: 1645) point to the “interpretational limits” of sustainability which according to them “incorporates a more or less stable set of general defining characteristics which must always be respected, no matter which view [i.e. conception] one amounts to”.

<sup>5</sup> Christen and Schmidt (2012) also provide a meta-approach to sustainability. While there are obvious overlaps between their approach and ours (e.g. in emphasizing both the normative and the descriptive aspects of sustainability), our approach differs in that it focuses on substantiating the justice dimension of sustainability. Another meta-approach to justice and sustainability is provided by Dobson (1998), who, like us, seeks to relate sustainability and justice, but does so by starting from three specific (types of) sustainability conceptions, while we start from the core characteristics

sustainability justice, mapping out the theoretical framework and requirements for justice conceptions of sustainability by considering all three relations of sustainability: with contemporaries, future generations, and nature. With this, our approach identifies the space within which existing and potential future conceptions of sustainability justice may be located. Our approach can thus help to compare and evaluate different conceptions of sustainability justice, and develop new ones.

### 1.3 Structure of the argument

We argue (in Section 2) that the general concept of sustainability has certain core characteristics which are common to all conceptions of sustainability. However, the way these core characteristics are interpreted differs between different conceptions of sustainability. This is based at least partly on different underlying assumptions, as regards the understanding of the human being, nature and their relationships (ontological assumptions), as regards questions of knowledge, uncertainty and ignorance (epistemological assumptions), and as regards questions of moral status, values and norms (ethical assumptions). We therefore first address these types of *underlying assumptions* (Section 2.1) before we flesh out the *core characteristics* of sustainability and their conceptual variations between different conceptions of sustainability (Section 2.2).

We further argue (in Section 3) that the general concept of justice can be captured by a formal *conceptual structure of justice*, comprising and relating the elements needed to comprehensively describe any conception of justice. These elements are the community of justice including claim holders and claim addressees, the claims of the claim holders and corresponding obligations of the claim addressees, the *judicandum* (that which is to be judged as just or unjust), the informational base of the justice judgment, the principles of justice, and – on a more practical level – the instruments of justice.

We then link (in Section 4) the two general concepts of sustainability and of justice to discuss *the justice dimension of sustainability*. We argue that the core characteristics of sustainability imply certain specifications along the elements of the conceptual structure of justice. We demonstrate that the modern sustainability concept entails specific and partly new challenges of justice in regard to the community of justice, the claims and obligations, the *judicandum*, the informational base, the principles and the instruments of justice.

Finally (in Section 5), we sum up the requirements for any conception of sustainability justice and show that sustainability justice requires some modifications of established theories of justice in order to adequately analyse issues of justice in the context of sustainability. We end by drawing some conclusions for the conceptual debate, as well as for sustainability policy and research.

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of sustainability but not from a specific conception. For a further meta-approach, see also Waas et al. (2011).

## 2. Sustainability

Sustainability has become a prominent concept in societal and political discourses around the world and serves as a major guideline for political actions and future societal development. There is an enormous breadth and variety of different conceptions of sustainability in the political, practical and academic arenas (for meta-studies see e.g. Mitcham 1995, Dobson 1996, 1998, Jacobs 1999, Pezzey and Toman 2002a, 2002b, Waas et al. 2011, Christen and Schmidt 2012, Becker 2012). Sustainability can be characterized as a “thick” normative concept (Williams 1985, Putnam 2002, Roberts 2013): it carries both normative and descriptive content.<sup>6</sup> Sustainability is an integrative concept in various ways,<sup>7</sup> linking different issues such as environmental deterioration and human poverty, and looking to resolve them simultaneously and, at best, in a mutually reinforcing way (Robinson 2004, Waas et al. 2011). It is also a contested concept (Jacobs 1999, Connelly 2007, Zaccai 2012), characterized by a set of core characteristics, along with different interpretations of these core characteristics in different conceptions. These conceptual variations depend, at least partly, on different underlying assumptions.

### 2.1 Underlying ontological, epistemological and ethical assumptions

Different sustainability conceptions build on different, explicit or implicit, assumptions about the world (“world views” or “basic constructions of the world”; cf. Baumgärtner et al. 2008: Sec. 4). This includes especially ontological, epistemological and ethical assumptions.

The first set of assumptions is about the human being, about its fundamental constitution and motivational structure, about the relationship between the individual and society, about nature and about the human-nature relationship. We call these *ontological assumptions*, as they are about the entities that exist in the world and their relationships. For example, the human being may be conceptualized as a relational being with a “fundamental-ontological reliance on nonhuman collectives and processes” (Muraca 2011: 390)<sup>8</sup>, which contrasts with a more narrow understanding of the human being that works on the assumptions of the “homo oeconomicus” model and considers the relation between humans and nonhumans in terms of instrumentality only (Muraca 2011). Nature may be seen as “the other” and contrasted with the essence of human being, or humans may be seen as part of nature (Hayward 1998). There are different assumptions about the vulnerability of nature to human influence. In the Brundtland report, nature is characterized as “bountiful, but [...] also fragile and finely balanced”

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<sup>6</sup> Christen and Schmidt (2012) express this by distinguishing between a normative and a descriptive “module” of sustainability.

<sup>7</sup> For example, sustainability seeks to integrate encompassing spatial and temporal scales, inter- and intragenerational relationships of the human being and the human-nature-relationship, and their mediation through economic, scientific and technological systems. See the remarks on “scope”, “threefold relationality”, and “systemic mediation” in Section 2.2 below.

<sup>8</sup> Muraca (2011) calls this conceptualization of the human “deep anthropology”.

(WCED 1987, Ch. 1 § 23). According to Hans Jonas (1974, [1979] 1984), human power and impact on the environment are greater than ever. There are also differing accounts of what motivates the individual and which logic it follows (e.g. logic of appropriateness vs. logic of consequences, March and Olsen 1998). Understandings of the relationship between the individual and society may vary from seeing society as a loose framework for individual opportunities and values, to an encompassing, identity-defining structure (see e.g. Norgaard 1988 arguing for the latter understanding as appropriate for sustainable development).

The second set of assumptions answers to questions such as: What can one know? What cannot be known? How can one learn? Which forms of knowledge are there? Where does one encounter irreducible ignorance? What are the criteria for accepting a statement as true, valid, appropriate or coherent? We call these *epistemological assumptions*, as they are about knowledge and learning. Different epistemological positions differ in the criteria they define for knowledge (justified true beliefs) about propositions, such as justification by evidence or justification by reliable cognitive processes (Steup 2014). Different schools in philosophy of science, such as (critical) realism or (strong or weak) social constructivism, take different stances on the existence<sup>9</sup> of an objective reality independent of human observation, and on the possibility to observe and assess this reality (see e.g. Chakravartty 2013, for particular positions in the sustainability context see Norgaard 1988, Funtowicz and Ravetz 1994, 2003, Spash 2012). The question “What can we know?” is the basis for the questions “What can we control? What possibilities of action do we have? What can we do?” (Faber et al. 1992). Thus, assumptions about one’s possibilities of knowing also have implications for one’s possibilities of acting. This obviously becomes relevant in the sustainability context when it comes to questions of how to act in a sustainable manner.

Assumptions about risk, uncertainty and ignorance are an important subset of epistemological assumptions. While the terms “Knightian risk” and “uncertainty” refer to the assumption of a fully specified set of outcomes (with given objective probabilities in case of risk, without probabilities in case of uncertainty), the term “ignorance” refers to the assumed inability even to specify all possible outcomes (Faber et al. 1992). The standard assumption in modern science is that ignorance is reducible to risk (so that one can make statements about the possible states of the world and their probabilities). Faber et al. (1992) point out, however, that there are instances of irreducible ignorance, due to reasons that lie in characteristics of the subject matter (“phenomenological ignorance”, e.g. about “chaotic” systems) or in humans’ way of conceiving the phenomena, such as ambiguities in language, the impossibility to know the truth of axioms, and incompleteness of logical systems (“epistemological ignorance”). Proponents of post-normal science (e.g. Funtowicz and Ravetz 1994, 2003) advocate for a criterion of quality (rather than truth) of knowledge, defined as “the degree to which the recommended policy choices are robust against [...] underlying uncertainties”

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<sup>9</sup> That is, different epistemological schools build on different ontological premises – e.g., on whether they assume the existence of an independent reality.

(Funtowicz and Ravetz 1994: 202). Epistemological assumptions also concern the knowability and origin of values and norms, especially related to the natural world (Potthast 2000, Campbell 2014).<sup>10</sup> Ontological and epistemological issues are also connected to empirical observation in various ways.<sup>11</sup>

The third set of assumptions of interest here includes axiological views on which entities have value (and based on which criteria), prescriptive statements about “the kind of world we want to live in and want to leave as a legacy” (Waas et al. 2011: 1645), and statements about which norms should be followed and which “grounds of justice” (Risse 2012) should be taken into account. We call these *ethical assumptions*, as they are about basic evaluative and prescriptive statements. Different grounds of justice and different criteria for moral status will be discussed throughout the paper.

## 2.2 Core characteristics and conceptual variations of sustainability

As a contested concept, sustainability is characterized by a number of core characteristics at the level of the general concept, which are interpreted in different ways by different specific conceptions of sustainability. By the term “core characteristics”, we refer to meanings of the term “sustainability”, as well as to “circumstances” of sustainability, i.e. the contexts in which sustainability becomes relevant. Following and extending Becker (2012), we identify the following core characteristics and their interpretation, i.e. their conceptual variations, from an analysis of the term “sustainability” and the related literature.<sup>12,13</sup>

**Continuance.** Literally, sustainability means the ability to sustain, that is, to maintain or continue, something.<sup>14</sup> Different conceptions of sustainability differ with regard to what exactly is to be continued. This can be certain systems (e.g. ecosystems, societal

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<sup>10</sup> From a critical epistemological perspective, it seems difficult to justify intrinsic values (in the sense of objective and nonderivate values) in nature or natural entities (Hayward 1998: 40, Potthast 2000: 119). This, however, does not mean that natural entities cannot have moral claims, based e.g. on their interests or them having a good (Feinberg [1974] 1981, Hayward 1998: 41, Staples and Cafaro 2012). Deep ecologists would argue that one cannot know, just experience, that nature is morally considerable (cf. Potthast 2000: 119).

<sup>11</sup> These assumptions are connected to empirical observation in the sense that ontological and epistemological assumptions influence what one observes, and how one observes it. Empirical observations in turn contribute to one’s understanding of the world and might also change some of the ontological and epistemological assumptions in a constant process of narrowing and refining (cf. Spash 2012). In the sustainability context empirical observation can become rather complex, where indirect effects and relationships are concerned. Still, sustainability ethics is crucially dependent on scientific, empirical knowledge about the world.

<sup>12</sup> For other approaches to the core content of sustainability, see Dobson (1996, 1998), Jacobs (1999), Burger and Christen (2011).

<sup>13</sup> We do not include common misuses of the term “sustainability” in our analysis.

<sup>14</sup> See, e.g., *The Oxford English Dictionary* (Simpson and Weiner 1989). Some definitions of sustainability are mainly based on the aspect of continuance, e.g. the definition given in the *Shorter Routledge Encyclopedia of Philosophy* (Holland 2005).



systems), certain entities (e.g. species, capital, organisations), certain processes (e.g. evolutionary processes), or certain measures evaluating or following from these (e.g. wealth, well-being). Continuance can refer to an active process of maintaining the systems, processes, entities or measures in question, or to the sustaining of conditions under which they can sustain themselves and flourish on their own. For being able to maintain such systems, processes, entities, or measures (or their conditions of self-maintenance), it is necessary to sufficiently understand their functioning. This has become the main field of contribution of scientific research to the sustainability debates.

**Normative orientation.** Sustainability also has a normative meaning. Sustainability is widely understood to be something positive – something for which one should strive (Kates et al. 2005: 20, Waas et al. 2011: 1644, Becker 2012). The main political statements on sustainability (UN 1992a, 2000, 2012) clearly embody this normative meaning and take sustainability as a guiding principle.<sup>15</sup> However, one needs to further clarify and construe this normative meaning. What kind of norm is sustainability? A clarification of the normative meaning of sustainability cannot come from sciences and cannot be merely grounded in the continuance aspect (Langhelle 1999, Robinson 2004, Waas et al. 2011). Continuance is not a norm in itself. Sustainability does not mean that one should maintain any system, process, or entity. One needs to have a qualifier, further ethical criteria, to decide what systems, entities, processes etc. one should continue. In the following sections of this paper, we will substantiate this normative meaning in terms of justice.

**Encompassing scope.** Sustainability seeks to address environmental and developmental issues of considerable scope – both in space and in time. The global scale is probably a common feature of all sustainability conceptions (Waas et al. 2011).<sup>16</sup> However, different conceptions of sustainability differ in the time horizons they consider – from 25 years (as a minimum time horizon of one generation into the future) to an unspecified “now and in the future” (as in the Brundtland report) to several generations (“at least 100 years”, Pezzey and Toman 2002b) to forever (for overviews see National Research Council 1999, Kates et al. 2005). As an integrative concept, sustainability seeks to address the encompassing spatial and temporal scope at the same time.

**Threefold relationality.** The modern concept of sustainability, as it has evolved and gained global momentum since the 1980s, is essentially about fundamental relationships of the human being. The individual human being is conceptualized as being related to

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<sup>15</sup> For instance, the Agenda 21 states that “sustainable development should become a priority item on the agenda of the international community” (UN 1992a: §2.1) and the United Nations Millennium Declaration includes sustainability among the fundamental guiding principles of the international community (UN 2000: §§6 and 22f). In the outcome document to the Rio+20 summit, the international community commits itself to the development of “sustainable development goals”, complementing the Millennium Development Goals (UN 2012: §§ 245 ff).

<sup>16</sup> Many community or “Local Agenda 21” groups operate under the imperative “act locally, think globally” (e.g. Tilbury et al. 2002), pointing to the fact that while they act locally, their quest for sustainability ultimately aims at global improvements.

contemporary humans, future humans, and non-human nature. This becomes obvious e.g. from the prominent definition given by the Brundtland Report, where sustainable development is defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED 1987: Ch. 2 §1).<sup>17</sup> Sustainability, in this statement, is about the relationship between contemporaries and about the intertemporal relationship between generations. Sustainability also refers to the relationship between humans and nature: “In its broadest sense, the strategy for sustainable development aims to promote harmony among human beings and between humanity and nature” (WCED 1987: Ch. 2 §81).<sup>18</sup> Thus, the term sustainability refers to an integrative view of three fundamental relationships of the human being: its relation to other contemporaries, other generations, and nature. Following Becker (2012: Chapter 3), we call these relationships, in short, *sustainability relations*.

Different conceptions of sustainability differ in the way they interpret these relationships (e.g. Waas et al. 2011).<sup>19</sup> Some focus more on intergenerational relationships (e.g., Pezzey and Toman 2002b, Ott 2014), some more on global intragenerational relationships (e.g., Ng 2004). In particular, while nature always plays some role for sustainability, this role is interpreted in different ways: Nature may be considered with regard to its instrumental function within intra- or intergenerational relationships, for instance as a life-support system (e.g., WCED 1987, Barbier et al. 1994) or a resource (e.g., Pezzey and Toman 2002a). On the other hand, the human-nature relationship may also be recognized as crucial by itself, assigning a moral status of its own to nature, or to specific natural entities, such as other living species on Earth with which humans share the environment (WCED 1987, Earth Charter Commission 2000, Waas et al. 2011, Staples and Cafaro 2012).

So-called “weak” and “strong” conceptions of sustainability are based on different assumptions about the function of nature for human existence and well-being (Neumayer 2010): whereas weak sustainability assumes that natural capital is just one of many different capital stocks that can yield services for humans, and is substitutable against these other capital stocks (see Pezzey and Toman 2002a, 2002b, Neumayer 2010 for examples), strong sustainability assumes that nature is not substitutable against other types of capital. This non-substitutability may be grounded in the conviction that nature plays an irreplaceable (instrumental or eudemonistic) role for human well-being (Barbier et al. 1994, see also Neumayer 2010). It may also be grounded in an ethical

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<sup>17</sup> See also UN (1992a: 3.33) and UN (2002: Annex II, 154-162).

<sup>18</sup> See also UN (2002: Annex II, 154f).

<sup>19</sup> Linking back to Section 2.1, this interpretation depends, inter alia, on ontological assumptions about the human being and its relationships, as well as on aspects of value theory regarding e.g. values in nature and epistemological assumptions about the knowability of values in nature.

position that assumes moral claims of (entities in) nature (see e.g. Ott and Döring 2008).<sup>20</sup>

Nature may also be seen as a creative potential that inspires human creativity (Biomimicry or Bionics, Benyus 2002), a model for human technological and economic processes (Industrial Ecology, Ayres and Ayres 2001), a fundamental condition and limitation of human activity (Ecological Economics, Costanza 1991), a partner in co-evolutionary development (Norgaard 1988), and a source of meaning and fulfilment for humans (Hayward 1998).

Some sustainability conceptions (e.g., Hayward 1998, Becker 2012) strongly emphasize the relationality of the human being, as fundamentally related to other contemporaries, future generations, and nature. This implies putting the dominating modern (western) ideal of the human being as an autonomous and independent individual (Bacon [1620] 1863) into question.<sup>21</sup> Other sustainability conceptions, while acknowledging that future generations and nature play some role for sustainability, interpret these relationships in a weaker sense and still see the individual as primarily autonomous (for examples, see Neumayer 2010). We argue that, however interpreted, the sustainability concept implies a minimal ontological commitment to the existence of a relationship between current and future generations of humans and between humans and nature, which acquires some moral significance and raises normative and evaluative questions of how to act within them. Continuance of systems, processes, and entities then is just a means, a function, in regard to the normative obligations concerning the sustainability relations. The ability to continue certain—not all—systems, processes, or entities is crucial for the development of these relations.

**Relational asymmetry.** The relationships between contemporaries, between humans of the current and of future generations, and between humans and nature are highly asymmetric: Current humans have extended power and impact on the environment and on future humans (e.g. Jonas (1974, [1979] 1984). Currently living humans can impact future human and non-human beings and substantially determine their living conditions, but not vice versa (see e.g. Neumayer 2010, Meyer 2010, Gardiner 2011).<sup>22</sup> Even within

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<sup>20</sup> Ott and Döring (2008: 175) point out that from a position which recognizes the interests of sentient beings, the habitats of these animals may not be substituted by artefacts which benefit only humans. According to this line of argument, natural capital should be preserved (and not be substituted by other types of capital) for the sake of the interests of these sentient beings, not only for the sake of human interests. Similarly, Hayward (1998) argues that if non-human beings “can be considered as bearers of interests – in some sense of the term – including an interest in the maintenance of their own conditions of life and flourishing, then there is a case [...] for respecting those interests, too” (1998: 16). See Dobson (1998: 40f.) for a critique of using the terminology of “natural capital” in the context of obligations to nature.

<sup>21</sup> Similarly, Christen and Schmidt (2012: 405).

<sup>22</sup> Gardiner (2011: 165) refers to this as “causal asymmetry” between earlier and later generations. Neumayer (2010: 16) speaks of the “time-inconsistency problem of sustainability”, stating that the current generation cannot control whether intermediate generations adhere to what the current generation sees as required by sustainability.

the current generation certain regions or societal groups have significantly more power and abilities to act than others.<sup>23</sup> The relationship between humans and nature differs substantially from the relationship between human beings. Different sustainability conceptions differ in the extent to which they take account of asymmetries in the sustainability relations. For example, the degree of irreversibility (i.e. an asymmetry in the relationship between current and future generations) built into models of standard resource economics is often weaker than in thermodynamic models of ecological economics (Baumgärtner 2005).

**Systemic mediation.** Most of the relationships relevant in the sustainability context are relationships that are governed by systems of mediation. For instance, most global relationships today are not set up and realized deliberately by individuals, but are set up and governed by economic, scientific, and technological systems (Becker 2012: Ch. 7, Young 2011). Such systems are characterized by certain institutionalizations and by fundamental patterns of thought and action.<sup>24</sup> By everyday consumption and the market system, for instance, one is related to a huge number of people around the world involved in the production and distribution of the consumption goods or affected indirectly by various externalities. At the same time, economic processes substantially affect the environment, which then has a crucial impact on other current and future humans and natural beings (see e.g. Hayward 1998). Looking only at an isolated action without considering mediating systems, one thus misses many indirect impacts. Sustainability conceptions should integrate these mediated impacts. However, few conceptions of sustainability seem to fully integrate systemic mediation.<sup>25</sup>

**Limits.** The idea of limits is a key characteristic in practically all conceptions of sustainability (see Barbier et al. 1994, Langhelle 1999, Pezzey and Toman 2002a, 2002b, Kates et al. 2005: 20, Waas et al. 2011).<sup>26</sup> The concern about limitedness is also apparent in many empirical assessments of the condition of the world's biophysical and

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<sup>23</sup> Potthast (2000: 122) emphasizes the importance of power relationships in the causation of the environmental crisis.

<sup>24</sup> Becker (2012, Ch. 7) refers to these systems as meta-structures. He defines a meta-structure as composed by four elements: (1) basic assumptions as categories of thought by which one understands the world, (2) basic evaluations as fundamental values or norms often referring to the basic assumptions, (3) driving forces, such as basic motivations or incentive structures, and (4) institutionalizations, referring to the expression and stabilization of the first three elements in certain rules and organizations. The first three elements refer to fundamental patterns of thought and action.

<sup>25</sup> Standard models in environmental and resource economics, for example, usually incorporate only one (or few) resource(s) and one (or few) agent(s) (e.g. Dasgupta and Heal 1979, Clark 2010). Waas et al (2011: 1656) seem to take mediated effects into account to a certain degree when they argue that “the dynamic interactions between the environment and society, where the future is unpredictable and surprise is likely, require adaptive forms of governance”.

<sup>26</sup> With regard to epistemology, this means that sustainability is incompatible with radical forms of constructivism or anti-realism which deny any biophysical limits on social life. At the same time, the epistemological approach should be able to address uncertainties and ambiguities in knowledge and the fallibility of knowledge. Spash (2012) therefore argues for a critical realism as an adequate epistemological position.

ecological systems (MEA 2003, UNEP 2012, IPCC 2013) and of the “planetary boundaries” within which humanity can operate safely (Rockström et al. 2009).

Different conceptions of sustainability differ in the exact definition and characterization of these limits. Limits are characterized in terms of technological and institutional restrictions and the limited ability of the biosphere to absorb the effects of human activities (WCED 1987: Ch. 2 §1), tipping points of certain systems (Rockström et al. 2009, Neumayer 2010), limited or non-substitutability (Neumayer 2010), absolute scarcity (Baumgärtner et al. 2006), ultimate limits of certain essential functions of the life support systems of the planet (Kates et al. 2005, Waas et al. 2011), thermodynamic restrictions (Boulding 1966, Georgescu-Roegen 1971, Ayres 1978, Daly 1973, [1977] 1991, Baumgärtner 2006, Krysiak 2006) and limits in our ability to understand natural processes (Pezzey and Toman 2002b). Different limits may hold for different resources or types of natural capital (Neumayer 2010: Chapter 4), also depending on technology and social organization (Waas et al. 2011). “Nested” models of sustainability (where the economy or society is represented as a subset of the ecological system of the Earth) put more emphasis on ultimate limits of the Earth than, e.g. models representing the concern for sustainability as a concern for three or more “pillars” of equal standing (such as the economic, social and environmental) (Waas et al. 2011). Policy approaches such as the safe minimum standard (Circay-Wantrup 1952, Bishop 1978) explicitly take account of limits and thresholds, while emphasizing the (epistemological) doubt about how precisely one can know the location of such thresholds, and the precaution one should therefore take.

**Uncertainty.** Especially with regard to the environment and the future, uncertainty in different forms (cf. Section 2.1) plays an important role for sustainability (Neumayer 2010). These uncertainties concern, for example, our knowledge about how natural systems react to human intervention and about the potential development of societal and economic systems (see e.g. Pezzey and Toman 2002b, Waas et al. 2011). Some argue that the amount of ignorance, at least partly, depends on the design of the institutions and systems that govern our relationship with nature and future persons (e.g. Becker 2012: 41–63). Furthermore, there is also considerable uncertainty about the values and norms of future generations, as well as about values in nature (e.g. Potthast 2000, Krysiak 2009).

Different sustainability conceptions differ in the exact conceptualization of these uncertainties and build on different epistemological requirements. For example, conceptions of sustainability as constant or non-decreasing welfare or capital over time are difficult to substantiate empirically due to data deficiencies (Pezzey and Toman 2002b). In contrast, approaches of “education for sustainable development” (Vare and Scott 2007, Barth and Michelsen 2013) emphasize continual learning and competencies for adaption to new challenges. Approaches such as the “precautionary principle” explicitly emphasize that it is necessary to respect uncertainty and avoid risks (Sandin 2004, Waas et al. 2011).

Summing up, the contested general *concept* of sustainability is subject to substantial conceptual variations in the different specific *conceptions* of sustainability that have been proposed. Nevertheless, a number of core characteristics can be identified (Box 1). These build on some minimum ontological assumptions, such as the existence of at least weak mediated relations between contemporary humans globally, at least a weak relation of contemporary humans to future humans and nature, the existence of at least some limits in the biophysical environment, and (at least to some extent) the ability of humans to influence nature and human dependence on nature. Epistemologically, sustainability presupposes the ability to recognize at least some aspects of the biophysical environment as an external reality, albeit subject to substantial uncertainties. To arrive at normative conclusions, additionally certain ethical assumptions (basic evaluative and prescriptive statements) are needed.

#### **Core characteristics of the sustainability concept**

- Continuance
- Normative orientation
- Encompassing scope
- Threefold relationality
- Relational asymmetries
- Systemic mediation
- Limits
- Uncertainty

**Box 1: Core characteristics of the sustainability concept**

### **3. Justice**

As an ethical concept, justice belongs to the realm of judgments about right and wrong, good and bad. A main distinctive characteristic of justice is that it is a specific *relational* ethical concept. Justice considers actions, actors, institutions or states of affairs with regard to their *impact on others* and their entitlements (goods, rights, desert). Justice concerns that part of morality which is *owed* to others. It essentially (in its core meaning) bears on the owed, demandable claims (or rights) and the corresponding obligations within a community of justice, from the standpoint of impartiality and equal consideration (e.g., Gosepath 2007). Justice is a contested concept (Section 1) and gives rise to different specific conceptions of justice which depend, at least partly, on underlying assumptions about the world.

Particularly, different conceptions of justice define different claims, claim holders etc., depending on the specific *grounds of justice* on which they build (Risse 2012). Grounds of justice are the ethical reasons why claims of justice are legitimate for a certain group of claim holders (and why certain claim addressees have a corresponding obligation to fulfil the claims). Some grounds are relational (such as sharing a state, membership in the global order, subjection to the global trading system), while others are nonrelational (such as common humanity and common ownership of the earth) (see Stumpf et al. 2014).

Considering the characteristics of the general concept of justice, one can define a basic “conceptual structure” of its elements, which allows us to analyse and compare different conceptions of justice and to explore new definitions of justice in an analytical way (Stumpf et al. 2014).<sup>27</sup> The elements are the following (Box 2):

**Community of justice.** Who is included into the justice consideration? This question refers to the delineation of the community of justice (Dobson 1998) and to the ascription of claims (or rights) and obligations to its members. Within the community of justice, we distinguish between two potential roles of its members: that of a claim holder (holding particular claims) and that of a claim addressee (bearing responsibility for the fulfilment of claims). The community of justice is constituted of all claim holders and all claim addressees, where any one member can hold both or only one of the roles. The status of a claim holder may be grounded in different grounds of justice (Risse 2012, for examples see Stumpf et al. 2014). Moral responsibility as a claim addressee can only be attributed to a person as far as the person is free to act voluntarily and intentionally, has sufficient knowledge and (for positive claims) sufficient power to potentially satisfy the claim (Baumgärtner et al. 2006: Chapter 11, Baumgärtner et al. 2014). A claim addressee may also be a collective actor (see Stumpf et al. 2014 for more on the conditions of responsibility).<sup>28</sup>

**Claims.** The notion of a claim is central to the concept of justice (Ott and Döring 2008: 47). A claim is a right or desert to which the claim holder is fundamentally and legitimately entitled. It is ascribed to a member of the community of justice based on an accepted ground of justice or ethical foundation (see Stumpf et al. 2014 for examples). Generally, claims can be positive, i.e. defining an entitlement to a certain good (understood in a wide sense), or negative, i.e. demanding freedom from harm. Claims give rise to corresponding obligations for the claim addressees in the community of justice.<sup>29</sup>

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<sup>27</sup> See Stumpf et al. (2014) for a more elaborate presentation of the conceptual structure of justice, discussing examples from the history of philosophy for each element. Here, we essentially present a shortened version of our discussion there.

<sup>28</sup> We use the term “actor” to refer to a (individual or collective) person, defined as a distinct being with an identity, self-consciousness and the ability to reason and reflect (cf. Baumgärtner et al. 2014).

<sup>29</sup> Which claim addressee in particular is responsible for the satisfaction of a particular claim, or whether the obligation falls on the collective of all claim addressees, may be determined according

**Judicandum.** The *judicandum* is that which is to be judged as just or unjust. There are several categories of *judicanda* (cf. Pogge 2006: 863): (i) individual or collective actors, (ii) actors' actions or omissions, (iii) social rules, i.e. laws, institutions, conventions, (iv) states of affairs or events. A *judicandum* may be considered in terms of outcome, or in terms of process (consequentialist vs. procedural justice *sensu* Dobson 1998: 70). As a normative statement, it only makes sense to speak of such entities as *judicanda* that can be, either directly or indirectly, changed or impacted by a claim addressee (see Stumpf et al. 2014 for more elaboration).

**Informational base.** What is the evaluative space or informational base for the justice judgment? As Sen (1979) pointed out in his lecture on "Equality of What?", it is an important dimension of moral judgments whether they are made on the basis of information about, e.g., utility, primary goods, or capabilities (see also Pogge 2006: 868). In different domains of justice, different informational base are important (see Stumpf et al. 2014).

**Principles of justice.** What are the appropriate principles of justice? Principles of justice may apply to the way claims of justice are considered (and correspondingly, how the informational base is applied), or they may apply to the way obligations of justice are construed. Mainly four principles are discussed: equality, proportionality, priority, and sufficiency (for the first three see Young 1994: 8, for sufficiency see Frankfurt 1987: 22, Krebs 2003: 237). The principle of equality can be understood in a formal sense – equal consideration as a claim holder – or in a substantive sense, e.g. equal shares in distribution. All principles require further specification (e.g. proportionality to need or merit) (see Stumpf et al. 2014).

**Instruments of justice.** On a more practical level, one may ask: Which instruments shall be employed to satisfy the claims of the claim holders (Anand and Sen 2000)? The term "instruments" may refer to a range of different options, such as objects to be distributed (e.g. Dobson 1998: 73ff.), institutional reform (e.g. Pogge 2008), or a change in attitudes (referring, e.g., to virtue ethics, Aristotle [EN] 2000) – whatever seems fit to achieve the satisfaction of the claims defined by the specific conception of justice (see Stumpf et al. 2014 for examples).

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to different considerations, inter alia in relation to the ground of justice that the claim is based on. See Section 4 for specific grounds of justice discussed in the sustainability context and Stumpf et al. 2014 for a general discussion of grounds of justice and considerations to determine obligations.



### **Conceptual structure of justice**

- Community of justice
  - Claim holders
  - Claim addressees
- Claims (and corresponding obligations)
- Judicandum
  - Process / outcome perspective
- Informational base
- Principles of justice
- Instruments of justice

**Box 2: Conceptual structure of justice**

## **4. The justice dimension of sustainability**

Where conflicting claims exist in any of the three sustainability relations, this raises the question of what would be *just* in this relationship. Moreover, potential conflicts and trade-offs between different relationships (e.g. between intra- and intergenerational relationships) also lead to questions of justice (see e.g. Langhelle 1999, Glotzbach and Baumgärtner 2012). Sustainability actually requires an integrated conception of *sustainability justice* with regard to all three sustainability relations. What would be just with regard to the threefold relatedness of human existence?

In this Section, we analyse how one needs to specify the elements of the conceptual structure of justice (cf. Section 3) in order to substantiate the justice dimension of sustainability and therefore to arrive at requirements for any conception of sustainability justice. We discuss each structural element in regard to the core characteristics of sustainability (cf. Section 2), in order to determine the specific characteristics and challenges of justice in the context of sustainability. We take into account different grounds of justice.

### **4.1 Community of justice: claim holders and claim addressees**

The specification of the community of justice requires the specification of the (potentially overlapping) groups of claim holders and claim addressees. Let us first turn to the role of the claim holders within the community of justice. As sustainability is about continuance into the future, covers a wide scope in space and time, and builds on a threefold relationality of the human being with contemporaries, future generations, and nature (Section 2.2), the domain of application for “sustainability justice” is rather

large and gives rise to many potential candidates for claim holder status. The threefold relationality implied in the sustainability concept (Section 2.2) raises the question of how to act justly within these relationships, and therefore which claims (and obligations) arise for which claim holders (and claim addressees) within these relations. The threefold relationality suggests a substantial extension of the group of claim holders to all members of the current generation and some or all members of future generations,<sup>30</sup> and potentially non-human entities in nature as well.

Which of these candidates for claim holder status are then actually seen as claim holders, depends on the way the normative orientation of sustainability (Section 2.2) is spelled out, that is, how the criteria for assigning moral status, or more specifically, legitimate claims of justice, are defined. That is, it depends on the grounds of justice (Section 3) to be applied. For example, if nature or natural entities are seen merely as systems of mediation (cf. Section 2.2), but not as morally significant in themselves, they cannot be defined as claim holders.

The definition of claim holders is complicated by the asymmetry of the sustainability relations (Section 2.2), especially with regard to the future. The existence, number and identity of future persons depend, at least partly, on actions of the current generation.<sup>31</sup> This has led to the formulation of the so called non-identity problem (Parfit 1984): if a future person owes her existence to an action in the past, she cannot be said to be harmed by that action. This, however, depends on a specific notion of harm which compares the well-being (or other relevant metric) of the person to her well-being had the action not occurred. Using a threshold conception of harm, according to which “an action harms a person only if as a consequence of that action the (then existing) person falls below a normatively defined threshold” (Meyer 2010: 16) allows avoiding the non-identity problem.<sup>32</sup> Such a notion of harm assesses whether the affected person is “worse off than they *should* be” (Meyer 2010: 20, emphasis added) as a result of the action, rather than assessing whether they *would* be better off had the action not occurred. Such a threshold could be defined in terms of different grounds of justice that

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<sup>30</sup> See also Christen and Schmidt (2012), Glotzbach (2013).

<sup>31</sup> As a distinct challenge to intergenerational justice, which is not concerned with this contingency of the future on current decisions, some philosophers have doubted the principal possibility of future people having rights or legitimate claims now, as they *do not exist now* (Beckerman 2006). This may be termed the *non-existence problem* (Glotzbach 2013). However, one can safely assume that there will be at least some actual (as opposed to merely potential) persons in the future, that they will have some rights or legitimate claims (determined by whatever ground of justice is taken to apply, such as the interests or the good of these persons), and that present actions can affect whatever is protected by the right or claim. Thus, one can today violate future rights or claims of future persons (Feinberg [1974] 1981, Meyer 2010).

<sup>32</sup> Meyer (2010: 25) ultimately settles for a disjunctive (combined) notion of harm, defining harm as something that occurs *either* when the action causes someone to be in a sub-threshold state, *or* when this person is worse off than she would be without the action.

are independent of the particular identity of the claim holder, such as the status of personhood (see e.g. Ott 2003) or common humanity (see e.g. Meyer 2010).<sup>33</sup>

Let us now turn to the role of claim addressees within the community of justice. The group of claim addressees can logically only be constituted by such actors who fulfil the preconditions of bearing responsibility, i.e. they must be persons capable of acting out of free will and have sufficient knowledge and (for positive claims) power to potentially satisfy the relevant claims (see Section 3).<sup>34</sup> Therefore we argue that claim addressees can belong to the current generation and potentially future generations (of humans), but not to non-human natures. This is connected to the asymmetry within the sustainability relations (Section 2.2), especially with regard to the power to impact others in a substantial way. Moreover, because responsibility in the moral sense can only be borne by actors with the characteristics of a person (see Section 3 and Stumpf et al. 2014), only such (individual or collective) actors can be conceptualized as a claim addressee, but not any diffuse entity or collective. For example, strictly speaking a diffuse collective such as “the consumers”, “the current generation”, or “the economy” cannot be properly defined as a claim addressee. However, individual members of such collectives can be claim addressees; and one can argue that they have a responsibility to work towards organizing themselves with others of the same diffuse collective to form a collective actor which can be a proper claim addressee.

Different specific reasons (or grounds) for assigning claim addressee status to particular individual or collective actors have been discussed in the sustainability context. For example, one can argue that the current beneficiaries from past emissions have an obligation to help those currently harmed by these emissions on the grounds of a notion of intergenerational free-riding (Gosseries 2004, see also Baatz 2013).<sup>35</sup> Other grounds for obligations which are frequently brought forward in the sustainability context are the ability to pay (e.g., Ringius et al. 2002, Dellink et al. 2009),<sup>36</sup> and the polluter pays principle (Baatz 2013).

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<sup>33</sup> Whether the non-identity problem really is a problem thus depends on the kinds of claims (see Section 4.2) that are attributed to the claim holder on different grounds of justice.

<sup>34</sup> Here, the importance of the worldview on the specification of requirements for sustainability justice shows. What comes to be seen as a matter of concern giving rise to claims and obligations of justice depends on what is (ontologically and empirically) seen as changeable by humans at all. As Holland (1995: 815) points out, “as long as belief in providence prevailed, then although human sin might affect the natural world in ways that people did not *want*, there would never arise any question of the natural world failing to continue in the way that it *should*. A call to preserve what was in any case God’s to preserve would have been otiose. [...] the present century has seen a growing realization of the human capacity to destroy the natural world, and this has given rise to an answering call for measures to be taken for its preservation or protection.”

<sup>35</sup> These obligations can be justified, according to Gosseries (2004), without having to consider the current beneficiaries as morally responsible for their ancestor’s deeds, or to judge them (the ancestors) guilty of wrongful action.

<sup>36</sup> Schefczyk (2012: 97) calls this the “capability principle” – the party best able to bear the cost of rectifying some injustice should do it. This makes clear that the obligation to address a claim does

There might also be claims of future humans (or future natural entities) for which not the members of the current generation are proper addressees but members of another, intermediate generation in the future. This is connected to the asymmetry of the sustainability relations (Section 2.2), especially the “time-inconsistency problem of sustainability” (Neumayer 2010: 16): members of the current generation cannot control whether members of intermediate generations adhere to what current actors see as required by sustainability. This limits current actors’ responsibility (as one can only be held responsible for what one has the power to control), but also establishes some duties of members of the current generation with regard to members of intermediate and remote generations (see Section 4.2 for an elaboration).

In addition, due to uncertainty or ignorance (Section 2.1 and 2.2), an actor might not know and might not be able to know the claims of future claim holders, or might not know that its current actions have implications for the claims of future claim holders. In the case of climate change, for instance, people today and in the future are impacted by the consequences of past emissions, which may violate their claims, e.g. to stay above a minimum threshold of well-being. However, it would be difficult to argue that members of past generations that caused much of the greenhouse gas emissions acted in an unjust manner towards those affected negatively today (Gosseries 2004), i.e. did not fulfil their responsibility regarding future humans’ legitimate claims, given that they could not know the effects of their actions.<sup>37</sup> Rather, parts of the current generation need to be considered as claim addressees.<sup>38</sup> One needs, therefore, a dynamic perspective on claim addressees, allowing for new claim addressees (and claims and obligations) to be defined in the future.

Because of the wide scope and the complex and interrelated nature of sustainability issues (e.g., due to systemic mediation, Section 2.2), claim addressees should not only be individuals, but also collective actors such as governments or international organizations.<sup>39</sup> The power of the collective actor should match the spatial and temporal scope of the problem for which the actor is claim addressee and should be of adequate extent to be able to address the complexity of the systems of mediation. If the actor has too little power, she cannot take responsibility for the problem; if the actor has too much power, this would be overregulation of the problem at hand. In the international respect, there are some approaches in this direction (e.g., the international court of justice),

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not necessarily fall only and exclusively on the violator of that claim. There might be reasons why someone else has an obligation to “heal” the breach, such as her ability to act or her special relation to the claim holder.

<sup>37</sup> The 1990 report of the Intergovernmental Panel on Climate Change (IPCC 1990) is generally considered as the point in time from which on one could know, and should have known, about the dangers of climate change.

<sup>38</sup> Again, different grounds may be brought forward for the claim addressee status of members of current generations, such as being a benefiter of past emissions or being able to satisfy the claims (see the discussion above).

<sup>39</sup> See also Glotzbach (2013) referring to institutional agents as claim addressees, and Christen and Schmidt (2012) referring to the importance of political justice.

whereas in the intergenerational respect, not much has happened so far (but see Section 4.6 for some approaches). When setting up such collective actors, one should think about certain requirements. For one, in order to be a possible claim addressee, the collective actor needs to be capable of bearing responsibility (see Section 3). Also, the power of such collective actors should be transparent and controllable by those affected.<sup>40</sup>

## 4.2 Claims

Having specified the community of justice according to the threefold relationality implied in the sustainability concept (Section 2.2) to include contemporary humans, humans of future generations and potentially non-human beings as claim holders (Section 4.1), one needs to define the claims of all these claim holders. For *intragenerational* claims one can build on the debates on global and international justice (for an overview see Blake and Smith 2013) and environmental justice (e.g. Schlosberg 2004).<sup>41</sup> In the following we will therefore mainly focus on how claims of members of future generations and of non-human beings could be defined in the sustainability context, taking into account the core characteristics of sustainability and different possible grounds of justice.

The continuance aspect, which is a core characteristic of the sustainability concept (Section 2.2), implies that there are intergenerational claims to sustain certain systems, processes, entities, etc. For example, this may refer to the stock of a renewable resource (such as a fish stock) which shall be maintained at a level that allows its continued use, or it may refer to a measure such as wealth, which shall be non-declining. Continuance as a literal meaning of sustainability alone cannot serve as a normative justification for these claims, however (see also Section 2.2). Rather, the claims of future claim holders need to be based on specific grounds of justice (some of which we will discuss in this Section, below). The continuance aspect then *follows from* these claims.<sup>42</sup> Besides the *specific* claims for the continuance of *specific* things (e.g. certain resources), one can argue for a *general* claim for the continuance of justice-enabling conditions. For example, Dower (2004: 339) argues that future humans have a claim towards current humans to sustain the “conditions under which justice can flourish” (Dower 2004:

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<sup>40</sup> This control could be exerted e.g. by means of participation. The requirement for controllability and transparency is grounded in the idea of responsibility (literally: ability to give answers, Schefczyk 2012: 77, Baumgärtner et al. 2014: 12f.) itself. It can also be grounded in intragenerational justice claims. Many political sustainability documents, such as Agenda 21 (UN 1992a), also emphasize the importance of participation.

<sup>41</sup> These debates are characterized by a concern for distributive justice and humanitarian standards, as well as for institutional reform, recognition and participation (Blake and Smith 2013, Schlosberg 2004).

<sup>42</sup> Continuance of, e.g. a certain resource, then actually is an instrument to fulfil the claims of members of future generations to e.g., a share in the resource, based on a specific ground of justice (such as common ownership of the earth). See also Section 4.6.

399).<sup>43</sup> This includes the stability of life-support systems, but also the justice-enabling design of global structures today (Young 2011),<sup>44</sup> which are passed on to future generations, as a claim content.<sup>45</sup>

The recognition and proper dealing with the uncertainty and ignorance prevalent in the sustainability context (Section 2.2) also is a matter of justice. Members of future generations arguably have a claim towards members of previous generations not to increase risk and uncertainty and not to provoke surprising effects that harm future generations or burden them with new duties or claims that they will have to fulfil.<sup>46</sup> Arising from the asymmetric relationships (Section 2.2), the “time-inconsistency problem of sustainability” (see Section 4.1) also establishes some duties regarding members of intermediate generations, for example education on sustainable development being the “right thing to do” (Neumayer 2010), provision of the circumstances under which they can fulfil their respective duties (Dower 2004), and an attitude of openness, flexibility and precaution to cope with instances of irreducible ignorance (Faber et al. 1992, see Section 2.1). Uncertainty about the values and attitudes of future people (e.g. about their appreciation of nature) can also be used as an argument for more rather than less conservation of natural capital into the future (cf. Ott 2014).

As a further starting point into the inquiry about claims within the sustainability relations, one can look at one of the founding documents of the sustainability debate: The Brundtland report, which postulates “that every human being – those here and those who are to come – has the right to life, and to a decent life” (WCED 1987: Ch. 1 §54) and that conservation of nature is “part of our moral obligation to other living beings and future generations” (WCED 1987: Ch. 2 §55). What is a decent life for humans, and how are obligations towards other living beings to be defined?<sup>47</sup>

One way to define claims of contemporaries, future generations and natural beings (as far as they are sentient beings) could be in reference to Mill ([1871] 1998). The basic claim would then be “individual security”, meaning at least the right of sentient beings not to be hurt, but could also include rights to the basis of living or basic conditions of

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<sup>43</sup> This points to the fact that justice will also be relevant *within* future generations (not only *between* present and future generations).

<sup>44</sup> Langhelle (1999) points to the fact that there are other threats to future development than environmental threats. A full conception of intergenerational justice needs to take them into account as well.

<sup>45</sup> Habib (2013), for instance, argues for a claim of future generations to a “fair share” of the natural environment, where the sharing is to be done by turns (rather than by parts), meaning that future generations have a claim towards earlier generations (or more precisely, towards their members collectively) to be “handed over” the natural environment in a certain quality.

<sup>46</sup> Neumayer (2010) discusses some of the approaches of coping with risk, uncertainty, and ignorance and their associated difficulties.

<sup>47</sup> Waas et al. (2011: 1650) point out that “the report employs the idea of ‘meeting human needs’ to characterize the just aspirations of all peoples, in particular emphasizing the legitimate moral claims of the world’s poor and future generations”, therefore defining basic needs as minimum legitimate claims.

flourishing. This also links to some other current ethical discourses, e.g., to the utilitarian based discourses on animal rights (Singer 1990), the discourse on human security (CHS 2003, Gasper 2005), and on capabilities (e.g., Sen 1979, Nussbaum 2000, see also Robeyns 2005). A related claim is the one for undiminished life *opportunities*, emphasizing the substantial freedom to choose (see e.g. Howarth 2007).<sup>48</sup>

In reference to Aristotle's virtue ethics ([EN] 2000), another way of defining the claims of all beings involved could be as their "right" to be treated on the basis of *sustainability virtues* – i.e. attentiveness, receptiveness, care, and respect – as partners in the fundamental relational existence of sustainable persons (Becker 2012). Currently living and acting humans, in their role as claim addressee, then would have the respective duties to act virtuously toward all partners of the sustainability relations, i.e. other contemporaries, future people, and other natural entities. However, the sustainability virtues have different dimensions in themselves with regard to different partners, and the claims may also be considered to be different in relative importance (see e.g. Schmidtz 2011).

Regarding the sustainability relation between humans and nature, one can justify direct claims of nature or natural entities, such as e.g. not to be hurt and to be treated with respect (see above). Depending on the ground of justice, further claims of nature may be construed.<sup>49</sup> Additionally (whether or not a particular justification of claims of nature is accepted), any conception of sustainability justice will probably contain obligations towards other humans (including future generations) *regarding* nature (see e.g. Jax et al. 2013). This can be based on instrumental values of nature for humans in the narrow sense, but also on eudemonistic and relational values, aesthetic values, and so on (see e.g. Holland 1995, Muraca 2011).<sup>50</sup>

As limits are an essential core characteristic of practically all sustainability conceptions (Section 2.2), the potential to satisfy claims within the sustainability relations arguably is limited, introducing potential conflicts between the claims of contemporaries, future humans, and potentially (entities in) nature. Where the three kinds of claims and corresponding obligations conflict, the claim addressees (Section 4.1) need to resolve these conflicts on the basis of ethical considerations in combination with feasibility concerns. It is thus a task for a conception of sustainability justice to give guidance on

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<sup>48</sup> Insofar as this claim is normatively grounded in a notion of hypothetical consent of rational persons (who would not freely consent to a set of arrangements that impaired their freedom, Howarth 2007), this claim presumably only applies to present and future humans (as beings equipped with rationality).

<sup>49</sup> Holland (1995: 821), for instance, points out that some authors ground moral standing on a capacity to be harmed which may be construed extremely broadly, extending e.g. to rivers as claimants to liberty (with reference to Rodman 1977). One may also argue that non-human natural entities have a "good" on which their claims should be based (Staples and Cafaro 2012).

<sup>50</sup> Some aspects of nature (such as atmosphere, photosynthesis, solar radiation) constitute fundamental ontological conditions for the possibility of life on earth at all (Muraca 2011). All living beings must have an interest in their continued existence.

how to weigh these claims and how to handle the trade-offs.<sup>51</sup> One possibility is to assign prima facie equal rank to the claims within the different relations, and then to look at the feasible combinations of attainment of these claims, i.e. to only look at trade-offs on the “production side” (cf. Baumgärtner et al. 2012). However, one might also wish to give normative reasons for decisions on trade-offs on the “value side”,<sup>52</sup> for example based on considerations of different moral standing (e.g. Schmidtz 2011) or of different importance or urgency of the claims (e.g. DeGrazia 2001) (see also Section 4.5).<sup>53</sup>

### 4.3 Judicandum

Principally, all four categories of judicanda established in the literature (actors, actions, rules/institutions and states of affairs, Pogge 2006) are relevant in the sustainability context. As a normative statement, it only makes sense to talk of such entities as judicanda that can be, either directly or indirectly, changed or impacted by a claim addressee. At the same time, the judicanda should correspond to the claims of all claim holders in the encompassing temporal and spatial scope implied by the sustainability concept (Section 2.2).

First, the individual actor may be considered as just or unjust. One specific conception of this could be spelled out in terms of virtue ethics. One may consider an enlightened self-identity as a fundamentally relational being (a temporally, socially and naturally contingent being inside the threefold relationality of sustainability, Section 2.2) as crucial for sustainability and define the excellence of such a being by a set of relational virtues, such as attentiveness, care or respect to other contemporaries, future beings, and natural entities. Justice then would, in Aristotelian terms, mean the realization of these virtues in the right way in regard to others of the sustainability community. A person who is acting virtuously in this way would then be a just person. Further, one also needs to consider collective actors as judicanda, especially with regard to the scope and continuance aspects of sustainability (Section 2.2, see also Section 4.1).

Second, one also needs to consider a person’s action and its consequences. The action of a person might be judged as unjust without necessarily judging the whole person as unjust. With regard to many sustainability issues, such as e.g. global climate change,

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<sup>51</sup> This is the case if the conception is at least weakly concerned with feasibility, in a non-ideal theory sense (see e.g. Robeyns 2008).

<sup>52</sup> For the distinction between the “value side” and the “production side”, see Le Grand (1990), Baumgärtner et al. (2012).

<sup>53</sup> Schmidtz (2011) argues that respecting nature and being a species egalitarian are different things. There can be some criteria on which all living beings are equal (such as having a telos), but additional criteria (such as sentience or rationality) can make some species more valuable than others. DeGrazia (2001) argues for equal consideration for the interests of animals (i.e. interests of an animal, such as avoiding pain, should count the same as relevantly similar interests of a human). He emphasizes, however, that humans’ lives or other interests such as interests to freedom and autonomy can be considered more valuable than those of animals and the connected interests must count more.



one can identify actions and their impacts on others but may not be fully able to determine the individuals (causally) responsible for the action (i.e. uncertainty and ignorance play a role, see Section 2.2). One can nevertheless judge certain actions, e.g. increasing CO<sub>2</sub> emissions, as unjust. The discussion of justice should be able to refer to actions even when a reference to individuals is not possible.

Third, institutions are important *judicanda* of sustainability justice, for example those institutions governing the distribution of resources (intragenerationally) such as trade rules, the institutions governing conservation of resources for the future (intergenerationally) such as conservation policies, and the rules concerning interactions between humans and nature such as regulations of production and consumption.

Fourth, many sustainability conceptions define a certain (future) state of affairs, or a development of such states over time, as “sustainable” or “just”, such as a state of affairs in which certain critical stocks of natural capital are conserved. In the face of uncertainty (Section 2.2), the *judicandum* might not be a particular state of affairs in the future, but rather the *reasonable expectations* about possible future states of affairs. However, looking only at states of affairs in discrete points in time cannot tell us much about the transition between these states of affairs.

Among the most important *judicanda* of sustainability justice are the economic, technological and scientific systems (“systems of mediation”, cf. Section 2.2) that cross through many nations and society and can be seen as a combination of institutions, actors and actions.<sup>54</sup> Looking at such a new type of combined *judicandum* responds to the observation that the sustainability relations are often governed by complex systems of mediation and are subject to uncertainty over the long-term (Section 2.2).

As this new type of combined *judicandum* is so vast, vague and complex, at the moment no single (individual or collective) actor could on their own change them and thus be a responsible claim addressee. This gives rise to three implications: Either (1) this means that adequate claim addressees need to be created, such as collective actors with sufficient power and knowledge to control these systems (see Section 4.1); or (2) the systems need to be changed and simplified so that they are subsequently controllable by less powerful and less knowledgeable claim addressees; or (3) one might need to acknowledge that some of these systems are principally not amenable to control and it therefore makes no sense to speak of them as *judicanda*.

#### **4.4 Informational base**

Which informational base for the justice assessment is appropriate for a specific conception of sustainability justice depends on the claim contents defined in this conception, may differ between the sustainability relations and needs to take account of epistemological restrictions, as follows.

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<sup>54</sup> See also Young (2011) for an account of “structural injustice” (but without much reference to nature).

First, the appropriate informational depends on the specification of claims (Section 4.2) defined by the conception of sustainability justice. For example, if one defines “individual security” or “basic well-being” as a claim of the claim holders, the informational base must be some measure or index for this claim content. For example, Page (2007a) discusses capabilities, welfare, and resources as alternative informational bases for an intergenerational claim to a certain level of well-being.<sup>55</sup>

Second, the informational base should be universal in the sense that it should be applicable, at least, to all claim holders of equal moral standing within one of the sustainability relations described in Section 2.2. However, the informational base between different sustainability relations might need to be different. This is true even in cases of equal claims. For example, “well-being” might mean something different for “nature” (or entities in nature, such as certain animals) than for humans. In cases of unequal claims,<sup>56</sup> it follows as well that unequal informational bases are required.

Third, one crucial epistemological feature of sustainability is the uncertainty or even ignorance one is facing within the sustainability context (Section 2.2). This uncertainty or ignorance may differ with regard to the *judicandum* and the sustainability relation one is looking at but is a general characteristic of the informational base of sustainability justice.<sup>57</sup> Uncertainty about the future and about nature’s functioning might lead to the ruling out of some informational bases for intergenerational justice and justice towards nature, as the information is just not available with reasonable certainty for this relation. For example, Howarth rules out utility as an informational base for intergenerational justice, because it “depends on an analyst’s ability to accurately predict the future using models that fully integrate anticipated social, economic and environmental trends” (2007: 660).<sup>58</sup> For every relation, one needs to ask: What is the best proxy or indicator available for the fulfilment (or breaching) of the claim(s) given the context?

Overall, the informational base to measure the fulfilment of claims may thus be different between the sustainability relations for several reasons: because the fulfilment

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<sup>55</sup> Page favours capabilities as the adequate informational base of intergenerational justice, as they are able to capture both the conservation of *specific* resources and of the *general* conditions or background factors of human choosing and flourishing, such as a hospitable environment needed to preserve the *freedom* of future persons to pursue their conception of a good life. This links to claims for the sustaining of opportunities (see Section 4.2). In contrast, Ott (2014) criticizes the capability approach for referring to an unobservable informational base (capability sets) and operating on an unspecified threshold. Ott therefore prefers the critical natural capital rule for sustainability.

<sup>56</sup> As DeGrazia (2001) points out, even equal consideration of interests (on a fundamental level) does not mean equal treatment, rights, or the absence of any morally interesting differences.

<sup>57</sup> The recognition and proper dealing with uncertainty and ignorance thus is in itself a matter of justice (see Sections 4.2 and 4.6).

<sup>58</sup> Howarth (2007: 660ff.) argues that the sustaining of opportunities (as a claim of future claim holders) should instead be measured by whether future generations receive a certain set of environmental resources, where resource depletion is only permissible if reasonable certainty can be achieved about their costs to future generations, and if these costs are indeed compensated.

of the same claim means something different for the different partners in the sustainability relations (e.g. “well-being” for a human or for an animal), because the claims ascribed to the partners are different (e.g. because they are assigned different moral standing or different interests, goods, or rights, cf. Section 4.2), or because only different information is available.

#### **4.5 Principles of justice**

Which principles of justice are appropriate for conceptions of sustainability justice, regarding the obligations of claim addressees and the claims of the claim holders (and corresponding informational bases)?

Looking first at principles regarding obligations, one has to consider the difference between, and the asymmetry of, the sustainability relations (Section 2.2). For instance, the possibilities of communication and involvement are rather different with regard to other contemporaries, future generations, and nature. Also, each sustainability relation shows an asymmetry with regard to power and abilities. Current persons can impact the future, but not vice versa; and humans can impact nature in different ways than nature can impact humans; and contemporaries have very different means and possibilities to act and influence others. Therefore, one should not assume per se that the partners of the three relations (other contemporaries, future humans, and natural entities) have exactly the same duties or obligations. Rather, to reflect the asymmetries and uncertainties of the sustainability context, one can argue that a particular claim addressee’s obligations should be determined according to a principle of proportionality with regard to that claim addressee’s power and knowledge,<sup>59</sup> or even according to a principle of priority, stating that the most powerful should have an obligation to act first and foremost, if not exclusively.<sup>60</sup>

We are now turning to principles regarding claims (and corresponding informational bases). Referring to the limits that are a core characteristic of sustainability (Section 2.2), Hayward (1998: 10) points out: “As natural and finite beings in a natural and finite world, therefore, humans must heed this finitude, and not assume that distributive principles can be developed in abstraction from it.” The limited possibility to satisfy

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<sup>59</sup> For example, the UN Convention on Biological Diversity stipulates that each country should provide financial support for conservation activities “in accordance with its capabilities” and that developed countries should provide new and additional financial resources to developing countries (UN 1992b: Article 20). The UN Framework Convention on Climate Change calls for cooperation by all countries, “in accordance with their common but differentiated responsibilities and respective capabilities” (UN 1992c: Preamble).

<sup>60</sup> For example, the states gathering in the “Renewables Club” see themselves as agenda setters, leading by example in the area of renewable energies (Renewables Club 2013). While responsibility is seen as one rationale for joining this club, other rationales are ambitions for reputation and leadership in innovation policy (Messner et al. 2014, similarly see Schreurs and Tiberghien 2007 on the role of the European Union in climate policy). As another example, Ott (2014) argues for a moral obligation of wealthy and well-ordered societies to take the lead in terms of sustainability policy, thus determining obligations according to a principle of priority (to wealth and orderliness).

claims in the sustainability context must therefore be taken into account in the formulation of principles already. The status and priority of different claims must be determined for the case that not all can be satisfied (see also Section 4.2). Depending on the specific understanding of the human being and nature, one can justify certain principles of priority (e.g. if claims are different in importance or urgency). Priority is a relative notion, aiming at fulfilling the most important or urgent claims first. For example, the Brundtland report emphasizes the “overriding priority” of the needs of the world’s poor (WCED 1987: Ch. 2 §1, see also Langhelle 1999). An alternative (or complementary) way is to use a principle of sufficiency, defining what is “enough” for a claim holder. Several authors have defended an absolute sufficientarian threshold for intergenerational justice (see e.g. Beckerman 1999, Page 2007b, Ott and Döring 2008, Meyer 2010).<sup>61</sup> For claims of nature or natural entities, a sufficientarian threshold might also be defined, but will probably contain a different set of minimum claims.<sup>62</sup>

Such an absolute definition of claims can be understood as a minimal requirement of justice as part of a two-step conception of justice. When the sufficientarian threshold is attained, further requirements (maybe according to a different principle, such as equality or proportionality) may be added.<sup>63</sup> A sufficientarian account, it can be argued, is better able to deal with uncertainty and indeterminacy than accounts based e.g. only on equality, as one does not need complete knowledge of outcomes and can focus on attaining minimal justice (see e.g. Page 2007a with reference to Nussbaum’s account of capabilities).

Principally, one has to take into account the possibility of defining different principles for different domains of application, based on different grounds of justice, and with respect to different communities of justice (cf. Risse 2012). This results in multiple principles, applying to different, but embedded communities of justice. In the sustainability context, multiple principles might be necessary because of the encompassing scope implied in the sustainability concept, the different sustainability relations (with different grounds of justice associated), and the uncertainty related to them (Section 2.2). One should also consider the effect of the mediating systems

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<sup>61</sup> Such a threshold defines a minimum level of some good to which every claim holder is entitled. It provides a way to avoid the non-identity problem, if combined with a threshold notion of harm (see Section 4.1).

<sup>62</sup> Even for such conceptions of justice which assign equal moral standing to certain natural beings, e.g. certain animals, the set of claims will probably differ, as these animals have different interests or a different “good” than humans and therefore different claims, according to most grounds of justice.

<sup>63</sup> However, in some cases not even the sufficientarian threshold may be reachable for all claim holders, due to the limits inherent in the sustainability context (Section 2.2). It is a difficult question for a conception of sustainability justice how a fair balance of claims could be reached in such a case. One option is to aim at an equal satisfaction of claims below the threshold, or – in the utilitarian spirit – a satisfaction “to the point of equal marginal utility” (Singer 1972: 234). Another option is to ensure that even if not all claims can be satisfied *as a result*, the *process* of deciding which claims to satisfy can be regarded as fair (e.g., tossing a coin).

characteristic of the sustainability context (Section 2.2), which may counteract simple distributive principles, and consider whether this needs to be taken into account in the formulation of the principles. The multiple principles could be cumulative, i.e. add up and complement each other. However, different grounds of justice may also lead to conflicting principles in the sustainability context, in which case a conception of sustainability justice would need to provide a way of handling such conflicts.

#### **4.6 Instruments of justice**

What kind of instruments can be employed to fulfil the claims of currently living humans, of humans living in the future, and of “nature” or certain natural beings in the name of sustainability? *How* can these claims be fulfilled?

As instruments of justice are geared towards the fulfilment of claims by claim addressees, which instruments are appropriate of course depends on which claims and claim addressees are defined by a specific conception of sustainability justice (see Sections 4.1 and 4.2). There are a number of further general requirements on instruments of justice arising from the core characteristics of sustainability, as we will discuss in this Section. Furthermore, which instruments are seen as appropriate in the sustainability context crucially depends on basic ontological and epistemological assumptions (Section 2.1). Different framings of the problem at hand (Martin 2013)<sup>64</sup> will lead to different instruments that are proposed.

The encompassing *temporal* scope of the sustainability concept (Section 2.2) means that for intergenerational claims, one needs to design instruments of justice that have some durable effect so that they can serve future humans in the fulfilment of their claims. Classic conceptualizations refer to the continuance of certain types of capital or environmental resources (e.g., Howarth 2007). One can also construct a requirement to maintain a certain quality of the environment (Habib 2013). Ott (2014) argues for an institutionalization of a concern for the future, e.g. through a special government branch that has the task to implement the critical natural capital rule, thereby ensuring a long-term commitment of the state to sustainability.

The encompassing *spatial* scale of the sustainability concept (Section 2.2), having implications for the type of claim holders, claims and claim addressees that arise globally among contemporaries, also needs to be considered in the design of instruments. While some intragenerational claims may well be satisfied with local instruments (e.g. basic needs satisfaction through local food generation), other global claims may only be satisfiable when taking into account and addressing the mediation of relationships through economic, scientific, and technological systems (as defined in Section 2.2).

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<sup>64</sup> Reviewing different environmental justice cases, Martin argues that what is to be distributed is not “simply ‘out there’ to be observed” (2013: 100). Rather, there is contestation over what environmental good exactly is to be distributed. Martin gives as examples different conceptions of “water” (such as, e.g., “virtual water”) and of “forests”.

The *mediation of relationships* thus has implications for global justice today, but also in the other sustainability relations. Instruments of sustainability justice have, at least, to take into account the effects of these systems, or even to directly address them, by considering a reform of these systems. For instance, instruments like Corporate Social Responsibility and initiatives like the UN Global Compact,<sup>65</sup> in combination with regulations, may contribute to a reform of the economic system. Different actors need to work together to make this reform possible, or new actors with a higher extent of power and abilities need to be introduced (see also Section 4.1). Another example is the reform of scientific systems, by movements such as sustainability science (e.g., Kates et al. 2001).

Different characteristics of sustainability hint to the importance of science and education as instruments of sustainability justice.<sup>66</sup> Individual education and learning can give insights into the *threefold relationality* of the human being. This also links to conceiving of individual actors as claim addressees and also as *judicanda* (Sections 4.1 and 4.3).<sup>67</sup> Science and education can furthermore foster technical and scientific knowledge required to tackle the challenges of sustainability and to understand how to *continue* the desired systems, process, entities or measures (Section 2.2). At the same time, the *uncertainty and ignorance* present in the sustainability context (Section 2.2) hint to the fact that no full understanding of their functioning may be reachable and that a proper system of generation, storage and transfer of knowledge is needed (see also Norgaard 1988).<sup>68</sup>

More generally, the ubiquitous uncertainty may require the reduction of complexity of certain systems, and the foregoing of technologies that could cause further uncertainties. It also means that in many cases, one cannot exactly know whether a certain instrument will suffice to satisfy certain claims of sustainability justice. Therefore, a step-by-step approach which is resilient and error-friendly (von Weizsäcker 1984) is needed, so that it can handle failure in parts of the system without major consequences for the whole system.

The *asymmetries* present in the sustainability relations may be countered, at least partly, by procedural instruments of participation and representation. In the intragenerational realm, participation is an established instrument to balance out power differentials.<sup>69</sup> It is prominently advocated in the sustainability context (as a classic example, see UN

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<sup>65</sup> See <http://www.unglobalcompact.org/index.html>.

<sup>66</sup> See also the recommendations in WBGU (2011).

<sup>67</sup> Education for sustainability can also educate about sustainable development as the “right thing to do” (Neumayer 2010) and the attitude of openness, flexibility and precaution needed to cope with uncertainties and ignorance (Faber et al. 1992, see also Sections 2.1, 2.2 and 4.2).

<sup>68</sup> Norgaard (1988) points to the need for a different system of knowledge, including local knowledge.

<sup>69</sup> This is one of the frequently mentioned justifications of participation, while another one is a knowledge rationale, to include different kinds of knowledge about complex problems into decision-making (Waas et al. 2011).

1992a). Representation in decisions is also advocated to address the asymmetries in the intergenerational relationships between humans and in the relationship towards nature: Organizations such as, for instance, the World Future Council<sup>70</sup> or the World Wildlife Fund<sup>71</sup>, claim to represent the interests or good of future humans and nature.

Different instruments may interact in their effects. An instrument which is geared to fulfil claims within one sustainability relation may have (positive or negative) effects for other relations as well. For example, conserving natural capital for members of future generations may have opportunity costs that are distributed very unevenly within the current generation (where most of the direct opportunity costs occur in agriculture, forestry, fishery, according to Ott 2014). This must be taken into account in the design of instruments (e.g. by designing supplementary measures to distribute opportunity costs fairly, cf. Ott 2014). As another example, instruments geared to fulfil intragenerational claims (e.g. to satisfy the basic needs of all current humans), may have positive or negative consequences on the environment, and therefore on claims within the relationship between humans and nature.<sup>72</sup>

Finally, any instrument of justice, or at least all instruments of justice taken together, must respect the *limits* that are a core characteristic of sustainability (Section 2.2): Otherwise, their effect cannot be positively durable and therefore not truly sustainable.

## **5. Conclusion and outlook: Towards sustainability justice**

In this paper, we have argued that the normative dimension of sustainability can be captured in terms of justice. Based on the core characteristics of sustainability, we have discussed the shapes of a concept of *sustainability justice* along the lines of a general conceptual structure of justice.

In this Section, we will sum up the requirements for any conception of sustainability justice (Section 5.1) and discuss how the requirements we identify for the specification of the justice elements in the sustainability context fit with specifications (and possible extensions) of established theories of justice (Section 5.2). Finally, we draw some conclusions for the conceptual debate, as well as for sustainability policy and research (Section 5.3).

### **5.1 Sustainability justice**

Sustainability justice refers to the synthesis – not merely the sum – of the justice claims in the three sustainability relations, referring to inter- and intragenerational justice

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<sup>70</sup> See [www.worldfuturecouncil.org](http://www.worldfuturecouncil.org).

<sup>71</sup> See [www.worldwildlife.org](http://www.worldwildlife.org).

<sup>72</sup> See Glotzbach and Baumgärtner (2012) and Baumgärtner et al. (2012) for different possible relationships – rivalry, facilitation (win-win), or independence – in attaining inter- and intragenerational justice, and Ott (2014) for a critical view on the “win-win” hypothesis between poverty reduction and environmental protection.

between humans, and justice towards nature. The specification of conceptions of sustainability justice is contingent in a twofold way: First, the specification of the elements of justice should fit the concept of sustainability with its core characteristics and underlying ontological, epistemological and ethical assumptions; and second, the elements should be consistent with each other (for example, claims and informational base). Thus, the elements of justice for a conception of sustainability justice can and should not be specified at random, but should ideally be derived systematically from a conception of sustainability and be consistent with each other (and with consistent ontological, epistemological and ethical assumptions).

Sustainability justice requires addressing the claims of currently living humans, humans of future generations, and, as applicable, nature in an integrated way. Any conception of sustainability justice needs at least to consider these three groups of potential claim holders, and give reason for the inclusion or exclusion of members of these groups in the community of justice.<sup>73</sup> Their claims may be defined in different ways (e.g., in terms of a “decent life”, “security” or in terms of being treated virtuously), depending on the ground of justice. Moreover, there are some general requirements for the specification of claims from the core characteristics of sustainability, e.g. the avoidance of risks (derived from the uncertainty prevalent in the sustainability context) and the provision under which justice can flourish and under which obligations to later generations can be fulfilled (derived from the asymmetry of the sustainability relations). A sufficientarian threshold of claims can be formulated as a minimum standard of sustainability justice. Such an approach based on the sufficiency principle arguably allows better to deal with uncertainty and indeterminacy. Alternatively (or complementarily), one may apply a principle of priority (e.g. for the needs of the world’s poor). The informational base to measure the fulfilment of claims needs to be consistent with the claims formulated in the specific conception of sustainability justice, may differ between the sustainability relations and needs to take account of epistemological restrictions.

Claim addressees need to be actors fulfilling the preconditions of (negative and positive) responsibility: freedom, sufficient knowledge and power to act. Responsibility may be divided between different (individual and collective) actors, and between (present and future) generations: A dynamic perspective is needed, allowing for new claim addressees to be defined in the future. This in turn involves an obligation to sustain conditions in which these future claim addressees will be able to fulfil their obligations. Furthermore, the asymmetries of the sustainability relations imply that obligations should be determined according to the principles of proportionality and priority (where more ability to act implies more – or exclusive – obligations). Different grounds of justice may give rise to a plurality of principles both regarding obligations

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<sup>73</sup> See Dobson (1998: 244f.) for a similar argument. Compare also Agyeman et al. (2003b: 3). If nature is not seen as a claim holder in its own right, sustainability justice “shrinks” to a synthesis of the justice claims within the inter- and intragenerational relations of humans. Nature may also be seen as morally relevant in a weaker sense, in the sense that there are moral obligations towards or regarding (entities in) nature that are not grounded in specific rights of (entities in) nature.



and regarding claims. These plural principles may complement each other, but may also lead to conflicting claims and obligations.

The *judicanda* of sustainability justice can in principle belong to all four established categories of *judicanda*: actors, actions, rules or states of affairs. As the sustainability relations are often mediated by complex economic, technological and scientific systems, these structures constitute further, and indeed very important, *judicanda* of sustainability justice. Coping with these systems in a sustainable manner might require their reform (as an instrument of justice), and also supposes the existence and definition of adequate claim addressees (such as collective actors). In general, the adequate instruments depend on the specification of claims and claim addressees by a specific conception of sustainability justice. We have discussed instruments on both individual and collective, and on both local and global levels.

## **5.2 Established theories of justice and sustainability**

The set of requirements for sustainability justice outlined is a challenge for established theories of justice. Aspects such as future generations, nature, uncertainty, and systemic mediation were not the main focus of traditional theories of justice. These aspects have been addressed only casually, if at all.

For instance, the extended definition of the community of justice, with the need to include the members of the current generation and some or all members of future generations as well as natural entities as claim holders, goes beyond many established theories of justice, as many philosophers defined the community of justice more narrowly in time and space. Particularly the extension to natural entities, e.g. sentient beings, is in contrast to many conceptions of justice that originally defined the community of justice by humans and operated on a strict distinction between humans and other beings, such as the conceptions of Kant ([1785] 1998, [1788] 1997) or Rawls (1971). However, some theories of justice, e.g. utilitarian based theories (Singer 1990), allow the inclusion of non-human beings as claim holders.

Also, considering economic, technological and scientific systems (with their institutionalizations and fundamental patterns of thought and action, see Sections 2.2 and 4.4, Becker 2012) as *judicanda* is a challenge to traditional theories of justice. Traditional political philosophy was focused on immediate interactions of individuals and on basic political and societal structures, referring mainly to the state. Jonas (1974, [1979] 1984) referred to this traditional political philosophy as an ethics of the “here and now”. Even Rawls’ (1971) approach, which particularly focused on social justice and the related societal and political arrangements, cannot fully capture the complex economic, technological and scientific systems that are a primary *judicandum* of sustainability justice.

Any effort to apply established theories of justice to sustainability needs to be aware of potential limits and frictions. Established theories of justice need to be substantially

modified with regard to the specific characteristics of sustainability and the resulting general requirements for sustainability justice outlined in Section 4.

### **5.3 Concluding remarks and outlook**

We have demonstrated that sustainability implies specific requirements for any adequate conception of sustainability justice. In particular, a conception of sustainability justice needs to be consistent with core characteristics of sustainability and its underlying assumptions. Existing theories of justice do not meet all the requirements. While there have been some modifications of traditional theories to address sustainability (Page 2007a, 2007b, Becker 2012, Glotzbach 2013, Habib 2013, Ott 2014, among others), more research is needed to develop conceptions of sustainability justice that treat the claims within all three sustainability relations (that is, in the relations of current persons with contemporaries, future humans and nature) in an integrated way, and take account of the core characteristics of sustainability and their underlying assumptions.

As we have pointed out (Section 2), sustainability is an integrative concept and therefore, sustainability justice should aim to integrate different claims arising within different sustainability relations and aim to achieve them simultaneously. In view of the limits that are characteristic of the sustainability context (Section 2.2), however, this may lead to problems of feasibility on the “production side” and therefore require decisions on how to handle such conflicts on the “value side” (see also Section 4.2). One may assign priority or greater weight to one type of claim (e.g., the needs of the world’s poor, WCED 1987: Ch. 2 §1). One may define a certain minimum threshold for each type of claim and treat such claims (and the corresponding obligations) as mutual constraints (as Ott 2014 considers for inter- and intragenerational obligations; compare also Callahan [1971] 1981). One may assign *prima facie* equal rank to the claims within different relations (cf. Baumgärtner et al. 2012). One may decide on the relative importance and urgency of claims case-by-case depending on the specific grounds of justice relevant in the context (as hinted at in Section 4.2), or use procedural rules to resolve conflicts of claims (cf. Taylor 1986). Advancement in these questions is an important challenge for sustainability justice countering the danger of “overburdening” (Ott 2014) of the concept while living up to its integrative nature.

Our approach of interpreting sustainability as justice at the general conceptual level helps to systematically understand the option space and different possibilities for specifications of the normative dimension of sustainability, depending on the set of underlying basic ontological, epistemological and ethical assumptions.

Sustainability research needs to systematically incorporate the normative dimension of sustainability and be consistent with the basic understanding of the world it is based on. Many of the approaches put forward in the literature, however, are not explicit about their underlying ethical, ontological and epistemological assumptions (Spash 2012). In particular, the normative dimension of sustainability should not be treated as an add-on, but should be an integral part of sustainability research. A purely descriptive enquiry

into the systems, processes, or entities to be continued (see Section 2.2) alone cannot give guidance on how to act in a sustainable manner.

In view of policy-making, the specification of claim holders and claim addressees, claims and obligations, informational base and principles, *judicanda* and instruments allows clarifying goals and responsibilities for sustainability policies. This is especially important in the face of limited feasibility, where a well-specified conception of sustainability justice can give guidance to handle trade-offs between different claims and goals.

To sum up, the systematic and general conceptual framework proposed here contributes to the conceptual clarification in the debate on justice and sustainability. As such it may give guidance to sustainability policy and may motivate and guide the future direction of research for sustainability.

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**Paper 3:**  
**Economic analysis of trade-offs between justices**

# Economic analysis of trade-offs between justices

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## Abstract

We argue that economics – as the scientific method of analysing trade-offs – can be helpful (and may even be indispensable) for assessing the trade-offs between intergenerational and intragenerational justice. Economic analysis can delineate the “opportunity set” of politics with respect to the two normative objectives of inter- and intragenerational justice, i.e. it can describe which outcomes are feasible in achieving the two objectives in a given context, and which are not. It can distinguish efficient from inefficient uses of instruments of justice. It can identify the “opportunity cost” of attaining one justice to a higher degree, in terms of less achievement of the other. We find that, under very general conditions, (1) efficiency in the use of instruments of justice implies that there is rivalry between the two justices and the opportunity cost of either justice is positive; (2) negative opportunity costs of achieving one justice exist if there is facilitation between the two justices, which can only happen if instruments of justice are used inefficiently; (3) opportunity costs of achieving one justice are zero if the two justices are independent of each other, which is the case in the interior of the opportunity set where instruments of justice are used inefficiently.

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## 1. Introduction

Justice is a multifarious normative idea about the quality of relationships among members of society. One may argue that there are many “justices”, insofar as different parts of society, different types of relationships, or different substantive areas are addressed. The overall societal goal (“vision”) of sustainability particularly addresses two justices: (i) justice between currently living persons (“intragenerational justice”), and (ii) justice between members of present and future generations (“intergenerational justice”).<sup>1,2</sup>

With two (or more) different justices as normative objectives of equal rank, it may be that there exists a trade-off between them, that is, performing better with regard to one objective implies performing worse with regard to the other one. In particular, it may be that fostering intragenerational justice makes it more difficult to attain intergenerational justice, and vice versa. Such a trade-off at the level of normative objectives of equal rank – if it exists – asks for societal resolution. The question is: how to act in the face of different justices? Important examples for such a trade-off include government spending on social welfare vs. investment in public infrastructure and education, or the exploitation vs. conservation of non-renewable natural resources.

In this essay, we argue that economics – as the scientific method of analysing trade-offs – can be helpful (and may even be indispensable) for assessing the trade-offs between different justices. We understand economics as being defined by its method, rather than by its subject matter or by some normative objective<sup>3</sup>, and we sketch how to employ this method to analyse trade-offs between justices. An important contribution that economics can make to this analysis is to introduce the secondary normative criterion of *efficiency* which characterises the non-wasteful use of scarce resources to attain the primary normative objectives of justice: a situation is efficient with regard to different objectives if it is not possible to improve on one objective without doing worse on another one. Being derived from primary normative objectives, the criterion of efficiency itself makes a normative claim: it is good to use scarce resources efficiently to attain intra- and intergenerational justice; it is wrong to use scarce resources inefficiently for that purpose.

This approach of using economics as a method to study the efficient use of scarce resources in the attainment of rivaling normative objectives of justice<sup>4</sup> opens an innovative perspective on what the role of economics should be (as a method) in the

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<sup>1</sup> WCED 1987.

<sup>2</sup> In addition, some conceptions of sustainability also include justice towards nature as a third normative objective of equal rank.

<sup>3</sup> This is the standard interpretation of modern economics according to Robbins 1932. For an encompassing discussion of this and other interpretations of economics, see Hausman 2007.

<sup>4</sup> This approach, as applied to the three justices included in the vision of sustainability – intra- and intergenerational justice as well as justice towards nature – has been called “sustainability economics” (Baumgärtner and Quaas 2010, Baumgärtner 2011).

discussion of justice, and on how to bridge the gap – systematically and rigorously – between ideal theory and non-ideal politics.

## 2. Specifying justice(s)

To inform our understanding of intra- and intergenerational justice, the abstract and general concept of justice needs to be further specified. We take justice to generally refer to the mutual claims of members of the community of justice from the standpoint of impartiality.<sup>5</sup> This minimum definition leaves ample room for very different, and sometimes much contested, conceptions of justice. Each of them can be described more precisely by specifying a number of elements in a “syntax of justice”.<sup>6,7</sup> In the following, we specify the essential elements of the syntax to clarify the conceptions of inter- and intragenerational justice.

**The community of justice.** Justice refers to mutual claims<sup>8</sup> within a community of justice. We term those holding a particular claim the *claim holders*, and those responsible for the fulfilment of the claim the *claim addressees*.<sup>9</sup> Intragenerational justice entails claims held by currently living persons (claim holders) towards other currently living persons (claim addressees). Intergenerational justice entails claims held by persons living in the future (“future generations”, claim holders) towards persons living today (claim addressees).<sup>10</sup> It is not necessary that such a claim is explicitly put forward by the claim holder (which may be impossible in the case of intergenerational justice). What matters is that a legitimate claim might be formulated by someone speaking for the claim holder.

**Positive and negative claims.** Generally, claims can be positive, i.e. defining an entitlement to a certain good,<sup>11</sup> or negative, i.e. demanding freedom from harm.<sup>12</sup> Claims

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<sup>5</sup> E.g. Gosepath 2007: 82.

<sup>6</sup> Baumgärtner / Glotzbach / Stumpf 2011.

<sup>7</sup> This “syntax” is our approach to structure what has been called the different “dimensions” (Pogge 2006, Dobson 1998, see also Ott and Döring 2008) of the concept of justice. It allows fully specifying a particular conception of justice.

<sup>8</sup> Young 1994, Ott and Döring 2008: 59 et seqq.

<sup>9</sup> The delineation of the community of justice, especially the question of who is to be included as a claim holder, can be drawn according to different criteria such as reciprocity, dignity, ability to experience pain, etc. (e.g. Baumgärtner, Glotzbach and Stumpf 2011).

<sup>10</sup> The third justice often included in sustainability conceptions, justice towards nature, refers to claims held by “nature”, e.g. higher non-human animals capable of experiencing pain or of pursuing goals, against humanity. Thus, the claim holders differ, while the claim addressees belong to the group of currently living persons in all three cases. While intra- and intergenerational justice reflect an anthropocentric idea of justice, according to which nature matters to humans exclusively because of its instrumental value, the idea of justice towards nature assigns an intrinsic value to nature (Baumgärtner and Quaas 2010: Section 2), so that “nature” becomes a claim holder in its own right.

<sup>11</sup> “Goods” should be understood in a wide sense.

<sup>12</sup> Cf. Baumgärtner / Glotzbach / Stumpf 2011.

are considered legitimate if they could be agreed on from the standpoint of impartiality and equal consideration. For example, intergenerational justice claims could be specified as a positive claim of future generations to certain stocks and systems, such as a democratic political system, a stock of manufactured capital and critical knowledge, or intact ecosystems, implying a responsibility of the present generation to pass on these stocks and systems in a good state to future generations. Future generations may also have a negative claim: not to be harmed by any activities of the presently living generation, e.g. through increasing systemic risks caused by a dysfunctional global financial system or through nuclear waste left over as a byproduct of present electricity production. Intragenerational justice claims include the positive claim for satisfaction of basic needs, and the negative claim that one's freedoms should not be harmed (human rights).

**Judicandum.** We use the term *judicandum* to describe that which is to be judged as just or unjust. Judicanda can be agents, actions, institutions or states of the world.<sup>13</sup> When discussing inter- and intragenerational justice, the judicanda could be the actions of currently living persons (and the consequences of these actions, such as, say, the distribution of certain primary goods), as the claim addressees of both justices belong to the current generation.

**Instruments of justice.** We use the term *instrument of justice* to describe that which is to be used to satisfy the legitimate claims of justice. In many conceptions of justice, these will be objects of distribution (answers to the question "What is distributed?"<sup>14</sup>), but the satisfaction of legitimate claims could also be achieved via, say, institutional reform to ensure procedural justice. So, the question here is *how* legitimate claims are addressed. For example, one instrument of intergenerational justice could be the investment in public goods such as education and infrastructure, or the distribution of stocks of non-renewable resources between different generations. The aim of intragenerational justice could, for example, require institutional reform of international trade rules ("fairness").

**Metric for the judgment.** For statements about the degree of attainment of a normative objective, there must be some way to measure the justice of the judicanda: one needs a *metric* to judge whether, and to what extent, a judicandum is just or unjust. For this metric, different informational bases have been proposed, such as e.g. capabilities, primary goods, or utility.<sup>15</sup> It is possible to use different metrics for inter- and intragenerational justice.

In sum, judging a certain judicandum as inter- or intragenerationally just according to a metric requires first to specify the positive and negative claims of claim holders in present and future generations against claim addressees in the present generation, which are to be satisfied by certain instruments of justice.

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<sup>13</sup> Pogge 2006: 863.

<sup>14</sup> *Sensu* Dobson 1998: 73 et seqq.

<sup>15</sup> Cf. Pogge 2006: 868.

As we discuss two different justices, both of which demand the fulfilment of legitimate claims through the use of instruments of justice by the same addressee, a non-trivial decision problem arises for this addressee – the present generation. We therefore need to have a closer look at the possible relationships of these two justices.

### 3. Relationships between justices

Generally, the two justices are related both on the “value” side and the “production” side.<sup>16</sup> On the value side, the relationship refers to the desirability, from a societal point of view, of attaining one justice relative to the other one. For example, society may be willing to trade-off one justice against the other<sup>17</sup>, or one justice might strictly dominate the other. In this essay, we build on the minimal and very general premise, widely held in the literature,<sup>18</sup> that both intra- and intergenerational justice are considered by society as desirable normative objectives of equal rank. Beyond that, we do not further discuss the value side.

On the production side, the relationship refers to the feasible outcomes of the use of instruments of justice, that is, combinations of degrees of attainment of both justices. Here, what is feasible is determined by the structure and functioning of the given system, based on natural resource endowments, technology, institutions, etc. The set of all feasible combinations in terms of the two justices is called the “opportunity set”. It describes society’s options for choice, which are independent of what society considers desirable. That is, the production side and the value side are independent of each other.

Scientific analysis and political implementation have shown that, in general, three relationships may hold on the production side between intra- and intergenerational justice:<sup>19</sup>

- (1) **Independency:** The objectives of intra- and intergenerational justice can be achieved independently, that is, attaining one objective to a higher degree does not necessitate any change in the degree to which one attains the other one.<sup>20</sup>
- (2) **Facilitation:** Achieving one objective supports achieving the other one, that is, attaining one objective to a higher degree induces a higher degree of attainment of the other one.<sup>21,22</sup>

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<sup>16</sup> LeGrand 1990: 555.

<sup>17</sup> Barry 1965: Section 1.

<sup>18</sup> E.g. Dobson 1998: 3 et seqq., Ott / Döring 2008, Visser’t Hooft 2007: 56, WCED 1987: 43.

<sup>19</sup> Here, we extend the argument from Glotzbach and Baumgärtner (in press: Section 3) which originally refers to justice with regard to the use and conservation of ecosystems.

<sup>20</sup> Independency does not need to be symmetric: achieving one objective may be independent of achieving the other one, but not vice versa.

<sup>21</sup> This relationship is similar to the concept of “joint production” in economics, which means that the production of a wanted good necessarily gives rise to additional outputs (cf. Baumgärtner et al. 2006).

- (3) **Rivalry**: A fundamental rivalry (or “trade-off”) exists between the objectives of intra- and intergenerational justice, that is, attaining one objective to a higher degree necessarily reduces the degree to which one attains the other one.<sup>23</sup>

For illustration, we give examples from different contexts. Independency is an assumption frequently made in ecological, environmental and resource economics.<sup>24</sup> For example, cap-and-trade systems for greenhouse gas emissions imply that the overall intergenerational impact on global climate can be governed independently of the initial intragenerational distribution of emission certificates.<sup>25</sup> Facilitation is prominently stated with regard to the provision of public goods. For instance, public investment in education or the improvement of public transportation systems may simultaneously benefit today’s poor and future persons. Rivalry is often assumed when the possibility of intragenerational redistribution of access rights to rival resources is heavily limited. In such cases, meeting the legitimate claims of the poor to the resource possibly reduces the total resource stock passed on to future generations and, thereby, may be at the expense of intergenerational justice. For example, if the government spends a higher share of tax revenue to increase social support of the poor without being able to enforce higher taxes on the rich, the government has less revenue to invest in public infrastructure and education.

A host of specific **determinants** – natural, technological and institutional factors – impact on the production relationship between intra- and intergenerational justice, for example because they influence the availability and effectiveness of the instruments of justice. Thereby, they affect which relationship holds. Two examples for such determinants are population development and political restrictions. In many countries of the global North, a population development characterised by higher life expectancy and lower birth rates challenges the existing social security systems. A potential trade-off among the goal to reduce old-age poverty (intragenerational justice), and the goal to avoid an unacceptably high financial burden on the young generation (intergenerational justice) may occur. Political restrictions limit the political scope for redistribution of resources within a society. If, for instance, the political scope for redistribution of wealth within a society is tight due to resistance against introduction of an inheritance tax, the situation of the poor can only be improved by increasing public expenditures and, thereby, possibly adding to public debt in the long term – therefore causing a trade-off between inter- and intragenerational justice.

Regarding the production relationship between intra- and intergenerational justice in the use and conservation of ecosystem services, Glotzbach and Baumgärtner (in press: Section 4) found that the determinants impacting on this relationship are the quantity and quality of ecosystem services, population development, the substitutability of

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<sup>22</sup> This facilitation may be one-way, or the other way, or a mutual facilitation between the achievement of the two objectives.

<sup>23</sup> Like independency and facilitation, rivalry does not need to be symmetric.

<sup>24</sup> E.g. Dasgupta and Heal 1979.

<sup>25</sup> E.g. Perman *et al.* 2003: 219 et seqq.

ecosystem services by human-made goods and services, technological progress, and institutions and political restrictions. The determinant substitutability of ecosystem services, for instance, influences the character of the relationship between the justices as follows: if an ecosystem service is substitutable by human made goods and services, an overexploitation of the ecosystem service by members of the present generation to increase intragenerational justice can be compensated by sufficient investment in other forms of physical, social and human capital to secure intergenerational justice – the relationship between the justices is one of independency or facilitation. If an ecosystem service is non-substitutable, an overexploitation of the ecosystem service by members of the present generation to increase intragenerational justice cannot be compensated and, hence, reduces the degree of intergenerational justice – the relationship between the justices is one of rivalry.

In sum, the opportunity set, which embodies information on the production relationships between the two justices in all feasible outcomes, crucially depends on a number of fundamental context-specific determinants.

#### **4. Scarcity, economic efficiency, and opportunity costs**

Irrespective of which production relationship holds between inter- and intragenerational justice, society has to make a decision on how to use some instruments of justice in the attainment of these objectives. Very often, the use of instruments of justice means employing scarce resources that may be used in alternative ways.<sup>26</sup> This is where the key contribution of economics to the study of societal problems comes in: how to use scarce resources efficiently in the attainment of some objectives? According to a classical definition, economics

studies human behaviour as a relationship between [given] ends and scarce means which have alternative uses.<sup>27</sup>

With this definition, economists generally understand efficiency as non-wastefulness in the use of “scarce means” to attain some “ends” that humans pursue in their actions. In this understanding, ends are open-ended: they are not determined by economics as a method. In principle, it could be any ends that humans pursue. Here, we focus on intra- and intergenerational justice as two primary normative objectives that humans pursue.<sup>28</sup>

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<sup>26</sup> Scarcity is generally considered as central to many important problems of justice (Dobson 1998: 12).

<sup>27</sup> Robbins 1932: 15.

<sup>28</sup> This goes beyond what economists usually consider as ends (cf. Baumgärtner 2011). Traditionally, economics has been concerned with the end of an ever better satisfaction of human needs and wants. This end can be further specified and operationalised as individual utilities (microeconomics), or as policy goals such as low inflation and low unemployment (macroeconomics).

Drawing on the common definition of efficiency by Pareto (1906),<sup>29</sup> one can define efficiency as follows:

An allocation of resources is efficient if it is impossible to move toward the attainment of one social objective without moving away from the attainment of another objective.<sup>30</sup>

The minimal assumption needed to define efficiency in this way is that, for each justice, the metric of justice allows a distinction to be made between a higher and a lower degree of attainment of the respective justice. In particular, it is neither necessary to assume cardinality of each metric nor commensurability of the two justices.<sup>31</sup> Thus, this notion of efficiency and the subsequent analysis are very general.

If efficiency is related in this manner to some primary normative objectives, it acquires the status of a secondary normative objective.<sup>32,33</sup> This means, it is good to use resources efficiently; it is wrong to use them inefficiently. In this perspective, the contribution of economics to the study of societal problems lies in characterising the (in)efficient use of scarce means in the attainment of multiple primary normative objectives. For this purpose, economics provides a broad set of methods to analyse, display and empirically verify the relationships between these objectives.

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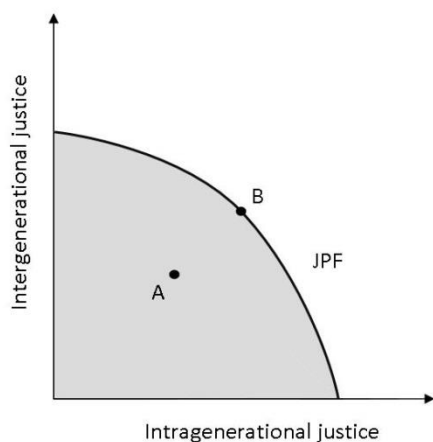
<sup>29</sup> According to the original criterion of Pareto (1906), which assesses allocations based on the wellbeing of individual persons, an allocation of resources is *efficient* if no one can be made better off (in terms of this person's individual utility) without making anyone else worse off (in terms of the other person's individual utility).

<sup>30</sup> LeGrand 1990: 559.

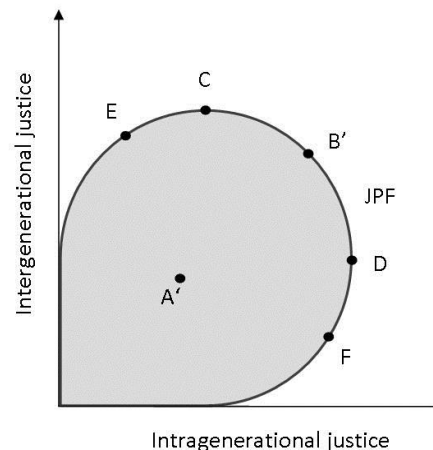
<sup>31</sup> A cardinal metric is one that preserves orderings uniquely up to linear transformations; commensurability of justices means that the metric of both justices is in the same units.

<sup>32</sup> LeGrand 1990: 560.

<sup>33</sup> Here, we study the relationship, including a potential trade-off, between two primary normative objectives. There is also a discussion on the so-called "equity-efficiency trade-off" (surveyed by e.g. Putterman et al. 1998), where equity and efficiency are treated as normative objectives of equal rank. But efficiency – in contrast to equity – cannot serve as a primary normative objective, so that this trade-off is irrelevant (LeGrand 1990: 566).



**Figure 1: Rivalry and independency**



**Figure 2: Rivalry, facilitation, and independency**

Figures 1 and 2 illustrate the opportunity set and efficiency in attaining the two normative objectives of intra- and intergenerational justice. The axes indicate the degree of attainment of inter- and intragenerational justice, respectively, based on the respective metrics of justice. Thus each point in the diagram represents an outcome of the use of the instruments of justice. In Figure 1, the shaded area depicts all feasible outcomes in the given context, that is, for given resource endowment, technology, institutions, and the like (“opportunity set”). The curve JPF (“justice possibility frontier”) denotes its frontier. Outcomes to the northeast of this curve are not feasible in the given context. Point A represents an outcome where the instruments of justice are used in an inefficient manner as more intergenerational justice could be achieved without sacrificing intragenerational justice. In contrast, the use of the instruments of justice in point B is efficient as no higher degree of attainment of one justice is feasible without reducing the other one. Generally, all outcomes below the JPF-curve correspond to inefficient uses of the instruments of justice, whereas all outcomes on the curve correspond to efficient uses of these instruments.

Obviously, in point B there is rivalry between intragenerational and intergenerational justice: attaining one to a higher degree necessarily reduces the degree to which one attains the other one. This loss can be measured by the concept of “opportunity cost”. The opportunity cost of increasing, say, intragenerational justice is the corresponding minimal loss of intergenerational justice. In contrast, at point A there is independency between intragenerational and intergenerational justice: attaining one to a higher degree does not necessitate any change in the degree to which one attains the other one. Hence, there are no opportunity costs of increasing one or the other justice. Generally, in all efficient outcomes, i.e. on the JPF-curve, there is rivalry between the two justices and, thus, positive opportunity costs. In all inefficient outcomes, i.e. under the JPF-curve, there is independency between the two justices and, thus, zero opportunity costs.

For example, the opportunity set of Figure 1 may refer to the use of a non-renewable natural resource such as oil or gas: the resource may be exploited today for social



welfare policy (intragenerational justice); alternatively, it may be conserved for future generations (intergenerational justice).

In a different context, the opportunity set may look as in Figure 2. The shaded area again depicts all outcomes that are feasible in this context (“opportunity set”), with the JPF-curve as its frontier. As in Figure 1, outcomes A’ and B’ correspond to an inefficient and an efficient use, respectively, of the instruments of justice. Obviously, all points on the JPF-curve between C and D represent outcomes of efficient uses of the instrument of justice, because no higher degree of attainment of one justice is feasible without reducing the other one. These outcomes are characterised by rivalry between the two justices and positive opportunity costs of either justice.

Outcome E is inefficient, but as it lies on the JPF, attaining intergenerational justice to a higher degree starting from this point necessarily also leads to a higher degree of intragenerational justice. That is, in outcome E there is facilitation between the two justices. But facilitation is not symmetric: attaining a higher degree of intragenerational justice, starting again from point E, does not necessarily induce a higher degree of intergenerational justice. Hence, the opportunity cost of increasing intergenerational justice is negative: increasing intergenerational justice does not incur a loss, but a gain of intragenerational justice, and the opportunity cost of increasing intragenerational justice is zero. In outcome F, the situation is reversed: attaining intragenerational justice to a higher degree facilitates attaining intergenerational justice to a higher degree, but not vice versa; hence, the opportunity cost of increasing intragenerational justice is negative, while the opportunity cost of increasing intergenerational justice is zero. Generally, all (inefficient) uses of instruments of justice along increasing parts of the JPF correspond to outcomes where attaining one justice to a higher degree facilitates attaining the other one, but not vice versa, so that the former has negative opportunity cost, while the latter has zero opportunity cost.

For example, the opportunity set of Figure 2 may refer to government spending on education, where a broader educational base decreases income inequality within a generation (intragenerational justice), and at the same time increases prospects for economic growth over time (intergenerational justice).

As the figures and examples illustrate, the shape of the opportunity set may differ from context to context, and with it the relationships between the two justices.<sup>34</sup> As the opportunity set is fundamentally determined by natural resource endowment,

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<sup>34</sup> In addition to the two fundamental shapes of the opportunity set discussed here, other shapes are imaginable. For example, the justice possibility frontier may be linearly downward sloping, implying constant opportunity costs in all efficient outcomes. It may also be convex (resulting e.g. from increasing returns to scale in the use of instruments of justice), and the frontier may not even intersect but asymptotically approach the axes. This would imply that the opportunity costs of one justice may rise to infinity. Yet, all insights into the relationships between the two justices and efficiency that are essential for our main line of argument can already be obtained from the two shapes of the opportunity set presented here. We therefore refrain from discussing additional shapes in detail.

technology, institutions, etc. (cf. Section 3), a change in these fundamental determinants may change the opportunity set and the relationships between the two justices. For example, with given endowment of a non-renewable resource, technical progress in resource extraction would shift the JPF-curve in Figure 1 outwards.

## 5. Conclusion

Robbins' (1932) definition of economics delimits the contribution of economics to the study of normative questions. It does not lie in determining what ends to pursue or in developing the means to achieve a normative objective. Rather, the focus of economic analysis is on efficiency, i.e. non-wastefulness in the use of scarce resources that have alternative uses as means to attain given normative objectives. Thus, in contexts where there is no scarcity or no alternatives exist, economics does not lend itself to the discussion of normative questions. Yet, many questions of justice arise under conditions of scarcity and involve the freedom to make choices. Such questions can be discussed in economic terms.

Economic analysis of inter- and intragenerational justice builds on three fundamental, and rather weak, assumptions:

- (1) On the “value” side, the two justices are considered by society to be of equal rank.
- (2) For each justice, one can measure the degree to which one attains this justice. This measurement does not need to be cardinal but may be ordinal, and the two justices do not need to be commensurable but the two metrics may be in different units.
- (3) For a given context – specified by natural, technological, institutional factors, etc. – one can describe the outcome of using scarce resources (as instruments of justice) in terms of these measures of the two justices.

With these assumptions, the genuine and original contribution of an economic analysis of justice is threefold:

- (1) Economic analysis can delineate the “opportunity set” of politics with respect to the two normative objectives of inter- and intragenerational justice, i.e. it can describe which outcomes are feasible in achieving the two objectives in a given context, and which are not. The opportunity set includes information on whether the production relationship between the two justices in some outcome is one of rivalry (i.e. trade-off), independency, or facilitation; and it distinguishes efficient from inefficient allocations of scarce resources.  
As efficiency, when related to the primary normative objectives of intergenerational and intragenerational justice, is a secondary normative objective, one conclusion for policy-making is straightforward: instruments of justice should be used efficiently; they should not be used inefficiently.

One important conclusion about the production relationship between intra- and intergenerational justice follows directly from the very definition of efficiency. In outcomes of efficient resource use there is always rivalry between the different justices – attaining one justice to a higher degree necessarily reduces the degree to which the other is attained. In contrast, in outcomes of inefficient resource use there is either independency between the two justices – the level of attainment of one justice can be improved without doing worse on the other one, or even both can be improved – or facilitation – improving the level of attainment of one justice necessarily also improves the other one.<sup>35</sup>

- (2) Based on the opportunity set, economic analysis can identify the “opportunity cost” of attaining one justice to a higher degree, in terms of less achievement of the other. Positive opportunity costs of achieving one justice exist if there is rivalry between the two normative objectives of intergenerational and intragenerational justice; negative opportunity costs of achieving one justice exist if there is facilitation between the two justices; opportunity costs are zero if there is independency between the two justices. Generally, negative and zero opportunity costs indicate inefficiency in the allocation of resources, while positive opportunity costs indicate an efficient resource allocation.
- (3) Economic analysis can identify how the opportunity set changes as its determinants – natural, technological, institutional factors, etc. – change. In particular, it can study how the occurrence and extent of rivalry, independency or facilitation in the relationship between the two justices changes as underlying determinants change. Hence, it may suggest how to manage these underlying determinants in order to decrease the degree of rivalry and to increase the degree of independency or facilitation.

The economic analysis presented here cannot determine which of the efficient outcomes on the justice possibility frontier is preferable. Moving from one efficient outcome to another means incurring opportunity costs – i.e. furthering the degree of attainment of one normative objective at the cost of the other one. Depending on how the relationship between the two normative objectives is shaped on the “value side”, it might well be acceptable to incur these costs – for example, burdening the presently living with a small tax that would prevent future generations from huge damage.

So, economic analysis can give no clear guidance on how to decide among efficient outcomes – i.e. in the case of rivalry between objectives. Its contribution lies in pointing out clearly inefficient outcomes, and in identifying the opportunity costs of moving from one efficient outcome to another.

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<sup>35</sup> In the (inefficient) interior of the opportunity set there is always independency; and facilitation can only occur on the inefficient part of the justice possibility frontier.

These insights can help make an informed decision about how to use scarce resources that have alternative uses to attain the two normative objectives of inter- and intragenerational justice in a non-wasteful manner. This seems to be a valuable contribution for societies facing decisions about the use of scarce resources in view of different normative objectives of equal rank. Of course, this would not make hard decisions easy, but at least efficiently difficult.

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**Paper 4:**  
**Reconstructing the “biopiracy” debate from a justice  
perspective**

# Reconstructing the “biopiracy” debate from a justice perspective

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## Abstract

The Convention on Biological Diversity (CBD) was set up not only to foster the conservation and sustainable use of biodiversity, but also to address problems of *justice* connected to the utilization of biodiversity. The requirements of the CBD regarding the utilization of genetic resources and traditional knowledge, in the so called Access and Benefit-Sharing framework, are based on an exchange perspective, leading to approaches of “justice-in-exchange”. As debates about “biopiracy” show, this perspective might be too narrow. This study addresses the question, which problems of justice arise regarding the utilization of genetic resources and traditional knowledge, especially if associated with patenting. By reconstructing the “biopiracy” debate, it can be shown that the exchange perspective is insufficient and therefore complementary conceptions, namely of distributive justice, corrective justice and structural justice have to be taken into account.

## Acknowledgements

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## 1. Introduction

One of the most important treaties regulating the conservation and use of biodiversity on the international level is the Convention on Biological Diversity (CBD) of 1992.<sup>1</sup> It differs from other international environmental treaties in a remarkable way: Questions of fairness, equity and justice play an explicit and prominent role.<sup>2</sup>

In the Access and Benefit-Sharing (ABS) framework established by the CBD and the Nagoya Protocol<sup>3</sup>, the main requirements are that benefits shall be granted in exchange for access to genetic resources and traditional knowledge (*benefit-sharing*, CBD: Art. 1 and 15.7; Nagoya Protocol: Art. 3 and 6), that prior informed consent (*PIC*) shall be obtained before access (CBD: Art. 15.5; Nagoya Protocol: Art. 6), and that mutually agreed terms (*MAT*) for the benefit-sharing shall be negotiated (CBD: Art. 15. 4 and 15.7; Nagoya Protocol: Art. 5, 6, 7 and 18, inter alia). The ABS framework is thus based on an *exchange perspective*.

But is this perspective sufficient? To answer this question, it is helpful to examine why the ABS framework was established. It emerged as a response to the practice of *bioprospecting* and connected allegations of “*biopiracy*”. Bioprospecting is the search for biological and genetic materials and the investigation of the properties these materials have for practical applications in science and industry (cf. Löbner 2005: 36). Many plants and microorganisms have a high potential to provide prototypes for new pharmaceuticals, agrochemicals and other goods (WBGU 2000: 69). In this process of bioprospecting, the so-called traditional knowledge of indigenous and local communities can play an important role by enhancing the probability of success (to find a new lead substance, e.g. for pharmaceuticals) up to four times (Shiva 2002: 85). The term “*biopiracy*” has come up as a political term connected to this practice of bioprospecting and to the ABS framework. As no general definition of the term “*biopiracy*” exists, different authors use it in different ways, emphasizing different aspects.<sup>4</sup> But still, we can say that the term is generally associated with some kind of

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<sup>1</sup> The Convention gives a well-known definition of biodiversity in its Article 2: “‘Biological diversity’ means the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.”

<sup>2</sup> One of the three objectives of the Convention is “the fair and equitable sharing of benefits arising out of the utilization of genetic resources” (CBD: Art. 1), and it also calls for benefit-sharing in respect to “traditional knowledge” (CBD: Art. 8j).

<sup>3</sup> The Nagoya Protocol on Access and Benefit-Sharing of 2010, a protocol to the CBD, further develops the requirements and recommendations of the CBD for benefit-sharing regarding genetic resources and traditional knowledge (Nagoya Protocol: Art. 3).

<sup>4</sup> That is why Chris Hamilton (2006: 173) calls it an “index for a number of different concerns”. For example, David Castle and Richard E. Gold describe “*biopiracy*” using the following “wrongful exploitation scenario”: “An indigenous group has traditional knowledge. Another group, typically but not necessarily members of an industrialized country, recognizes the potential utility of the knowledge and exploits it. When the latter does so, it gains access to and control over the benefits



offence to developing countries or indigenous and local populations regarding the utilisation of genetic resources and traditional knowledge for (potentially patented) inventions (cf. Federle 2005: 25).

As the variety of understandings of “biopiracy” indicates, the narrow perspective of the ABS framework may not be sufficient to capture all aspects of the justice problems arising when genetic resources and traditional knowledge are made use of. This chapter therefore reconstructs the debate from the perspective of the concept of justice. The lead question is: *Which problems of justice arise regarding the utilisation of genetic resources and traditional knowledge<sup>5</sup>, especially if associated with patenting?* My hypothesis is that the perspective of justice-in-exchange (*sensu* Aristotle), as underlying the ABS requirements of the CBD and the Nagoya Protocol, is too narrow to understand all claims of (in)justice in the “biopiracy” debate.

The aim of this study is thus to contribute to the clarification of the problems of justice concerning biodiversity, genetic resources and traditional knowledge, and to highlight some implications for a step-by-step improvement of justice.

The analysis focuses on arguments which either explicitly use the term “biopiracy” or refer explicitly to claims of (in)justice connected to patenting, genetic resources and traditional knowledge. To limit the scope of the discussion, only claims which concern the relationship between humans are analysed.<sup>6</sup>

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arising from the knowledge to the exclusion of the indigenous group” (Castle & Gold 2008: 67). Vandana Shiva defines “biopiracy” as “the process through which the rights of indigenous cultures to these resources and knowledge are erased and replaced by monopoly rights for those who have exploited indigenous knowledge and biodiversity” (Shiva 1997: 31, as cited in Gehl Sampath 2003: 22). By referring to “monopoly rights”, Shiva touches upon the problem of patenting. Gertrude Klaffenböck and Eva Lachkovics (2001) similarly describe “biopiracy” as referring to a situation in which biological resources are acquired from local communities or indigenous peoples and are patented – or a direct derivative is patented – while the resulting profits do not benefit the communities having originated, utilised and disclosed the resources (and their properties) (Klaffenböck & Lachkovics 2001: 134). Others, e.g. the Friends of the Earth, refer to the standards of the CBD – for them, “biopiracy” occurs when biological or genetic resources and/or knowledge of indigenous or local groups about their utilization are appropriated without adhering the standards of the CBD (FUE 2002: 16, as cited in Löbner 2005: 36 and Wullweber 2004: 88).

<sup>5</sup> “Utilisation of genetic resources” is understood in this study as the utilization of the species specific information contained in the functional units of heredity, including the genetic and biochemical composition of a species (see e.g., Byström, Einarsson and Nycander 1999: 13; Nagoya Protocol: Art. 2d). “Traditional knowledge” is understood as locally adapted practical ecological knowledge (cf. e.g. Federle 2005: 20f.; Dutfield 2004: 91).

<sup>6</sup> Resource-based patenting also raises claims regarding the relationship between humans and their non-human environment. For example, “patents on life” (i.e. patents on plants, animals or microorganisms or on organic compounds or parts thereof, cf. Baumgartner and Mieth 2003: 11) are often rejected for reasons of the inherent value or dignity of these organisms.

In the following, I start by laying some theoretical foundations – first, by discussing the legal, philosophical and economic background of patenting, and second, by presenting the philosophical framework for the analysis centred on the concept of justice. Building on this theoretical and mainly philosophical framework, I examine claims of (in)justice frequently put forward in the “biopiracy” debate, in order to show that the perspective of justice-in-exchange is too narrow and that at least some of the rationally reconstructable claims made in the debate belong to other domains. In a subsequent step, I summarise the discussion and end with presenting some conclusions.

## 2. Theoretical foundations

### 2.1 Legal, philosophical and economic background of patenting

From a legal point of view, an invention needs to fulfil the criteria of novelty, inventive step (or non-obviousness) and utility (or industrial applicability) in order to be patentable (cf. e.g. Federle 2005: 33, 44). These criteria are roughly the same in all major national and international patent laws.<sup>7</sup> Briefly put, inventions should be patentable, while discoveries should not.<sup>8</sup> One important difference between the US-American and the European system is the understanding of novelty – while the European system defines novelty as “absolute novelty” (cf. Löbner 2005: 50), in the US-American system only certain instances are detrimental to the claim of novelty, such as prior publication or patenting in the US or another country, or prior public use or recognition *inside the United States* (cf. Federle 2005: 48) (“relative novelty”).

From a philosophical and economic perspective, Fritz Machlup (1958) identified four lines of reasoning or theses for the general justification of patents (i.e. why there should be any patents at all):

- (1) The “natural-law” thesis, stating that there is a natural (human) property right of the inventor to his or her invention,
- (2) the “reward-by-monopoly” thesis, stating that the inventor deserves some kind of reward for the favour done by him or her to society by the invention – and this reward can take the form of the monopoly granted by the patent (or some other form),

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<sup>7</sup> The international system of patent law is constituted by national patent laws, the European Patent Convention, several international treaties on intellectual property rights under the World Intellectual Property Organization, as well as diverse regional treaties and directives of the EU (Dutfield 2000: 8). In the context of biodiversity and the CBD, the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) is the most important international treaty on intellectual property rights (Dutfield 2000: 8).

<sup>8</sup> The European patent system makes this distinction explicitly, while the American patent system reaches a similar effect with the “laws of nature doctrine” (cf. Federle 2005: 60). For further details and discussion cf. also Spranger in this volume.

- (3) the “monopoly-profit-incentive” thesis, stating that the profit extractable from the monopoly position granted is necessary to recoup the costs of research, so that the prospect of obtaining a patent is necessary as an incentive for the inventor to even start with his research, and
- (4) the “exchange-for-secrets” thesis, stating that the patent is necessary as an incentive for the inventor to disclose his invention to the public (as he or she has to describe it in detail in the patent application documents) when he would otherwise try to keep its underlying principles secret for as long as possible.

Theses one and two are essentially “justice arguments”, as they are about individual rights and merit. Theses three and four can be labelled “incentive arguments”, as they are about furthering the common good by giving individual inventors incentives to invest in research or to disclose their knowledge to the public, thus stimulating further research (even if the invention itself cannot be used by others before the end of the patent term).

Natural law arguments (best known from John Locke’s theory of property), which typically justify property by referring to first occupancy or extended personality, create serious problems when applied in order to justify *intellectual* property in inventions or in traditional knowledge. Apart from the fact that the soundness of these natural law approaches to the justification of property in general can be questioned (cf. Becker 1980), their applicability to abstract objects (like knowledge) should especially be doubted (Drahos 1996: 52). Therefore, the “natural-law” thesis is treated as rejected in this article.

In contrast to the natural law thesis, none of the three remaining theses can be totally rejected and all three have some validity. I therefore argue that justifications of patents must take the form of a “mixed justification” relying mainly on arguments of societal interest (i.e., incentives for disclosure of knowledge and incentives for innovation), but also of individual merit. The patent system should thus be judged according to how it lives up to these justifications, i.e. how it provides for individual rewards and for incentives to contribute to societal welfare.<sup>9</sup>

## **2.2 Philosophical framework: justice**

The philosophical analysis of this chapter centres on the concept of *justice*. Justice is a central and contested concept in philosophy (cf. Mazouz 2006: 371; Dobson 1998: 5; Höffe 2004: 9; more generally for different conceptions of justice cf. Aristotle 1998; Dworkin 2000; Nozick 1974; Nussbaum 2000; Pogge 2008; Rawls 1971; Risse 2012; Sen 2009; among others). However, a kind of “minimum definition” could be that

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<sup>9</sup> As any structure or order, it should also be judged according to its broader structural justice effects. For example, if existing inequalities are reinforced by the patent system, it fails to pass the comparative “minimum test” (Byström, Einarsson and Nycander 1999) of not worsening the situation of the worst-off.

justice refers to the mutual (intersubjective) claims and obligations that members of the community of justice could agree on from the standpoint of impartiality and equal consideration (cf. Gosepath 2007: 82). In the following I present a way to systematise claims and conceptions of justice employing a “conceptual structure of justice”, and different “domains of justice”. I furthermore propose to use a comparative approach to assessments of justice.

### 2.2.1 Conceptual structure of justice

In order to describe claims and/or conceptions of justice in a comprehensive way, we have to specify a number of elements which are part of what I call the “conceptual structure of justice”.<sup>10</sup> These include the following (cf. also Box 1):

The **judicandum**: that which is to be judged just or unjust (actors, actions, institutions or states of affairs) (Pogge 2006: 863). The assessment can be taken from a **process and / or outcome** perspective.

The **metric** for the judgment: This includes the **informational base** (Sen 1990: 111) on which the judgment is based and the **principle(s)** to be applied to this base.<sup>11</sup> *Informational bases*<sup>12</sup> are mostly discussed for the domain of distributive justice; candidates given in the literature are, for example, capabilities (Sen 1990; Nussbaum 2000), primary goods (Rawls 1971), or utility.<sup>13</sup> H. Peyton Young identifies three broad *principles*<sup>14</sup> to be applied to this informational base: equality (or parity), proportionality, and priority (cf. Young 1994: 8), which might need to be further specified (e.g. proportionality according to merit, need, ability to pay; priority according to being the worst-off or according to being able to make the most out of some good; etc.). A further principle is that of sufficiency, meaning that everyone should have enough of some

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<sup>10</sup> This “conceptual structure” has been developed in the Sustainability Economics Group at Leuphana University of Lüneburg, inter alia for a course on “Sustainability Governance”. A detailed discussion of an earlier version can be found in my diploma thesis, *Gerechtigkeit in der Biodiversitäts-Konvention* (2010), Leuphana University of Lüneburg, which is available from the author. Cf. also Stefan Baumgärtner et al. (2012).

<sup>11</sup> This corresponds to questions 3 and 4 in the conceptual analysis of the notion of justice by Simon Caney (2005: 103).

<sup>12</sup> Also called “currency” of justice or advantage/benefit by some authors (Kersting 2000: 35; Page 2007: 1). Mathias Risse (2012: 4) speaks of “*distribuendum, metric, or currency of justice*”.

<sup>13</sup> For other domains of justice, and for other judicanda and perspectives, other informational bases will be important. For instance, in the domain of justice-in-exchange the information might refer to the existence of fair bargaining positions characterized by sufficient information, rational self-control and the absence of force and fraud (procedural perspective) or to the value of the exchanged goods, which should be equivalent (outcome perspective) (cf. Koller 2007: 9). Equivalence can be seen as a special case of the principle of proportionality (where the ratio is 1:1).

<sup>14</sup> Also called “pattern of justice” (Page 2007: 1) or “principle of distribution” (Dobson 1998: 63).

good without necessarily involving a comparison to what others have (Frankfurt 1987: 22; Krebs 2003: 237).<sup>15</sup>

The **community of justice**:<sup>16</sup> This includes **claim holders** (holding particular claims) and **claim addressees** (responsible for the fulfilment of the claims).<sup>17</sup>

The **claim(s)**: The notion of a claim is central to the concept of justice (Ott and Döring 2008: 47). Therefore, the content of the claims held by the claim holders should be specified.

On a more practical level, it is also important to define the **instruments of justice** (that which is to be used to satisfy the legitimate claims of justice).<sup>18</sup>

Finally, the **ethical foundation**<sup>19</sup> of a conception (or claim) of justice influences what is specified as the *judicandum*, which metric is seen as appropriate, which claims are seen as legitimate, and who belongs to the community of justice. I am not subscribing to or advocating any particular ethical foundation here. Rather, I will assess the possibility to rationally reconstruct the claims brought forward in the “biopiracy” debate resorting to different lines of ethical reasoning.

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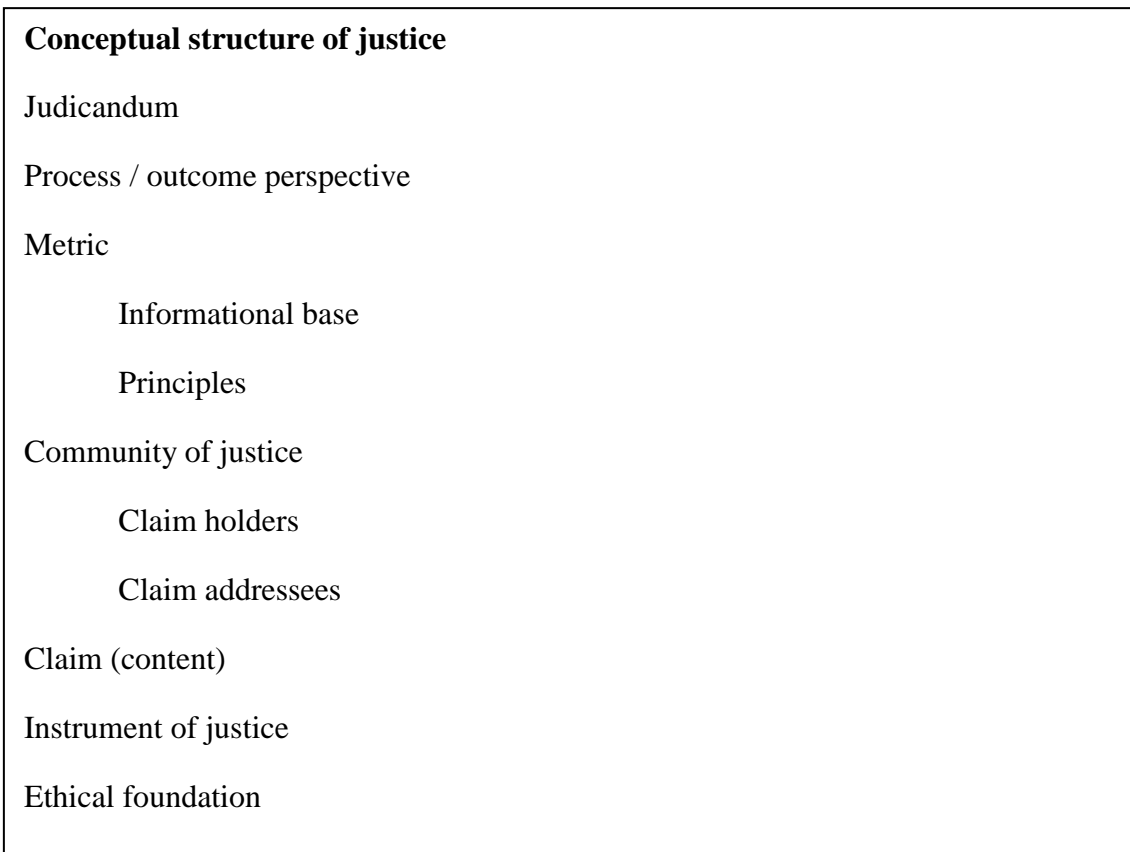
<sup>15</sup> As a special case in situations of scarcity, the principle of sufficiency can lead to a priority ranking of whose claims need to be satisfied first (Krebs 2003: 241).

<sup>16</sup> Also called “scope of justice” (Caney 2005:103; Page 2007: 1) or “relevant population” (Risse 2012: 4). Cf. also Andrew Dobson (1998: 64ff.), who uses the term “community of justice”, but, referring only to *distributive* justice, speaks of “recipients” and “dispensers” instead of claim holders and claim addressees.

<sup>17</sup> There can be claim addressees on different levels of consideration: First-level claim addressees are those persons directly addressed. Second-order claim addressees are those who are responsible for the enforcement, enabling, etc. of certain claims.

<sup>18</sup> Cf. e.g. Anand and Sen (2000). Dobson asks “What is distributed?” (Dobson 1998: 73ff). However, instruments of justice could take many forms. They could refer to a (re)distribution of particular goods such as income or primary goods, but also to institutional reform or other measures which lead to a better “score” on the justice metric.

<sup>19</sup> Also called “grounds of justice” (Risse 2012). Dobson (1998: Chapter 3) distinguishes *universal* and *particular norms* underpinning theories of justice.



**Box 1: The conceptual structure of justice**

The conceptual structure can be used in two different ways: It can be employed to describe a *full conception of justice* (in which case all of the above elements should be specified, with “claim addressee” and “claim holder” referring to general groups of potential claim addressees / claim holders), and it can be employed to describe *single claims about (in)justice* (in which case primarily the elements of claim content, claim holder and claim addressee should be specified).<sup>20</sup> I will use it in the second way in this study.

### 2.2.2 Domains of justice

Claims of justice can be classified into different fields of application or “domains” of justice (Pogge 2006), based on Aristotle’s fruitful and still very influential distinction between general justice and particular justice. While *general justice* is about the lawful, that which creates and maintains the good for the community, *particular justice* has different forms, referring to different fields of application for more specific demands of justice. It can be divided into distributive justice, justice-in-exchange and corrective

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<sup>20</sup> The two levels will often interact – the conception of justice may inform about possible justifications of single claims; the analysis of single claims may test if the conception of justice really yields results which are consistent with our moral convictions, etc.

justice (Aristotle 1998).<sup>21</sup> The domains of justice can be associated with different kinds of social interaction (Koller 2007):

*Distributive justice* is the domain of justice concerning community relationships, i.e. relationships between persons who have common claims for certain goods or share the obligation to carry certain burdens (Koller 2007: 8). While the claim holder can be a single person, the claim addressee of such a kind of claim is the community as a whole, or some representative of the community, e.g. a central authority like the state (cf. Petersen 2009a: 25). In the domain of distributive justice, different principles of distribution can apply. For Aristotle, it was the *axa* (dignity) of the person determining her share (Petersen 2009a: 25f.). In modern conceptions of distributive justice, it requires *equal* consideration and treatment, unless there are reasons for unequal consideration which are acceptable for all (cf. Koller 2007: 9). These acceptable reasons usually refer to contributions or merits, (basic) needs, or legitimate expectations (cf. Engisch 1971: 152f.; Koller 2007: 9; Ladwig 2004: 130f.; Petersen 2009a: 26).

*Justice-in-exchange* is applicable to exchange relationships, i.e. whenever two or more persons interact with each other voluntarily to mutually confer certain goods and services on each other (Koller 2007). The claim addressees and claim holders of the resulting claims are the respective partners in such an exchange. The principle of justice-in-exchange (in an *outcome* perspective) is equivalence (cf. Petersen 2009a: 26). In the – nowadays more prominent – *process* perspective on justice-in-exchange an exchange is just if the partners have fair negotiation positions (cf. Koller 2007: 9; Mazouz 2006: 372; Wagner 1990: 277).

*Corrective justice* is required whenever a member of the community breaks the rules of the community, injures the rights of others or does not fulfil his or her obligations towards others. Corrective justice can be further subdivided into restitutory justice dealing with remedies for harm done, and retributive justice dealing with punishments (cf. Koller 2007: 10; for a more detailed account cf. Lumer 1999: 466). The question of who is claim addressee and who is claim holder is more complicated in this domain. First, (corrective) claims are addressed against the rule-breaking person. But claims can also be addressed to the community or its representatives (e.g. the judiciary) to persecute the wrongdoer and enforce the corrective claims.<sup>22</sup> The claim holder of corrective claims is generally the harmed party (in the case of restitution), but it can also be the general public who wants to see the wrongdoer punished for breaking the rules (retributive justice).

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<sup>21</sup> Justice-in-exchange and corrective justice are both forms of commutative justice, which is characterized by an interaction between single members of the community (as opposed to distributive justice which is characterized by community relationships). Justice-in-exchange refers to voluntary exchanges, while corrective justice refers to involuntary “exchanges” (Kersting 2000: 42; Mazouz 2006: 372). The domains of justice can be further subdivided into more sophisticated domains, but I resign from doing that here. Furthermore, procedural justice is often mentioned as a category of justice in its own right. I don’t distinguish a separate domain of procedural justice as procedural aspects play a role in all domains.

<sup>22</sup> The judiciary is thus a second-order claim addressee.

Regarding the background conditions of the mentioned domains of justice, Malte Faber and Thomas Petersen (2008) coin the term *Ordnungsgerechtigkeit* (*structural justice*), describing the moral quality of the setup of a community regarding its judicial and political institutions and moral principles (Faber and Petersen 2008: 411). The justice of the order of a community can be measured by the degree to which it enables its members to lead a good life (Faber and Petersen 2008: 412). Thus, the members of the community (as claim holders) can be said to hold a claim against the structure or setup of the community (or those responsible for that structure) that the preconditions of a good life be provided. Faber's and Petersen's notion of structural justice builds on Aristotle's category of general justice (cf. Petersen 2009a: 25).<sup>23</sup>

### 2.2.3 Comparative approach

I propose to use a comparative approach to assessments of justice, aiming at enhancing justice case by case rather than achieving perfect justice. This has been advocated by several authors. Amartya Sen (2009) claims in *The Idea of Justice* that an analysis of justice related to practical politics "cannot be but about comparisons" (Sen 2009: 400), e.g. by comparing the justice of different states of affairs before and after a proposed reform. Thomas Pogge (1991) also argues that for a gradual improvement of the justice of the global order, it is necessary to compare between the "feasible and morally accessible avenues of institutional change" (Pogge 1991: 260).<sup>24</sup> Referring to the CBD, Doris Schroeder and Thomas Pogge write: "[T]he CBD framework should be assessed by reference to the common good of humankind. In making this assessment, one must consider the effects of the CBD relative to those of its politically available alternatives" (Schroeder and Pogge 2009: 273; cf. also Schroeder 2009). One example of a justice assessment on the basis of a comparative approach would be to use John Rawls' (1971) difference principle in a modified form – by evaluating *judicanda* in terms of their impact on the worst-off (cf. Byström, Einarsson and Nycander 1999: 23).

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<sup>23</sup> The domain of structural justice could be interpreted as a special case of distributive justice, where the *judicandum* and claim addressee is an institution or structure (or those responsible for these institutions and structures), and the principle is one of sufficiency (having enough to lead a good life). However, I argue that it is worthwhile to keep this as a distinct category of justice, as it includes an emphasis on the importance of a certain quality and stability of the addressed order, institution or structure. Petersen (2009b: 92) connects this domain of justice to an absolute standard of justice (such as the one by Konrad Ott and Ralf Döring (2008), who in turn build on the capability approach by Sen and Nussbaum) and argues that such an absolute standard requires a certain quality of the order guaranteeing this standard. Similarly, Krebs (2003: 243) implies that the guaranty principles of the sufficientarian approach belong to the category of general justice and are *prior* to the principles of particular justice (including distributive justice).

<sup>24</sup> Sen and Pogge follow different lines of reasoning, though. Sen argues that there can be a plurality of principles of justice (Sen 2009: x), while Pogge speaks of *one* global principle of justice (Pogge 1991: 260).



### 3. Analysis of selected claims from the “biopiracy” debate

Equipped with this theoretical and especially the philosophical framework, I will now examine some of the statements about (in)justice frequently put forward in the “biopiracy” debate, in order to answer the question posed in the introduction: *Which problems of justice arise regarding the utilisation of genetic resources and traditional knowledge, especially if associated with patenting?* Provided that my hypothesis is that the perspective of justice-in-exchange, as underlying the ABS requirements of the CBD and the Nagoya Protocol, is too narrow to understand all claims of (in)justice in the “biopiracy” debate, each claim will first be described using the domains of justice and the conceptual structure, and will then be discussed. I will start by examining one of the most common claims, to respect the requirements of the CBD, then clarify the allegations connected to the term “bad patents”, furthermore look at claims of moral desert, reciprocity, human rights, and – somewhat outside the moral sphere – incentives, as well as conservation financing, and finally touch upon further issues of structural justice.

#### 3.1 “Respect the requirements of the CBD” – Claims for PIC, MAT and benefit-sharing

One very common concern in the “biopiracy” debate is that bioprospecting companies or other bioprospecting actors (as claim addressees) should, in accordance with the requirements of the CBD, obtain “prior informed consent” (PIC) from and reach “mutually agreed terms” (MAT) (claim contents) with countries of origin or local and indigenous communities (as claim holders). Another demand (claim content) is that they should share benefits from bioprospecting with countries and communities of origin.<sup>25</sup> In short, bioprospectors are asked to comply with the requirements of the CBD (cf. for example FUE 2002: 16 as cited in Löbner 2005: 36; Nilles 2003: 216; Baumgartner and Mieth 2003: 319). These claims fall in the domain of justice-in-exchange with the corresponding principles of equivalence and fairness. PIC and MAT refer to the procedural dimension, as these requirements aim to establish fair negotiation positions. Benefit-sharing refers to the outcome dimension.

These claims show that (of course) the emphasis of the ABS regulations on exchange is not totally misplaced. In their justification, these claims refer to the precondition of all claims of justice-in-exchange: an act of exchange. Thus, as soon as an access to genetic resources or traditional knowledge takes place, the reference to claims of justice-in-exchange in general is justified (but not necessarily to particular specifications of these claims, e.g. regarding the amount of benefit-sharing<sup>26</sup>) – provided that rights (of

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<sup>25</sup> In this part of the “biopiracy” debate, the legitimacy of patents or the compliance with patent criteria are not questioned – Christina Federle therefore designates the connected patents as the “good patents” of biopiracy (Federle 2005: 107).

<sup>26</sup> The question of a “just” amount of benefit-sharing is indeed not trivial. One approach could be to share benefits proportional to contribution, but the quantification of these contributions can turn out

property, or merit) of countries of origin or of indigenous or local communities to the resources in question are acknowledged. This means that such rights need to be clearly delimited (although not necessarily in legal terms) before it is possible to make conclusive statements about justice-in-exchange.<sup>27</sup> However, PIC and MAT may not be sufficient to reach fair negotiation positions – a substantial capacity building might be required.

### 3.2 Bad patents

The term “bad patents” (Federle, 2005; cf. also Hamilton 2006: 170) is used to describe patents on inventions based on traditional knowledge or genetic resources which do not satisfy the criteria of inventive step, novelty and/or utility.

In terms of the conceptual structure, different kinds of justice claims can be identified here: To start with, an (illegitimate) claim held by a biotechnology firm (as – illegitimate – claim holder) against the general public (as claim addressee) to accept the property claim on the invention (i.e. the patent claims as claim content). Then, we can identify corrective claims which can be further subdivided: First, restitutory claims directed towards the bioprospecting firm (the claim addressee) to give up the patent and to compensate those harmed (claim contents), the claim holder being the general public (harmed by the illegitimate monopoly and the reduction of the public domain), but also groups more directly harmed<sup>28</sup> by the patent. Second, retributive claims like punishments (claim content) could be brought up against the biotech firm (claim addressee) by the judiciary (claim holder). As a second-order claim addressee of the corrective claims, the judiciary can be demanded to “take action” on the issue. In sum, “bad patents” touch upon both the domain of distributive justice (when constituting illegitimate claims of merit; and when having adverse distributive effects) and the domain of corrective justice.

The fact that “bad patents” are granted although they do not fulfil the criteria for a patentable invention (novelty, inventive step, utility) is attributed on the one hand to the “unscrupulous users” of the patent system, on the other hand to a failure of the patent examination process (Dutfield 2004: 50f.). The corrective claims against these illegitimate patents are justified by the harm done by them, but also by their illegitimacy itself. The claims against “bad patents” also hint at the broader “justice effects” of the patent system: if existing inequalities are reinforced by the patent system, it fails to pass

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to be very difficult (cf. Mulligan 1999: 38; Brush 1993: 661; Byström, Einarsson and Nycander 1999: 22; Dutfield 2000: 54).

<sup>27</sup> In this sense, structural or distributive justice have to precede justice-in-exchange.

<sup>28</sup> Not all bad patents are directly harmful, but “some are potentially harmful and others are actually harmful” (Dutfield 2004: 50), e.g. through exclusion from a previous utilization of the erroneously patented invention (cf. Dutfield 2004: 50ff. 119; Federle 2005: 24; Byström, Einarsson and Nycander 1999: 48; Frein and Meyer 2008: 116). A kind of harm to the general public is the so-called “tragedy of the anticommons” (Heller and Eisenberg 1998).

the comparative “minimum test” (Byström, Einarsson and Nycander 1999) of not worsening the situation of the worst-off, creating a problem of structural justice.

### **3.3 Claims of moral desert**

Claims of moral desert are raised in regard to the conservation and development of genetic resources and with respect to the production of useful knowledge by local and indigenous communities (as claim holders, against the “general public” as claim addressee) (cf. for example Wullweber 2004: 88; Klaffenböck and Lachkovics 2001: 134). These claims belong to the domain of distributive justice (because they allude to community relations, target the “general public” as claim addressee, and refer to the contribution to a community good for their justification).

The validity of these claims is difficult to establish. First, it of course depends on whether the deserving action was actually undertaken by the supposed claim holder. So, did local communities actually develop genetic resources, produce useful knowledge, etc.? How to distinguish between desert and contingent factors (factors beyond human control, e.g. “natural nature”)?<sup>29</sup> At least for some cases, a specific, “deserving” human action can be confirmed (cf. e.g. Graham Dutfield (2004: 99) referring to genetic resources and traditional resource management, Castle and Gold (2008: 73) regarding the utility of traditional knowledge). However, claims of desert are normally attributed to individual performance - how to deal with claims of collective or inherited desert? Which claims can today’s generations infer from the achievements of their ancestors? As a “causal” approach doesn’t work (the presently living cannot claim credit for achievements of the past), a different approach could be to use an analogy: just as the inhabitants of industrial countries benefit from their countries’ industrial developments in the past, members of indigenous and local communities should benefit from the achievements of their predecessors. Finally, the claim content is not quite clear – it has to be discussed what kind of reward is expected for the deserving action.

### **3.4 Arguments from reciprocity**

The utilization of traditional knowledge or genetic resources in bioprospecting and biotechnology may serve as a proof of existing social cooperation (*sensu* Rawls) between the holders of such knowledge (or owners of such resources) and the users of those resources. The existence of such a community of social cooperation then establishes legitimate claims of indigenous and local communities (as claim holders) for some of the fruits of the cooperation (claim content) against the community (claim addressee).<sup>30</sup> These claims belong to the domain of distributive justice.<sup>31</sup>

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<sup>29</sup> For a general discussion of the problem to distinguish between desert and contingent factors cf. Wolfgang Kersting (2000: 249), Wilfried Hinsch (2005: 71).

<sup>30</sup> Cf. Hinsch (2005: 59f.) for a general description of Rawls’ argument and development of the “community of cooperation” argument for the international level (without reference to bioprospecting or “biopiracy”).

David Castle and Richard E. Gold argue that the utility of traditional knowledge is made clear by the fact the bioprospectors are interested in it (Castle and Gold 2008: 73), and this shows, one could add, that a community of social cooperation indeed exists. Thus, there is some plausibility to these claims, even if they are not very specific in terms of the claim content. How much of the fruits of the cooperation can be claimed by whom? Wilfried Hinsch (2005: 59f.) argues for “prima facie equal claims to share the fruits of social cooperation”. At least, the comparative minimum test should be applied.

### **3.5 Arguments from human rights**

From a human rights point of view, benefit-sharing can be seen as a mechanism that should contribute to the fulfilment of these human rights (Castle and Gold 2008; de Jonge and Korthals 2006). The proponents of this view claim that benefit-sharing should be directed first towards fulfilment of basic needs (de Jonge and Korthals 2006: 151f.; Schroeder and Pogge 2009: 277f.). Such claims can be taken to belong the domain of distributive justice (on a sufficientarian account), but also to structural justice (referring to an absolute standard that needs to be guaranteed by those responsible for the institutional order). This line of argument breaks the link between the possession of traditional knowledge (or genetic resources) and being eligible for benefit-sharing which becomes “a mechanism to ensure the equitable distribution of both scientific research capacity and gains arising from scientific research, at least in the health care and agricultural fields” (Castle and Gold 2008: 75). Consequently, anyone in need could be seen as a claim holder, irrespective of their possession of traditional knowledge or genetic resources (but this could of course still include local and indigenous communities). The first responsibility to ensure these claims lies with the states (Castle and Gold 2008: 74f.). Still, it is also possible to connect the obligation to share benefits (i.e. the question of who is claim addressee) to the utilization of genetic resources and traditional knowledge, i.e. to construct an obligation of bioprospecting actors to share benefits.

As long as human rights are taken as justified,<sup>32</sup> these claims are quite plausible; however, their justification (ethical foundation) has only a very loose connection to the utilization of genetic resources and traditional knowledge.<sup>33</sup>

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<sup>31</sup> This is because this argument refers to cooperation within the community at large, not cooperation between two specific members (which would hint at the domain of justice-in-exchange).

<sup>32</sup> Justifications for human rights themselves can be, e.g., constructed from a legal point of view, i.e. in terms of obligations from international human rights agreements (Universal Declaration of Human Rights, International Covenant on Economic, Social and Cultural Rights), or from an ethical point of view, e.g. in terms of the generalisability and feasibility of consensus in the sense of discourse ethics (following Ott and Döring (2008: 83f.), who even justify the more demanding humanitarian base this way). Cf. also Risse (2012), who discusses different justifications for human rights and argues for a pluralistic account.

<sup>33</sup> Following this argument, what matters are a person’s human rights, not their possession or utilization of genetic resources or traditional knowledge. So, the claim holders are not primarily

### **3.6 Non-moral “entitlements to legitimate expectations”: incentives**

Another possible line of argument does not refer to moral claims, but to incentives (or “entitlements to legitimate expectations” *sensu* Rawls, as claim content), for example for local communities (as claim holders) to disclose (traditional) knowledge, to produce such knowledge, and to protect biodiversity (cf. for example de Jonge and Korthals 2006: 147; Cunningham 1991).<sup>34</sup>

Whether (monetary) incentives can reasonably be expected to achieve their desired effect depends on the kind of desired activity. They might work for the conservation of biodiversity (insofar as it is a matter of choice about alternative land uses), but might not work for, say, the production of traditional knowledge grounded in social practices which do not react to, and might even be disturbed by, those incentives (for the last point cf. Mulligan 1999: 47; Wullweber 2004: 130f.; but cf. also Byström, Einarsson and Nycander 1999: 51, who indicate that bioprospecting agreements of the International Cooperative Biodiversity Group (ICGB) in Nigeria and Suriname were “said to have reinforced cultural values related to traditional use of medicinal plants”). The success of incentives for conservation also presupposes that local communities have full control over their territories and that there are no harmful outsiders like oil companies, gold mining, etc. destroying nature in the area.

### **3.7 Benefit-sharing as a means of funding biodiversity conservation**

Benefit-sharing can also be seen as a means to contribute to an internationally shared funding of biodiversity conservation activities, i.e. as a requirement of distributive justice. The claim content in this case is the sharing of the burdens of biodiversity conservation, the claim holders are biodiversity-rich countries and communities, and the claim addressee can be various actors depending on the way this claim is justified.

Such a common funding might be in order for different reasons, e.g. because the costs of a public good should be distributed fairly (de Jonge and Korthals, 2006), because funding should come from those who benefit from biological resource use (Cunningham, 1991) or because of the historical responsibility of industrialised countries (Frein and Meyer, 2008).

### **3.8 Further claims of structural justice**

Finally, as already hinted at above, the term “biopiracy” also encompasses statements that criticize unequal access to the patent system (cf. for example Byström, Einarsson

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determined with reference to genetic resources or traditional knowledge. But of course, the satisfaction of their claims stemming from human rights can be more or less tightly connected to these resources: for instance, thinking of agricultural biodiversity, these resources might be one *instrument* to satisfy the claims.

<sup>34</sup> The claim addressee would thus be the community / a state authority which is responsible to assure the “entitlements to legitimate expectations”.

and Nycander 1999: 49; Hamilton 2006: 169) or its corrective mechanisms (Frein and Meyer 2008: 141; Hamilton 2006: 169 referring to the costs of patent challenges), as well as the negation of custom-based regulations (Dutfield 2000: 63f.). These concerns touch upon the moral quality of the international order regulating intellectual property, genetic resources and traditional knowledge.<sup>35</sup> The *judicandum* is thus to be found in the structures, rules and institutions underlying the global patent system and other regulations for intellectual property, genetic resources and traditional knowledge, and the domain is that of structural justice. The main criterion and claim content in this domain is the degree to which the members of an order (as claim holders) are enabled to lead a good life (Faber and Petersen 2008: 412). The claim addressees are those responsible for that order and/or able to influence it.

Does the international order regulating intellectual property, genetic resources and traditional knowledge satisfy the formal criterion of equality? Does it enable its members, i.e. the persons affected by it, to lead a good life? At least it should not worsen their situation. There is certainly room for reform here. As patents are no natural rights and are thus modifiable, they should be designed so as to achieve their “mixed” goals (giving incentives for innovation and disclosure of knowledge and rewarding inventors), while also being measured by the standards of structural justice.

#### 4. Discussion

The analysis of the “biopiracy” debate shows that the perspective of justice-in-exchange cannot cover all the claims of (in)justice regarding the utilisation of genetic resources and traditional knowledge. At least some of the other claims made in the debate can be rationally reconstructed, and they belong to the domains of distributive justice, corrective justice and structural justice. The analysis of the selected claims also shows the fruitfulness of classifying claims of justice according to the domains and the conceptual structure of justice.

What does this analysis imply for step-by-step justice improvements (as called for under a comparative approach to justice) and for further analysis? Two relatively practical implications can be named. First, the analysis of the claims of justice-in-exchange implies that indeed in specific cases of bioprospecting or “biopiracy” *standards of justice-in-exchange* should be enabled and enforced (i.e., PIC, MAT and benefit-sharing as minimum requirements, complemented by a substantial capacity building) – the Nagoya Protocol could be an important step in this direction. Second, the analysis regarding bad patents and some of the structural injustice claims imply that the *international order regulating intellectual property, genetic resources and traditional knowledge should be reformed*, e.g. by posing a strict emphasis on the distinction between invention and discovery and by applying a standard of absolute novelty.

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<sup>35</sup> The latter concern – negation of custom-based regulations – can also be taken to be a matter of missing *recognition*, a category emphasised, e.g., by David Schlosberg (2004).

Additionally, other forms of rewards and incentives other than intellectual property should be considered.

The analysis of the arguments regarding moral desert, reciprocity, incentives, and conservation funding furthermore shows that *distributive issues* arise that go beyond genetic resources and traditional knowledge, but concern the sharing of the benefits and burdens (according to different principles of justice) of use and conservation of *biodiversity more generally*.

The analysis of the *human rights claims* implies that, as these rights are fundamental (referring to the background conditions of other justice claims), it is legitimate to ask for their recognition also in the benefit-sharing context. However, benefit-sharing also needs to take account of concerns of, e.g., environmental effectiveness, efficiency and merit. This points to the conclusion that human rights claims (as well as other claims of structural justice) might not be fully satisfiable in the CBD / ABS framework; but have to be addressed taking into account a broader number of institutions and their interplay.

## **5. Concluding remarks**

As a general conclusion, the question how institutions and structures shape (perceptions of) justice deserves more attention. For example, it became clear that the question how to define (property) rights to genetic resources, but also to biodiversity and nature more generally is far from settled. This also touches upon the questions of land rights so important for indigenous communities, but merely mentioned in the “biopiracy” debate. This analysis should also include local conceptions of justice and of the human relationship to biodiversity. Another open question for implementation is how to coordinate international and national regulations – or, in other words, which claims of justice should be directed towards the national level, and which to the international level?

Finally, policymakers, activists and scientists involved in the “biopiracy” debate alike should broaden their perspectives on the issues of justice that come up when genetic resources, traditional knowledge and more generally biodiversity are used. The concern for justice in the CBD should be more broadly conceived, concerning all levels of biodiversity including local and global ecosystem services. A further analysis should also include aspects such as justice towards nature (which was deliberately beyond the scope of this chapter) or justice towards future generations. These aspects of justice are especially important when thinking about biodiversity policy in the context of *sustainability*.

The development and implementation of (more) just institutions of biodiversity conservation and use, embedded into an account of other institutions and structures which influence justice, is one of the big tasks of sustainability policy and politics on all levels, by governments, social movements, individuals and organizations.

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**Paper 5:**  
**Notions of justice held by stakeholders of the fishery in  
Newfoundland, Canada**

# Notions of justice held by stakeholders of the fishery in Newfoundland, Canada

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## Abstract

Justice is an important and contested issue in the governance of fish stocks threatened by overexploitation. This study identifies the notions of justice held by stakeholders of the fishery in Newfoundland, Canada, using qualitative interviews. We have a dual research interest: At the level of the particular case, we want to contribute to a better understanding of the situation in terms of justice. At the general theoretical level, we are interested whether and how people's empirical notions of justice may be captured in terms of a formal conceptual structure of justice established elsewhere (Stumpf et al. 2014). We analyse the results using inductive and deductive coding. Most interviewees find that participation of all relevant stakeholders in the decision-making process is necessary and that the outcome should particularly enable the inshore fish harvesters to make a living from the fishery. Moreover, rules play an important role in the justice notions of the interview partners. We relate the results to exemplary theories of justice. At the theoretical level, the study shows the fruitfulness of using the conceptual structure of justice in the empirical analysis of and normative theorizing about justice.

## Keywords

Justice, conceptual structure of justice, fishery, Newfoundland, qualitative semi-structured interviews, deductive and inductive coding, empirical justice research

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## 1. Introduction

Justice is an important and contested issue in the governance of fish stocks threatened by overexploitation (Coward et al. 2000, Gray 2005). Through fisheries, humans get access to provisioning services (such as food) from the oceans. Fisheries are often also seen as a way of life, providing cultural services (e.g., Finlayson 1994, Chan et al. 2012).<sup>1</sup> Questions of justice become particularly relevant in contexts of scarcity. The oceans, long regarded as virtually limitless (Costanza 1999), provide a drastic example of how ecosystem goods and services may become scarce, through a combination of ecological factors with human overuse leading to fundamental changes in the ecosystem.

One of the most famous changes in marine ecosystems is the collapse of the Atlantic cod stocks near Newfoundland, Canada in 1992 (see, e.g. MEA 2005). The hitherto seemingly unlimited resource fish became scarce, which led to the closure of the “northern” cod (*Gadus morhua*) fishery off Canada’s east coast, with drastic consequences along the entire fish chain, from small-scale fishers and coastal communities to the processing and retail sectors (Khan 2011). This raises fundamental questions about justice and fairness in the production and distribution of the resource (Brunk & Dunham 2000: 10).<sup>2</sup> Perceptions of justice are also crucial for the acceptance of decisions (Hernes et al. 2005).

Because the concept of justice is contested (Mazouz 2006: 371), however, the notions of what is “just” usually differ between people. To understand the justice problems in the Newfoundland fishery (and to arrive at acceptable public policies regarding the fishery) therefore requires a more thorough analysis. In this study, we contribute to this analysis by pursuing research interests at two distinct levels of inquiry:

- (1) Our first interest, at the level of the particular case, is to identify the notions of justice of those faced with the collapse of the Atlantic cod stocks near Newfoundland. We ask, *which notions of justice do stakeholders of the Newfoundland fishery hold?* Our aim is to contribute to a better understanding of the situation in terms of justice.
- (2) Second, at the general theoretical level, we are interested in how people’s empirical notions of justice may be captured and structured. In particular, we want to test whether and how a formal *conceptual structure of justice* developed elsewhere (Stumpf et al. 2014), listing elements that need to be specified in order to describe notions of justice in a comprehensive way, can serve to structure empirical notions of justice.

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<sup>1</sup> By “services”, we refer to the concept of ecosystem services, defined as the benefits people obtain from ecosystems (MEA 2005: V, see also TEEB 2010).

<sup>2</sup> While aware of the subtle differences and connotations of the terms, in this study we use “justice” and “fairness” as roughly synonymous.

Our study is connected to two strands of literature which are partly interrelated. First, it relates contributions from social science on the governance and management of fish stocks, particularly in Newfoundland, but also elsewhere, addressing justice and other concerns (see e.g., Steele et al. 1992, Finlayson 1994, Coward et al 2000, Brunk and Dunham 2000, Hamilton and Butler 2001, Macinko and Bromley 2002, Jentoft 2004, 2006, 2007, Hamilton et al 2004, Gray 2005, Hernes et al. 2005, Murray et al. 2005, Schrank 2005, MacDonald et al. 2006, Juntarashote and Chuenpagdee 2011, Khan 2011).

Second, our paper is related to empirical justice research in general. Scholars use different methods to assess empirical justice questions,<sup>3</sup> such as quantitative surveys (e.g. Bartels 2005, Kals et al. 2004, Schleich et al. 2014), choice experiments (e.g. Dannenberg et al. 2010, Carlsson et al. 2013), and qualitative interviews (for a classic example, see Hochschild 1981). David Miller (1999), in a review of different strands of empirical justice research, shows that people's convictions of justice are context-dependent and sensitive to the type of social relation relevant in the particular setting.

To date, only little attention is paid to issues of justice within social science fisheries research (Hernes et al. 2005). However, "fisheries management would benefit from a more principled debate on social justice" (Hernes et al. 2005: 104). That is, there is a need to explore this field and to discover which issues of justice may play a role. To address this research gap, we use qualitative, semi-structured in-depth interviews, to explore the field in a manner that allows for new and unexpected issues and concerns of justice to come up.

We base our analysis on qualitative interviews with 21 stakeholders of the Newfoundland fishery. The interviews and their analysis were theoretically based on a formal conceptual structure of justice developed elsewhere by the authors (Stumpf et al. 2014). We use a combination of inductive and deductive coding to structure and interpret our results. We identify patterns in the results and put them into perspective by relating them to the literature and to exemplary theories of justice.

The paper is organised as follows. In Section 2, we introduce the conceptual structure of justice and describe some exemplary theories of justice that are relevant for interpreting our results. In Section 3, we describe the context of our study, i.e. the Newfoundland fishery. In Section 4, we present the methods of the study, including the recruitment of interview partners, the design of the interview guide, the coding procedure, and the analysis of the results. In Section 5, we present the results for each conceptual element of justice and inquire about patterns in the specifications. In Section 6, we put the results into perspective in relation to the literature and exemplary theories of justice. In

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<sup>3</sup> As Miller (1999: Chapter 4) points out, empirical justice researchers may be interested in (stated) *notions* of justice, or in the observation of justice-related *behaviours*, and may focus on different levels from a *macro* (i.e., society-wide) to a *micro* (i.e., small group) level. In this paper, we are interested in the stated notions of justice of stakeholders on the meso level of the Newfoundland fishery.



Section 7, we discuss the validity and limits of the results and of our methodological approach in general. In Section 8, we draw some conclusions at the level of the particular case, at the general theoretical level, and for the relationship between empirical analysis and normative theorizing about justice.

## 2. Philosophical foundation: Justice

Essentially, justice bears on the owed, demandable claims (or rights) and the corresponding obligations within a community of justice from a standpoint of impartiality and equal consideration (e.g., Gosepath 2007). While this core of the concept is relatively clear and uncontested, different conceptions (i.e. concretizations) of the concept vary along a number of different dimensions.<sup>4</sup> Therefore, to fully describe a specific conception of justice, several elements have to be specified. These elements can be defined in a basic conceptual structure of justice (Stumpf et al. 2014).

### 2.1 The conceptual structure of justice

In this section, we will briefly introduce each conceptual element of justice which needs to be specified to comprehensively describe a specific conception of justice.<sup>5</sup> With the help of this structure we will analyse and compare the different notions of justice held by the stakeholders of the Newfoundland fishery.

**Community of justice:** Who is included into the justice consideration? The community of justice (Dobson 1998) can be distinguished into two roles: The *claim holders* (the ones who hold particular claims) and the *claim addressees* (the ones responsible for the fulfilment of those claims).

**Claims:** What are the legitimate claims that are held by the claim holders? Claims are considered legitimate if they are assigned to community members based on an accepted ground of justice (Risse 2012). Claims are central to the concept of justice (Ott and Döring 2008: 47).

**Judicandum:** Who or what is judged to be just or unjust? There are four main categories of *judicanda* (Pogge 2006: 863): (i) individual or collective actors, (ii) actions or omissions of such actors, (iii) social rules, i.e. laws, institutions, conventions, (iv) states of affairs or events. A *judicandum* can be assessed in terms of outcome, or in terms of process.

**Informational base:** The judgment on the justice of a *judicandum* may be based on different kinds of information or *informational bases* (Sen 1990: 111): evaluative currencies such as utility, capabilities, or income.

**Principles of justice:** Young (1994: 8) distinguishes three broad principles of justice: equality (or parity), proportionality, and priority, which might need to be further

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<sup>4</sup> For the concept-conception distinction, see Gallie (1956), Rawls (1971).

<sup>5</sup> See Stumpf et al. (2014) for a more detailed description and justification of each element.

specified (e.g. proportionality according to desert or need). An additional principle is that of sufficiency, meaning that everyone should have enough of some good (i.e. the informational base chosen) without necessarily involving a comparison to what others have (Frankfurt 1987: 22, Krebs 2003: 237).

**Instruments of justice:** On a more practical level, we can ask, which instruments should be used to satisfy the legitimate claims of the claim holders (Anand and Sen 2000)? This can *inter alia* refer to (re)distribution of certain goods, such as income or primary goods, but also to institutional reform, or other ways of fulfilling legitimate claims.

## 2.2 Exemplary conceptions of justice

In this sub-section, we briefly introduce four exemplary conceptions which are relevant to interpreting our results, covering different currently influential justice theories: We discuss Rawls' (1971) *Theory of Justice*, the capability approach advocated by Sen (1992, 1999) and Nussbaum (2000), the environmental justice approach by Schlosberg (2004), and utilitarianism (based on the works of Mill [1871] 1998 and Bentham [1789] 1970). We exemplify how the conceptual structure of justice may be used to structure these conceptions of justice. We will come back to these exemplary conceptions when putting our results into perspective (Section 6).

In his *Theory of Justice*, Rawls (1971) discusses how the basic structure of society should be shaped to be just. Rawls proposes two principles of justice:

- (1) "Each person is to have an equal right of the most extensive total system of equal basic liberties compatible with a similar system of liberty for all. [...]"
- (2) Social and economic inequalities are to be arranged so that they are both: (a) to the greatest benefit of the least advantaged, consistent with the just savings principle, and (b) attached to offices and positions open to all under conditions of fair equality of opportunity" (Rawls [1971] 1973: 302).

Using the terminology introduced above, the basic structure of society is the *judicandum* of Rawls' theory. Rawls restricts the *claim holders* to the human population of a national state today and (to a certain extent) in the future. The persons within that state have *claims* to certain basic liberties, as well as to an equal distribution of the fruits of social cooperation (or an unequal distribution that satisfies the so-called "difference principle", i.e. which is to the benefit of the least advantaged). The *claim addressees* are those setting up and steering the social structure (e.g., the government). To assess whether the basic structure of society is just, one needs to look at the provision of basic liberties and opportunities to social offices (*informational bases*) according to the *principle* of equality, and at the distribution of primary goods<sup>6</sup> (also as *informational bases*) according to the difference principle (which can be interpreted as a principle of

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<sup>6</sup> Primary goods are defined as "things that every rational man is presumed to want" (Rawls [1971] 1973: 62), i.e. as all-purpose-means that can be used in pursuit of different life plans.

priority of the worst-off). The distribution of primary goods is one *instrument of justice*, the design and reform of social structures another. In the context of this paper, the main distinguishing element we will focus on is *Rawls' priority for the worst off (via the difference principle)* in the distributive part of his theory.

The capability approach advocated by Amartya Sen (1992, 1999) and Martha Nussbaum (2000) draws attention to the question which informational base should be used to judge the justice of social institutions (the *judicanda* of this approach), arguing for “capabilities” as the adequate *informational base*. “Capabilities” are defined as the vector of all “functionings” which a human can achieve using certain goods (Sen 1992: 40). “Functionings” are constitutive elements of human existence, including „such elementary things as being adequately nourished, being in good health, avoiding escapable morbidity and premature mortality, etc., to more complex achievements such as being happy, having self-respect, taking part in the life of the community“ (Sen 1992: 39). Sen emphasizes that what matters is the freedom to choose between different ways of achieving such functionings (Sen 1990).<sup>7</sup> The *community of justice*, in this view, is constituted by all (presently) living humans as *claim holders* who have a *claim* to certain substantial freedoms, measured in terms of their capability sets (as *informational bases*), following a *principle* of equality (Sen) or sufficiency (Nussbaum) (see Page 2007). Having a certain capability set requires access to resources as well as conversion factors (such as personal characteristics, social infrastructures, and environmental factors, see also Robeyns 2005); therefore the provision of both – as far as that is possible – needs to be included among the *instruments of justice*. The *claim addressees* are those able to influence this provision, including the government level (but potentially also other social actors). In the context of this paper, the main distinguishing element of the capability approach is its emphasis on *claims to substantial freedoms* and on *capability sets as the right informational base* for the justice assessment, as this is the concern that its advocates most strongly position against other approaches such as Rawls' theory and utilitarianism.

In the recent debate about environmental justice, Schlosberg (2004) has strongly stated the need to consider issues of *recognition* alongside distributional and procedural aspects of justice. He argues that environmental justice requires the recognition of the diversity of participants and experiences in the affected communities and their different value systems. However, according to Schlosberg, recognition is undertheorised and merely assumed in liberal theories of justice such as the one by Rawls. “Recognition” as a category of justice emphasizes the *claim* of marginalized groups (*as claim holders*) for “a ‘place at the table’ and the right to ‘speak for ourselves’” (Schlosberg 2004: 522). Activists call for “policy-making procedures that encourage active community participation, institutionalise public participation, recognise community knowledge, and utilise cross-cultural formats and exchanges to enable the participation of as much

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<sup>7</sup> Sen criticizes Rawls' “resourcist” focus on primary goods, as they are mere means and do not take into account what people can do with these means, while the capability perspective emphasizes the substantial freedom of claim holders (see also Robeyns 2005).

diversity as exists in a community” (Schlosberg 2004: 522), alluding to some possible *instruments of justice* to achieve recognition and to policy-making procedures as a *judicandum*, and those responsible for these processes as *claim addressees* (again, e.g. the government level). Assessing the justice of such *judicanda* in terms of recognition requires assessing whether all groups are equally heard and recognized (*informational base*: recognition and *principle*: equality). In the context of this paper, the main distinguishing element we will focus on is Schlosberg’s emphasis on *recognition and voice as a claim of marginalized groups* which is undertheorised in other conceptions of justice.

Utilitarianism, an ethical approach building on the works by Bentham ([1789] 1970) and Mill ([1871] 1998), aims, in its basic form, at maximizing the sum of individual utilities in the community (Bentham [1789] 1970: Chapter IV, Mill [1871] 1998: Chapter V). Utilitarianism can be interpreted as a theory of justice: It can be argued that it satisfies the criterion of impartiality and equal consideration, because one person’s happiness is counted for exactly as much as another’s (e.g., Birnbacher 1988: 54).<sup>8</sup> The *community of justice* is constituted by all (presently and potentially future) humans, as well as by other beings capable of feeling happiness and pain. Utilitarianism has not much room for individual *claims* or rights (other than having one’s happiness counted in the same way as everybody else’s). While everything could in principle be judged according to whether it contributes to maximising total aggregate utility (and be thus a *judicandum* of utilitarianism), the focus is often on the role of government, which then also serves as the *claim addressee* (e.g., Bentham [1789] 1970: Chapter I). The *informational base* of utilitarianism is the extent of aggregate utility, and the *principle* to be applied to it is maximisation. Any goods providing utility could be *instruments of justice*. In the context of this paper, the main distinguishing element we will focus on is utilitarianism’s approach of *maximising aggregate utility* (i.e. the principle of maximisation and the informational base of aggregate utility).

### **3. Case background: The Newfoundland fishery**

The island of Newfoundland forms part of the province Newfoundland and Labrador (NL), which is the most easterly province of Canada, bordering the Atlantic Ocean. The abundance of cod in the waters around Newfoundland was the principle motive for the European settlement of Newfoundland beginning in the 16th century, giving rise to hundreds of small villages, often called outports, along the coastline (Finlayson 1994: 4, Hamilton et al. 2004: 198).

As a reaction to overexploitation and mismanagement the cod stocks collapsed in 1992 (Steele et al. 1992) and forced the closure of the fishery after hundreds of years of exploitation (MEA 2005: 12). An official moratorium for the cod fishery was issued. It

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<sup>8</sup> Understanding utilitarianism as a theory of justice has also been criticized, inter alia because the principle of maximizing aggregate utility leaves little room for individual claims and rights (e.g., Sen [1988] 2008, 1999).

has not been reversed until today and has significant impacts on Newfoundland's economy, labour market, fishing dependent coastal communities, and generally on people living in Newfoundland (Khan 2011: 89, Brunk and Dunham 2000: 10).

The fishery gives rise to important ecosystem services on several levels. First of all, it is a source of food for the local population (and therefore a *provisioning service*).<sup>9</sup> Moreover, it also gives rise to important *cultural services*: “It is difficult to over-emphasize the importance of the fishery to the people of the province. While the fishery's contribution to the provincial economy, although still significant, has considerably lessened in the years since Confederation with Canada in 1949, it remains the single most powerful source of collective cultural identity for the people who were born and raised there” (Finlayson 1994: 4). Therefore the fishery forms a huge part of Newfoundland's heritage and culture. Moreover the fishery is still the main source of income for many Newfoundland's families in the outport communities. The abundance of fish and the fishing seasons determine their daily and yearly routine.<sup>10</sup>

Decreasing levels of fish lead to a decrease in employment opportunities for people in the fish processing industry. The raised unemployment leads to a higher demand in social services and subsidies, such as unemployment insurance, but also to a higher out-migration. These effects are noticeable throughout the whole society of Newfoundland. Although the provincial employment levels are recovering from the recession-related losses recorded in 2009 (Government of Newfoundland and Labrador 2012: 17), Newfoundland and Labrador is still the province with the highest unemployment rate in Canada, with 12.5% in 2012 (Statistics Canada 2014c). The employment in the fishing industry varies throughout the year, due to the fishing season. On average 3.3 % of the population of Newfoundland were employed in the fish harvesting and fish processing in 2012 (Statistics Canada – Labour Force Survey 2014a, 2014b).

### **3.1 Fishing industry and actors in the fisheries management**

The fishing industry includes the harvesting stage and the post-harvest stage (processing, marketing, and consumption) (Khan 2011: 14). The harvesting stage includes the *inshore* sector, with vessels less than 19.8m (65 feet) length over all, and the *offshore* sector, with vessels longer than 30.5m (100 feet) length over all (DFO 2004).<sup>11</sup> The post-harvest stage is concerned with various types of processing activities and includes quality control, labelling standards, marketing strategies, and distribution channels (Khan 2011: 104).

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<sup>9</sup> For many of the fish harvesters we interviewed, their livelihoods depend on the fishery. This may be illustrated by the following statements: “The fishery, it's my life, it's very important” (IP 04) and “[The] fishery for many coastal communities is their bread and butter” (IP 13).

<sup>10</sup> Several fish harvesters stated in the interviews that they plan their daily activities and their whole year according to the abundance of fish and the opening and closing dates of the fishery.

<sup>11</sup> For vessels in between 65 feet and 100 feet, the official term is midshore, but usually those are referred to as inshore as well.

Responsibility for the fisheries management on the federal level lies with the Department of Fisheries and Oceans (DFO). It is safeguarding Canada's waters and is responsible for developing and implementing fisheries management plans. On the provincial level the Department of Fisheries and Aquaculture (DFA) is in charge of processing and marketing policies. Besides the government, the Fish, Food and Allied Workers Union (FFAW) is a main actor in the fisheries management. It represents, inter alia, members from the inshore and the offshore sectors, as well as fish plant workers (FFAW 2014) and is involved in negotiations of fish prices and collective agreements, in training and education of members, in a project with the DFO to help assess fish stocks, and in lobbying government on issues which affect members (FFAW 2014).

### **3.2 Licences and quota**

The access, i.e. the opportunity to harvest or use fisheries resources is generally permitted by licences (DFO 2004: 41). To participate in the commercial fishery and to get a licence, individuals must hold a fisher's registration issued by the DFO (Fisheries Act 1985). A fishing licence does not confer full property rights, but grants permission to harvest certain species of fish under the conditions attached to the licence (DFO 1996). Current legislation provides that licences are not transferable. In the inshore sector, a maximum number of multi-licenced enterprises exist, all of which are headed by individual fish harvesters. It is only possible to get a licence by replacing an existing one (DFO 1996). Inshore licences are only issued to individuals, not to corporations (*Fleet Separation Policy*) (DFO 2004: 43). Moreover, a licence is issued in the name of an individual fish harvester and the licence holder is required to fish his licences personally (*Owner Operated Policy*) (DFO 2004: 44). In the offshore sector, fishing licences are issued to individuals and corporations and the licence holder is not necessarily required to fish his licence personally. For the issuance of new licences mechanisms are developed on a case by case basis (Fisheries Act 1985).

Quotas refer to "the amount or share of the fisheries resource and/or effort that is distributed or assigned by the Minister of Fisheries and Oceans to those permitted to harvest the resource" (DFO 2004: 41), i.e. to those holding a licence. The share is allocated to a specific group or to an enterprise, i.e., a fleet or fleet sector, a defined set of resource users or an individual. (DFO 2004: 45). One special type of quota is the Individual Quota (IQ). Under an IQ management system, the available catch is divided among individual fishers, fishing units or fishing enterprises before the fishing season (DFO 2004: 43).

## **4. Methods**

We conducted a series of qualitative semi-structured interviews with stakeholders in the Newfoundland fishery. The qualitative approach was chosen because the aim of the research was to explore the range of possible notions of justice and to identify issues from the perspective of the interviewees. Semi-structured, in-depth interviews with open questions enable the greatest possible openness of answers by the interview

partners, allow identifying new issues unexpected by the interviewer, and avoid suggestive effects. They are suitable to discover a problem field opposed to questionnaires with closed questions, which are more suitable to verify hypotheses (Hennink et al. 2011, Kruse 2013, see also Atteslander 1993).

#### **4.1 Recruitment of interview partners**

Our goal was to interview a variety of actors from our study population, stakeholders of the fishery in Newfoundland. We therefore recruited people as interview partners who are or were active in or associated with the fishery in Newfoundland.<sup>12</sup> This could either be directly as fish harvester or processor, or indirectly as member of fishing communities, employee of the fishers' Union, decision-maker in the federal or provincial governments, representative of non-governmental organisations (NGOs), or researcher. By including interview partners from these different groups, we aimed to include people who were "information-rich" on the subject of our study (i.e. had an understanding of the fishery in Newfoundland and its justice implications) and could provide different standpoints on this issue. This is sometimes referred to as purposive recruitment (cf. Hennink et al. 2011) or theoretical sampling (Eisenhardt 1989, Corbin and Strauss 2008). The recruitment of interview partners was thus based on theoretical, not statistical, reasons, to allow an exploration of the different notions of justice related to the Newfoundland fishery. Consistent with the ethical requirements of this type of research (Hennink et al. 2011), all interview partners were asked for their consent to take part in the study, and confidentiality and anonymity was assured. In total 21 interview partners participated in the research. Interviews took place in September and October 2012 in St. John's and Bonne Bay, Newfoundland, Canada.

#### **4.2 Interview guide and transcription**

The wording and style of the questions as well as the structure of the interview guide were orientated on the guidelines given by Kruse (2013) and Hennink et al. (2011). The interview guide contained open-ended questions modelled on the conceptual structure of justice and was used to structure the interviews to ensure that all conceptual elements were covered. We produced transcripts based on records made during the interviews.

#### **4.3 Deductive and inductive coding**

Coding was done in a two-step approach, combining deductive and inductive coding. In a first step, we coded the transcripts of the interviews along the conceptual structure of justice. These codes were theoretically determined in advance ("top-down", deductively) along the conceptual structure of justice (claim holder, claim addressee, judicandum etc.). For example, every statement from the interview transcript that contained a judgment about who were legitimate claim holders was given the code "claim holder". In a second step, we inductively ("bottom-up") developed sub-codes

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<sup>12</sup> In accordance with Mitchell et al. (1997), we understand stakeholders as actors connected to the fishery by one or more of the three relationship-attributes power, legitimacy, and urgency.

("topics") from the answers given by the interview partners pertaining to each element of justice. For example, every statement that named fish harvesters as legitimate claim holders was given the sub-code "fish harvesters". Codes were thus both developed from the material (inductive codes, see e.g. Corbin and Strauss 2008) and deductively based on analytic considerations (for the interplay between inductive and deductive coding, see Hennink et al. 2011). The coding was checked by a second round of coding by a different author and consolidated in discussion.

#### **4.4 Analysis and interpretation**

In analysing the coded results, we again combined inductive and deductive reasoning. The conceptual structure of justice was used to give a first ordering to the interview material, leading to the first "layer" of codes. In a second step, the topics (sub-codes) emerging from the interview material for each conceptual element of justice were assessed and clustered. To categorize and interpret the results, we took several steps. Simple counting of how many interview partners mentioned one topic was used to identify dominant or rare topics (Hennink et al. 2011). Furthermore, contrasting, particularly extreme or theoretically interesting topics were identified (Mayring 2010, see also Mayring 2000). Results are presented using quotes from the interviews as well as simple counting, where appropriate. We used a matrix of all topics mentioned by the interview partners to assess patterns in the data (cf. Hennink et al. 2011) and examine whether particular specifications of the conceptual elements of justice intersected more frequently than others. A comparison between the exemplary conceptions of justice (see Section 2) and the notions of justice by the interviewees was conducted by focusing on the main distinguishing elements of each theory and relating it to the judgments on this element expressed by the interview partners.

#### **4.5 Methodological reflection**

Reflecting on the methodology, the meaning of numbers and quotes needs to be scrutinized. Where numbers are given, this is to provide insight into dominance or rarity of topics, but not for statistical reasons. Quotes from the interviews are provided to give the reader some insight into the interview material and to illustrate particular issues. However, in accordance with the methodological literature (cf. Hennink et al. 2011), it should be pointed out that quotes cannot be given for every topic or cluster, as some of them are not illustratable by a single quote, but emerge as an abstraction of different answers given by the interview partners.

While the interview guide gave some structure to the interviews, there were variations between the interviews in terms of time, different emphases and number of issues raised by the interviewees, etc. This is mostly unproblematic as the goal was to identify the range of different notions of justice within the study population and not primarily their relative frequency. For the quantitative aspects of our analysis (simple counting), numbers reported refer to the number of interview partners mentioning a topic, without double-counting of multiple mentionings of a topic by one person.



The recruitment of the 21 interview partners ensured a diversity of different perspectives. To fully saturate the range of perspectives on justice in the Newfoundland fishery, more people from the processing stage, from fish harvesters' organisations such as co-operatives, more women and younger fish harvesters could have been incorporated. With this caveat in mind, the interviews nevertheless provided for a good exploratory insight into the notions of justice of stakeholders in the Newfoundland fishery. (See Section 7 for a further discussion of the validity and limits of our approach.)

## **5. Results: Notions of justice by stakeholders in the Newfoundland fishery along the conceptual structure of justice**

In the interviews with the 21 stakeholders of the Newfoundland fishery, a number of main messages emerged, specifying the conceptual elements of justice for this context: Fish harvesters are seen as important group of *claim holders*, holding (inter alia) *claims* to participation/voice and making a living from the fishery. Future generations and nature may be seen as claim holders, too. The obligation to satisfy these claims shall fall on a group of *claim addressees* from different levels according to capability, including the federal government level, but also local actors. In the eyes of the interview partners, the most important *judicanda* are regulations of the fishery: first and foremost, the quota system (and the resulting distribution of access to fish) was named as something that should be just. To assess the justice in the fishery, information on the distribution of access to fish, income and wealth, and possibilities of participation are seen as important *informational bases*, and different *principles* of justice need to be balanced. *Instruments of justice* can be found both in an inclusive, participatory way of governing and in changes in regulations such as quota and licences.

However, there are many different angles to justice and none of these main messages was voiced unequivocally. In the following, we will therefore present the results in more detail and indicate the most dominant, but also rare and contrasting specifications of the conceptual elements of justice by the interview partners.<sup>13</sup>

### **5.1 Fish harvesters are seen as the most important group of claim holders**

Asked for their judgment on who had, or should have, legitimate claims in the context of the Newfoundland fishery, practically all interviewees, and from all the different

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<sup>13</sup> As indicated in Section 4, we will illustrate and back up the results by simple counting (i.e. numbers on how many interview partners mentioned a particular topic, without double-counting of multiple mentionings of a topic by one person) and quotes from the interview partners, where appropriate. Behind the quotes, we provide the identifying number of the interview partner giving that statement (e.g., IP01) so that readers can get an insight whether particular quotes were given by the same or different interview partners, while the anonymity of the interview partners is maintained. Please refer to Appendix A2 for lists of topics for each conceptual element of justice, with simple counting numbers, and to Appendix A3 for a table showing which interview partner mentioned which topic.

groups of interview partners, emphasized the group of (inshore) fishers from Newfoundland as the most important group of *claim holders* (Section 2).<sup>14</sup> The claim holder status of inshore fishers was often grounded in notions of adjacency, tradition and dependency (see also Section 5.6 on principles). This shows in the following exemplary quotes:

*“I think it needs to go traditional first. Who was there, who has been there. If that doesn’t meet the allocation, if you can’t meet the quota, the allocation can’t be taken then you can go probably to within who traditionally fished from other provinces around this area.”* (IP 08)

*“I think there needs to be special recognition of adjacency and historic dependency. [...] People who are most dependent on the fishery, should have more of a claim. But that said, also alongside with conservation concerns.”* (IP 13)

As these quotes show exemplarily, priority was given by many interview partners to adjacent and dependent inshore fish harvesters. At the same time, other groups (e.g. from other provinces, as in the first quote) are also granted some legitimacy as claim holders. Moreover, additional concerns (of the fish harvesters or other groups), such as conservation concerns, also play a role. Sometimes the claim holder status of the inshore fishers was framed in terms of a special recognition of a right to fish that in principal everybody should have (e.g., by IP 03, stating that *“everybody should have the right to fish [...] everybody has the right to choose his own career [...] there should be some help for fishermen to get started and to continue in the career”*).

Another strand of argument that also leads to a claim holder status of inshore fishers is the intention of maintaining historic local communities in Newfoundland<sup>15</sup>, as is shown in the following exemplary quotes:

*“Newfoundland and Labrador was settled because of the fishery.”* (IP 21)

*“I think it [assigning claim holder status to inshore fish harvesters] does help to build local economies in small town Newfoundland.”* (IP 14)

In contrast to the narrow focus on fish harvesters, some interview partners conceptualized claim holders more broadly, naming e.g. all Newfoundlanders, all Canadians, or all humans as claim holders.<sup>16</sup>

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<sup>14</sup> Thirteen interview partners mentioned inshore, small-scale fish harvesters as claim holders, and nine interview partners referred to fish harvesters in general (neither particularly inshore nor offshore).

<sup>15</sup> Four interview partners referred particularly to fishing communities (people who live in fishing communities or the communities themselves, in the sense of municipality) as claim holders.

<sup>16</sup> Five interview partners mentioned Newfoundlanders (people living in the province Newfoundland (and Labrador) as claim holders, three interview partners mentioned Canadians (people living in Canada), and one interview partner said that “everybody” was a claim holder.

## 5.2 Future generations and nature may be claim holders, too

Many of the interviewees found that future generations and nature (or non-human natural entities) have legitimate claims in the context of the fishery, too.<sup>17,18</sup> This may be illustrated by the following quotes:

*“I think that it is our duty to conserve and protect the natural resources, so they can be used in the future. And so they are for nature, not just for people.”* (IP 10)

*“I think we have a responsibility to future generations and whatever rights we have, that also has to come with an understanding of responsibilities and the privilege and a view to ensuring that there is a sustainable fishery for future generations.”* (IP 14)

Some of the interview partners confined claim holder status in the future to those connected to the current fishing communities, by family relations or by being part of such fishing communities. At the same time, many of the interviewees expressed doubts whether the small-scale fishery, as it is now, will survive, both because of the development of the fish stocks and because many young people don't seem to want to enter the fishery. They also pointed to a dilemma faced by management: If the fishery shall be sustained for future members of fishing communities, the resource needs to be sustained, but the communities themselves also need to be sustained and therefore need to be able to make a living from the fishery today. In this context, one interview partner pointed out that

*“those who speak, who are [advocating] fisheries conservation, [by] fish stock assessments and suggestions around management for conservation represent future generations in a way, to leave the opportunities open for future generations, but so do those who speak for community sustainability, because if there are no rural coastal communities left there will be no opportunities for young people to enjoy and participate in that.”* (IP 13)

The question of representation of future generations (combined with the question of representation of nature) also comes up in the following quote:

*“How do we give voice to future generations? Decisions are being made now, and have been made that have consequences for future generations. So it's not clear to me how we create a system that does that, but I think we need to do it and then there is always, again the question, who speaks for the fish?”* (IP 17)

Interview partners also pointed to an intergenerational trade-off created by current regulations on licenses and quota: If current fishers are allowed to sell their licenses

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<sup>17</sup> Seventeen interview partners explicitly or implicitly included future generations into the group of claim holders.

<sup>18</sup> One may therefore draw a link to sustainability ethics (Becker 2012), which refers to ethical issues in the relationships between contemporaries, future generations, and nature.

(e.g. for their retirement), this may foster intragenerational well-being and justice; however, if licenses are sold to outside the communities, this might worsen the situation of future community members, as they need to buy licenses before they can enter the fishery.

As already came up in some of the quotes above, some interview partners also included nature (or natural entities) into the justice consideration. This also shows, for example, in the following quote:

*“We need to make sure that we protect enough of that, the ecosystem, populations and stuff, species, in order to the system, to continue services and functions. Not just for human purposes, but also for all living aquatic animals in the system.” (IP 16)*

Some interview partners thus seemed to accord claim holder status to nature or natural entities, such as certain animals.<sup>19</sup>

Potential claims of nature were frequently discussed in terms of balance and stability of the ecosystem. This was often connected to a respect for nature, but also a more instrumental, anthropocentric view of conservation, justifying conservation because it secures the opportunity to make a livelihood from the fishery. This may be illustrated by the following quotes:

*“Nobody would make a living if there aren’t any more fish.” (IP 04)*

*“[The fishery] is a complex ecosystem, we understand that. I think most harvesters understand that. [...] basically harvesters have always really and will only be able to [...] harvest if it’s economically viable and sustainable. [...] People understand you can’t take too much, the habitat is important, the fish live in the habitat.” (IP 11)*

### **5.3 Participation/voice and making a living from the fishery are important claims**

What are the rights or entitlements of the claim holders, i.e. what are their *claims* (Section 2)? Interviewees expressed both fundamental claims (which are important as ends in themselves) and instrumental claims (which may serve to achieve fundamental claims).

As a first important cluster of claims we identified issues of participation and voice,<sup>20</sup> as exemplified by the following quotes:

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<sup>19</sup> Nine interview partners explicitly referred to a claim or claim holder status of nature or natural entities. Two more referred to a claim holder status of nature, but made clear that humans were more important.

<sup>20</sup> Eleven interview partners named participation and voice as claim content.

*“I think the fishermen should have a lot to say, [...] especially when you have fishermen that are in the fishery for a while, they know exactly what is going on.” (IP 07)*

*“I honestly think, some fish harvesters should be included in making the decisions, quotas and stuff like that...fish harvesters feel, there is friction between us and the government, we feel that tension, the government thinks we want all the fish, we want to catch it all, they don’t care about the stocks, but that is not the case. When we come to an agreement where we can talk, ...we got to come to terms, we have to settle our differences.” (IP 05)*

*“If you have communities that are involved in coastal resources I think that they have a voice. They need to have a voice, because a lot of that is said is lost information, because it has never been collected.” (IP 12)*

As can be seen exemplarily from these quotes, claims for participation were voiced with different foci: some interview partners focus on fundamental aspects such as giving voice and recognition to fish harvesters and their knowledge, ensuring that decisions are transparent to them and that they are free to choose and have the power to influence decisions. Others put more emphasis on the instrumental value of participation in terms of including insider knowledge into decisions and gaining legitimacy. Overall, claims to participation were the claims mentioned most frequently.

A second cluster of claims refers to the ability to make a living from the fishery.<sup>21</sup> We applied this code to all fundamental claims for material benefits from the fishery. Some conceptualized this in terms of food security or subsistence, as e.g. the following quotes show:

*“Newfoundlanders and Labradoreans should have the ability to fish for a limited supply for subsistence.” (IP 21)*

*“I would like to see a situation where food security and food sovereignty are priorities in the fishery.” (IP 19)*

Others voiced more ambitious claims of a good living:

*“They should have the right to make a good living, they should have a good decent living.” (IP 07)*

*“... I think the expectation simply is that the fishery would be managed at a place where they’re able to earn a fair competitive salary to support a family.” (IP 14)*

While there are differences in the extent of the claims that we grouped under this label, what is common to all of them is that they have some connotation of sufficiency (having enough). This links to the discussion on principles (see Section 5.6).

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<sup>21</sup> Eight interview partners named the right to make a living as a claim.

A third big cluster of claims referred to aspects of access to the fish resource.<sup>22</sup> Interviewees for example claimed continued access secured through licences and quota, emphasized the importance of local access, but also of access for commercial fisheries. We interpret these claims for access as instrumental claims which may help in the attainment of more fundamental goals, such as making a living from the fishery. In this way, the fundamental and instrumental claims are linked.

Other fundamental claims include the right to equal treatment (e.g. being treated with equal respect whether one is an inshore or an offshore fisher) and the freedom from unnecessary risks.<sup>23</sup> Such unnecessary risks occur, e.g. when fishers go out in bad weather due to overly short seasons.

Interview partners were eager to point out constraints that come with claims: *“rights don’t come without responsibilities”* (IP 17).<sup>24</sup> For example, one interview partner demanded that one should be allowed to take as much fish as one needs, but not more. Another interviewee demanded that food security be attained, but without jeopardizing the long term health of the fish species. A third interview partner demanded a balance of the claims of different sectors of the fishery and also a balance of human claims with claims of (and respect for) nature (i.e. a balance of claims of different claim holders, linking back to Sections 5.1 and 5.2).

#### **5.4 The obligation to satisfy these claims shall fall on a group of claim addressees from different levels**

Asked for their judgment on which individual or collective actor should make sure that Newfoundland fisheries are managed in a fair way and legitimate claims are fulfilled, interviewees mentioned many different possible *claim addressees* (Section 2). Many interviewees approached the question by pointing out that those currently in power did not fulfil their responsibility, and then went on to suggest different ways of allocating the claim addressee status. In this context, a substantial number<sup>25</sup> of interviewees criticized the Department of Fisheries and Oceans (DFO) for not managing the fishery well.

Most interviewees named a combination of different claim addresses which together should be responsible for the fulfilment of claims.<sup>26</sup> The federal government was part of every combination of claim addresses named by the interview partners. Second most mentioned were the fish harvesters and the provincial government. We conclude that while most interview partners think that institutions on a high political and democratic level should be involved in the management, it is almost as important for people to have

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<sup>22</sup> Eleven interview partners named aspects of access to the fish resource as a claim.

<sup>23</sup> Both claims were named three times.

<sup>24</sup> This can be interpreted in the sense that no one can be a mere claim holder, but – as claims always also give rise responsibilities for the claim holder – always is a claim addressee as well.

<sup>25</sup> Seven interview partners voiced this criticism.

<sup>26</sup> Fifteen interview partners named a combination of claim addressees.

involvement from the local level.<sup>27</sup> This may be illustrated by the following exemplary quote:

*“There should be a group formed made up of fishermen, not just big fishermen but inshore fishermen, a spokesman for inshore fishery or five spokesmen for the inshore fishery and then spokesmen for big companies and going all up to the federal government.” (IP 03)*

We conclude that most interviewees favour a multi-level approach to the just governance of the fishery. The rationale for this seems to be allocating responsibility based on a principle of capability, i.e. in terms of who is capable of achieving a just management of the fishery, more than based on other reasons such as causal responsibility or political legitimacy.

Those who named only a single claim addressee mostly referred to the federal government as claim addressee. Overall, interviewees most frequently named the federal government or the DFO as claim addressee,<sup>28</sup> followed by the fish harvesters,<sup>29</sup> the provincial government,<sup>30</sup> the Union,<sup>31</sup> the fishing communities,<sup>32</sup> researchers,<sup>33</sup> companies,<sup>34</sup> and some others.

## **5.5 Regulations are predominantly what is judged as just or unjust**

Asked what was just or unjust in the Newfoundland fishery, the interviewees named different *judicanda* (i.e., things to be judged as just or unjust, Section 2). Almost all of the interviewees named some kind of *regulation* as *judicandum*. First and foremost, the quota and licencing system (and the resulting distribution of access to fish) was considered as something that should be just.<sup>35</sup> Regulatory aspects discussed in terms of justice included the allocation of quota for (and regulations of) the inshore versus the offshore fishery; and for small vs. big players; the allocation of quota between provinces or regions within Canada; and the allocation of quota between Canada and other nations. Interviewees also discussed the opening and closing dates of the fishery, and whether Individual Quota (IQ, see Section 3) should be allocated to each fisher or not.

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<sup>27</sup> This links to the claim for participation (Section 5.3).

<sup>28</sup> Sixteen interview partners mentioned the federal government or explicitly the DFO as claim addressee.

<sup>29</sup> Nine interview partners mentioned the fish harvesters as claim addressee.

<sup>30</sup> Eight interview partners mentioned the provincial government as claim addressee.

<sup>31</sup> Six interview partners mentioned the Union as claim addressee.

<sup>32</sup> Four interview partners mentioned fishing communities as claim addressee.

<sup>33</sup> Three interview partners mentioned researchers as claim addressee.

<sup>34</sup> Three interview partners mentioned companies as claim addressee.

<sup>35</sup> Twelve interview partners named particularly licences and quota as *judicanda*, and 8 named other regulations or regulations in general as *judicanda*.

Another important *judicandum* is the distribution of *income and wealth* generated within the fishery.<sup>36</sup> This is expressed in very general terms by the following exemplary quote:

*“We must make changes to the fishery, to create a fairer distribution of wealth it brings to those directly involved and communities in which the resource exists.”*  
(IP 21)

Interviewees also addressed more specific issues regarding the distribution of income and wealth; for example, some criticized that value created within the fishery is leaving the communities or the province. One interview partner raised the question of how the costs of transition from one state of the ecosystem to another should be allocated:

*“One of the things that I think is interesting in terms of fairness is actually who, we all know that once we recover an ecosystem, rebuild a system there will be benefit for a lot of fishermen, there will also be losers, like the shrimp fishers and crab fishers and so on. [...] one of the unfairnesses about this is actually who carries the burden of transitioning the system from a currently depleted to a recovered ecosystem. [...] Is it the government or the fishermen, the conservation organisation, social impact investment, that is all related to fairness. And certainly it’s unfair to expect, would be unfair to expect the fishermen to carry that burden.”* (IP 09)

The interview partner rightly points out that the ecosystem may exist in different states: in the current state, shrimp and crab stocks are abundant; these may diminish if cod stocks recover (see e.g. Mather 2013). These alternative states of the ecosystem lead to different benefits and costs for different people, the distribution of which may be judged as just or unjust.

The third major cluster of answers referring to *judicanda* is constituted by criticism of the *behaviour* of the government or its Department of Fisheries and Oceans (DFO) as unjust.<sup>37</sup> This is connected to the previously mentioned criticism that the DFO was not fulfilling its responsibility as a claim addressee (see Section 5.4). Interviewees accused the DFO of not listening to fish harvesters.<sup>38</sup> In contrast, one interview partner obviously did not find the behaviour of the DFO to be a suitable *judicandum*:

*“[...] the government, because they were no fishermen, did not know what these [fishing regulations and techniques] will do with the stocks; but that was not*

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<sup>36</sup> Eight interview partners referred to the distribution of income and wealth as a *judicandum*.

<sup>37</sup> Ten interview partners made statements related to the behaviour of the government or the DFO. Moreover, some interviewees also referred to the behaviour of other actors as unjust: processors, offshore fishers, inshore fishers, foreigners, and the Union.

<sup>38</sup> Some even thought that the government actively wanted to get rid of inshore fishers, while the interviewees seemed to assign great value to the continued existence of the inshore fishery (i.e. a state of affairs in which the inshore fishery no longer exists is judged as unjust).



*unfair, it was just ignorant. An ignorant person is not a bad person, it just somebody who hasn't learned it right.” (IP 03)*

Connected to this cluster, interviewees criticized the dominant way of thinking about or framing of the fisheries management<sup>39</sup> – mostly referring to a frame of economic efficiency which does not allow the consideration of other concerns, according to the interview partners.

Finally, another cluster of judicanda statements refers to the distribution of *power* and possibilities for participation.<sup>40</sup> One interview partner put this in the following words:

*“Probably the most unfair pieces have been to communities, fishing communities. That we identify them as fishing communities, but they have no say in management of fisheries in Newfoundland, none, zero.” (IP 15)*

Linking this with the claims for participation and voice (Section 5.3), participation is beginning to emerge as an important issue across elements of justice.

Overall, the judicanda named by the interviewees fell into different of the categories of judicanda established in the literature (i.e. states of affairs, rules, actions and actors; Pogge 2006 and Section 2). Judicanda in the category of rules were most frequently mentioned by the interview partners, such as quota, other regulations, and mechanisms for participation. Judicanda in the category of states of affairs (e.g., the distribution of income and wealth, of access to fish, and of power; and whether or not the inshore fishery continued to exist) and in the category of actions (e.g., the behaviour of the government and other actors) also featured prominently. Only one interview partner alluded to the category of actors explicitly, in combination with institutions:

*“Well first of all I think you need ethical people. But I don't think you get ethical people in unethical institutions. So the institutional mechanisms reward unethical behaviour or don't constrain it in some way, then you're gonna get unethical behaviour, particularly, if it's rewarded. So it's not in the individuals OR, it requires ethical leadership, it requires both.” (IP 17)*

This quote shows the reluctance of the interview partner to name a single judicandum, as different categories of judicanda are interrelated; for example, the functioning of institutions and the motivations and behaviours of actors influence each other. Still, overall, rules were the most important type of judicandum identified by the interview partners.

## **5.6 Different principles of justice need to be balanced**

Asked for the principle upon which the management of the fishery should be based to make it fair or just, interviewees named several issues which can be related to the four

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<sup>39</sup> Six interview partners criticized particular ways of thinking or framing of the fisheries management.

<sup>40</sup> Five interview partners made statements related to power and participation.

basic main *principles* of justice (equality, proportionality, priority, and sufficiency) established in the literature (see Section 2).<sup>41,42</sup>

The principle of equality played a role in many of the interviewees' answers:<sup>43</sup> First of all, interviewees alluded to equality in these sense of equal representation and equal treatment between provinces, between those involved in the fishery, or between those close to the fishing area. Second, they referred to equality in the sense of equal rights to fish within a group of claim holders (such as the inshore fish harvesters). Third, they referred to equality in the sense of equal distribution of wealth and benefits from the fishery.

Another issue that was brought up by many interviewees was that the fishery should be managed in a way that allows the respective claim holder to satisfy their needs or to make a living (see also Section 5.3 on claims). We interpret this as an expression of the sufficiency principle: claim holders in this view have of claim to *enough* of what is need for a (good) living, to satisfy needs, to have food security, and the like.<sup>44</sup>

Surprisingly, only a small fraction of interview partners referred to a “proportionality to desert” argument, arguing that harder work shall be rewarded by higher benefits, or rights to fish should only be given to those who make the effort of fishing themselves.<sup>45</sup>

Interviewees emphasized the aspects of adjacency (living close to the fishery), tradition or historic attachment (having a long history in the fishery), and dependency (basing one's livelihood on the fishery) as things that should determine rights to fish – in the sense of being considered first in the allocation of licences and quota (i.e. as a priority principle) or in the sense of something that should factor in and be considered among other things (i.e. as a proportionality principle among others).<sup>46</sup> This may be illustrated by the following quotes:

*“People who are most dependent on the fishery, should have more of a claim.”*  
(IP 13)

*“I think you can think about it in terms of people who have traditional rights, access to the resources, or have, I love the term, livelihood dependency. I think*

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<sup>41</sup> However, as the interview partners rarely explicitly used these terms – equality, proportionality, priority, and sufficiency – the classification required some interpretation, as we will make explicit throughout this subsection.

<sup>42</sup> Some interview partners interpreted the question differently and did not refer to any principles of justice, but rather to principles of management (such as, e.g. the precautionary principle or sustainability and stability of the resource). This may imply that for these interview partners, justice is not the primary goal in the management of the fishery; and another societal goal is more important.

<sup>43</sup> Overall, nine interview partners referred to a principle of equality.

<sup>44</sup> Overall, eight interview partners referred to a principle of sufficiency.

<sup>45</sup> Only two interview partners voiced this kind of argument.

<sup>46</sup> Overall, nine interview partners argued along these lines.

*that would probably be my first group of people who have legitimacy in the resources.” (IP 16)*

*“Our view is that people who live closest to the resource should have first right of access.” (IP 18)*

A rule that was mentioned in this context is “last in, first out” – who has entered into the fishery last has to leave it first at times when the resource gets scarce. This may be interpreted in terms of a (lexicographic) priority principle for “longer-term” fishers, as well as a proportionality principle (rights to fish as proportional to time in the fishery). One of the interviewees presented this rule as fair because of its transparency and formalism: It leaves little room for interpretation and thus avoids conflict in times of increasing scarcity.

Finally, the principle of priority was also mentioned in the sense of giving consideration and management efforts first to the stewardship and long-term viability of the ecosystem, before other claims or other concerns, such as short-term welfare maximisation, play a role. Interview partners also called for an allocation of fishing rights according to stewardship or exemplar practices.<sup>47</sup>

Moreover, one interview partner emphasized that the choice of principle is a matter of debate:

*“I think to put whatever principle that would work best to create the most fair system is really a process that we need to discuss with the people.” (IP 16)*

One interview partner did not subscribe to one of the principles of justice discussed so far, but emphasized the stability of rules as a matter of fairness:

*“The problem is that we are living with this situation that has been arranged in the past, and in many cases it doesn’t look fair, because certain individuals have access to quite lucrative fish resources and others don’t. And that’s perpetuated by the system, because they are gonna keep that access to them or their company until they sell their business. And that goes back to stability. Because when you try to change that then you create instability and that’s another perception of unfairness.” (IP 10)<sup>48</sup>*

Overall, the multiplicity of principles named by the interviewees, where one interviewee often named several different principles, shows different principles need to be balanced and combined. This need for balance was also emphasized by some of the interview partners.

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<sup>47</sup> Two interview partners expressed a clear priority of the ecosystem, while two more called for an allocation of fishing rights according to stewardship or exemplar practices.

<sup>48</sup> This may be linked to procedural conceptions of justice such as the one by Nozick (1974), who basically argues that an allocation is fair if it was reached by fair transactions.

## **5.7 To assess justice in the fishery, look at the distribution of access to fish, income and wealth, and possibilities of participation**

What is the appropriate evaluative space or informational base (Section 2) for the justice judgment, in the eyes of the interviewees? How can one evaluate the degree of justice of a *judicandum*, and how can one evaluate whether claims are satisfied?<sup>49</sup>

Many interviewees stayed very close to the context of fishery management and alluded to information on access to the fishery and on quota as crucial informational bases.<sup>50</sup> That is, by looking at whether quota – or more generally, access rights to the fishery – are distributed according to the appropriate principles (see Section 5.6), one can – according to these interviewees – judge whether the fishery management is done in a just way.

Another cluster of answers centres on the distribution of wealth and income, and costs and benefits from the fishery.<sup>51</sup> This is often connected with a concern for people to have what is needed for a good living, in combination with the principle of sufficiency. Some interviewees explicitly referred to concepts such as well-being, satisfaction, quality of life, and happiness as informational bases, bringing in non-material aspects of a good life.<sup>52</sup>

The interplay between material and non-material aspects of a good life is expressed by the following quote:

*“Hm, well I guess, if you’re gonna look at it, at the language which most people speak, you would have to look part of it at income. But you would have to look at well-being, you would have to look at it how is the impact, social values, and health, and cultural stabilities and those pieces as well.” (IP 15)*

Another informational base named by the interview partners was whether people were treated equally (or fairly).<sup>53</sup> Related to this, we identified a cluster of answers that called for assessing justice with information on whether people were recognized and listened to, how participation and representation were ensured, and on the distribution of power and control.<sup>54</sup> These informational bases are clearly linked to the claims for participation and voice presented in Section 5.3.

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<sup>49</sup> We asked interviewees how justice should be measured in the fishery context; and we also inferred answers to these questions from the statements given on *judicanda* and principles.

<sup>50</sup> Fourteen interview partners explicitly mentioned quota, ten alluded to access to fish. These two groups largely overlapped. In total, 18 interview partners referred to quota, or access to fish, or both as informational base.

<sup>51</sup> Fourteen interview partners named income, wealth, or benefits and costs from the fishery as important information to look at in the assessment of the fishery’s justice.

<sup>52</sup> These concepts were used explicitly by four interview partners.

<sup>53</sup> This was mentioned by six interview partners.

<sup>54</sup> Overall, nine interview partners named informational bases of this cluster.

A substantial number of interviewees saw the survival of the inshore fishery as a matter of justice (see also Section 5.5 on *judicanda*). The corresponding indicator of justice needs to assess whether the inshore fishery continues to exist (measured, e.g., by a certain number of boats fishing inshore or a certain number of people working in the inshore fishery).<sup>55</sup> The importance of this may be interpreted against the background of Newfoundland's history, which was settled because of the fishery (see also Section 3 and Section 5.1).

Overall, the informational bases mentioned by the interview partners mirror more or less tightly what they said on claims and *judicanda*. The statements of the interviewees provided few clearly operable indicators, but hinted into directions of what kind of information to look for.

### **5.8 Instruments of justice can be found both in an inclusive, participatory way of governing and in changes in regulations such as quota and licences**

Asked for ways in which the fishery could be made fairer, the interview partners suggested a wide range of different *instruments of justice* (Section 2). These are tightly related to the claims formulated (Section 5.3), and suggest ways to achieve them.<sup>56</sup>

A first cluster of instruments is related to the opportunity of fish harvesters to participate in decision-making processes regarding the fishery management. In particular, interviewees suggested

- to set up a governing system which is locally based, includes all stakeholders and looks for area-specific solutions,<sup>57</sup>
- to facilitate participation of fish harvesters and community members, e.g. by forums which fish harvesters could easily attend to without a big logistic effort, or by involvement in committees<sup>58</sup>
- to foster the self-organization of fish harvesters so that they could speak with one voice.<sup>59</sup>

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<sup>55</sup> This was an issue mentioned by seven interview partners.

<sup>56</sup> A comprehensive evaluation of the instruments would require relating the instruments with empirical knowledge about how they would actually function in the concrete context of Newfoundland, and to look at the combined effects of the instruments with the already existing regulatory structure and other factors and constraints. While this would be a worthwhile endeavour, it is not our aim here. The instruments described here rather mirror the subjective evaluations of the interview partners of what would work to satisfy claims of justice in the Newfoundland fishery, and may serve as an inspiration (rather than a detailed roadmap) for those interested in institutional implementation.

<sup>57</sup> Eleven interview partners referred to an interactive, inclusive, locally based governing system as an instrument of justice.

<sup>58</sup> Nine interview partners named more participation of fish harvesters as an instrument of justice.

Interview partners furthermore suggested changes in the quota system,<sup>60</sup> e.g. rewarding stewardship with higher quotas, letting fishers determine opening and closing dates of the fishery, or by assigning individual quotas to fishermen. These instruments relate to the claim to be free from unnecessary risks (Section 5.3).<sup>61</sup> They may also be seen as an instrument to achieve a higher income for fishers. As other instruments possibly leading to a higher income for fishers, interview partners suggested changes in market regulations,<sup>62</sup> such as allowing harvesters to sell their catch directly from the wharf to the consumer instead to a processor, or raising the prices for fish.

Interviewees formulated contrasting views on how licenses should be handled.<sup>63</sup> Some supported existing regulations such as the Owner Operated Policy and the Fleet Separation Policy (see Section 3) as a protection for the small-scale fishery (because this way licenses cannot go to bigger operations); others argued for the freedom of choice of the fishers to sell their licenses, or to work on bigger boats instead of owning their own boat. Some saw licenses as something which fish harvesters should be able pass on to their children or to sell at the end of their working life and to build their pension on. Others however, demanded that licenses be given back to the state or community once a fisher stops working in the fishery. This suggests a particular view about the ownership of the fish resource, as something that ultimately belongs to the community and which single persons can only use as a privilege (and do not own in the sense of a full property right).

Some interview partners proposed mechanisms of support for the small-scale fishery,<sup>64</sup> such as financing mechanisms that make it easier for inshore fish harvesters to stay in the fishery or for young people to get into the fishery, and that redistribute the benefits between inshore and offshore (e.g. by taxes or tax reliefs, subsidies, interest loans, grants etc.).

Finally, some interview partners suggested different, and in parts opposing, business models as ways to achieve a more just fishery:<sup>65</sup> One interview partner suggested to follow a business model with bigger ships instead of holding on to traditions, and thus generating more wealth and less problems with seasonality (as bigger ships can fish longer seasons). Other interview partners focused on the small-scale fishery and

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<sup>59</sup> Three interview partners named the self-organisation of interview partners as an instrument of justice.

<sup>60</sup> Eleven interview partners referred to changes in the quota system as instruments of justice.

<sup>61</sup> For some species the fishing season is very short – for halibut, it is restricted to one day. If there is a storm on this day, the fish harvester takes a high risk to get into an accident if he goes out fishing. If he does not go out, he loses the money he would get for the catch. Self-determined opening and closing dates, or an individual quota, would give him more flexibility to react to these circumstances.

<sup>62</sup> Six interview partners suggested changes in market regulations as instruments of justice.

<sup>63</sup> Overall, six interview partners referred to licences as instruments of justice.

<sup>64</sup> This was suggested by four interview partners.

<sup>65</sup> Five interview partners referred to business models.

suggested to change the strategy from fishing large quantities to providing quality fish and to market it accordingly.

An issue that was brought up in combination with many of the instruments just mentioned was the need to work on the knowledge base for the fishery management, by including local knowledge of fishers and other stakeholders and scientific knowledge from the natural and social sciences, and by making information available, e.g. through teaching.<sup>66</sup>

Overall, the interview partners suggested first and foremost new instruments, but also recommended already existing ones (such as the Owner Operated Policy or the Fleet Separation Policy). The high number of new instruments mentioned implies that there is still need for the implementation of new instruments, at least from the perspective of the interview partners.

### **5.9 Finding patterns in the specifications of the conceptual elements of justice and between groups of interview partners**

Based on the structured account of the justice notions of stakeholders, one may want to inquire further into the patterns within these notions of justice. One may ask questions as the following: Do stakeholders name different claim holders for different judicanda? Do claim addressees vary according to which claim holders are named? Do stakeholders name certain principles in combination with certain informational bases? Moreover, one may also want to identify patterns in the notions of justice between the different groups of interview partners (such as fish harvesters, scientists, or government representatives). Do they specify some, or all, of the conceptual elements of justice differently? While our qualitative, in-depth approach does not allow statistically valid answers to these questions, in this Section we take a more speculative and exploratory approach to illustrate the kind of insights that may be gained when taking this strand of inquiry further.

Looking for patterns in the specification of the conceptual elements of justice, we created a matrix in which we assessed which specifications of the conceptual elements of justice (“topics”) were mentioned in combination with one another. The aim was to generate insights and ideas on how particular specifications of different elements are related. We focused on the combinations of topics that were mentioned most frequently (i.e. where the highest number of interview partners mentioned both topics). We found that inshore fish harvesters were the most important claim holders in all combinations, and the federal government was the most important claim addressee in all combinations, independent of how interview partners specified the remaining conceptual elements of justice. By contrast, the principles of proportionality and sufficiency were named in an alternating fashion with different specifications of the other elements, for example the claim content. The claim content “access to the fish resource” was most frequently named together with the principle of proportionality or priority, whereas the claim

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<sup>66</sup> Issues connected to the knowledge base were mentioned by twelve interview partners.

content “ability/right to make a living” was named together with the principle of sufficiency. An interpretation (consistent with the elaborations of our interview partners) is that whereas the access to the resource fish shall be proportional (or prioritized) to certain factors (e.g. a longer tradition in the fishery or a higher dependency on the resource), the claim to make a living shall be satisfied to a sufficient extent for every claim holder.

Turning to the identification of patterns in the notions of justice between the different groups of interview partners, we allocated every interview partner to one of six groups: 1) fish harvesters and community members, 2) FFAW (the trade union), 3) government, 4) researchers, 5) NGOs, and 6) processors. Subsequently we looked for peculiar answer patterns for every group. We found some peculiarities regarding the group of fish harvesters and community members (the biggest group in our sample) in comparison to the other groups of interview partners. For example, the claim mentioned by the majority of the fish harvesters and community members (and also by the two Union representatives) is “participation/voice”, whereas only half or less than half of government representatives and researchers emphasized this claim. Moreover, the (self-) organization of fishers and processors as an instrument of justice is only suggested by themselves, suggesting that they value agency and also see themselves capable of changing something if united and organized.

While these patterns cannot be validated statistically in the context of our study due to the low number of cases, this brief excursus indicates that one could use the conceptual structure of justice in combination with a quantitative, representative survey to identify and validate such patterns. The topics identified in this paper, potentially together with theoretical considerations, could be used as choice items in such a survey. This would combine advantages of a qualitative approach like in this paper, namely allowing for surprising, new issues to be brought up and to generate hypotheses, with advantages of a quantitative approach, namely the possibility to make statistically significant statements and to test hypotheses (see Section 4 for further methodological reflection and Section 7 for further discussion of the validity and limits of our method in comparison to other methods).

## **6. Putting the results into perspective**

### **6.1 Dominant issues across elements of justice in relation to the literature**

Lifting the view further from the single conceptual elements of justice, we can identify three issues that emerge dominantly in the answers of the interview partners, across the elements of justice: (1) The issue of participation and voice, (2) the issue of making a sufficient living from the fishery, and (3) the importance of rules for the notions of justice of the interview partners. We will discuss these three issues and relate them to the literature, in turn.

*Participation* came up as a claim content, *judicandum*, informational base, and among the instruments of justice. In addition, fish harvesters were not only mentioned as claim



holders but also as claim addressees, implying that they should play a role in decision-making (as being responsible presupposes the ability to have an impact the fulfilment of claims), and not be the mere recipient or object of decision making. Claims for participation were made with different foci: A focus on the recognition of fish harvesters and their freedom to choose, and a focus on the instrumental value of participation in terms of including insider knowledge into decisions and gaining legitimacy (Section 5.3).

This links with many of the arguments made in the literature. The importance of participation has been emphasized, e.g., in the Millennium Ecosystem Assessment (MEA 2005: 20): “Laws, policies, institutions, and markets that have been shaped through public participation in decision-making are more likely to be effective and perceived as just.” This alludes mainly to the instrumental value of participation in gaining legitimacy. The inclusion of stakeholders in decision-making processes also is one of the key priorities for the fisheries management according to the Fisheries Act, alongside environmental sustainability and economic viability (see DFO 2014). The frequent mentioning of the subject of participation in our study, however, implies that this inclusion is not implemented in a satisfying way, at least from the perspective of the interview partners.

Brunk and Dunham (2000: 30) state that the “problem of who should manage an ecosystem can be addressed from the perspective of the potential expertise needed for a justly managed system.” The call for participation of inshore fish harvesters in the management of the fishery may be justified by their “Local Ecological Knowledge” (see Brunk and Dunham 2000: 24, Murray et al. 2005). Brunk and Dunham (2000) argue that the involvement of local knowledge is especially urgent in cases of uncertainty, where scientific knowledge is imprecise or fallible, as seems to be the case for stock assessments in the fishery: Before the collapse of the cod stocks in Newfoundland, local inshore fish harvesters (along with local scientists) were convinced that the stocks were dangerously low, while DFO scientists relied mostly on data from the offshore fleets and continued to make optimistic assessments (Finlayson 1994, see also Brunk and Dunham 2000: 23). This is mirrored in the frequent demands by the interview partners that the government should *listen* to the fishers. Participation in this perspective is mainly a matter of including insider knowledge, but also has aspects of fundamental recognition of the fish harvesters.

In this more fundamental sense, the opportunity to participate can be interpreted in terms of the freedom to choose between different policy options and to shape decisions, and as such an important constituent of quality of life (see e.g. Sen 1987).<sup>67</sup> The interviewee’s claims for participation varied from the mere claim for incorporation of

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<sup>67</sup> Sen (1987: 1) points out: “The idea that freedom of choice is quite central to leading a good life is not a new one. It is, for example, very forcefully discussed by Aristotle. Given the importance of the quality of life of the members of the society in judging the success of economic policies, it is easy to see the centrality of freedom of choice to economic evaluation and assessment. It is, in a sense, more important than wealth, [...]”

all interests into decision-making (without a direct involvement), to participation as a form of advice to government (consultation), to sitting down and trying to find a consensus or at least a middle ground between different positions, to a substantial input into and control over decision-making. This can be linked to different steps on the “ladder of participation” (Arnstein 1969) which defines “real” participation mainly in terms of control and freedom to choose.<sup>68</sup>

The second dominant topic across the conceptual elements of justice was the ability of making a sufficient living from the fishery, in order to lead a good life. The ability to make a living comes up as a claim content and plays a role regarding the informational base (referring to indicators for material and immaterial benefits). The sufficiency principle is also connected to the idea of being able to make (at least) a good living. This links to the idea of a “sufficiency economy” for small-scale fisheries discussed in the literature (Juntarashote and Chuenpagdee 2011), contributing to fish harvesters’ livelihoods and improving their well-being.

As one aspect of a good life, the allocation of income and wealth was identified as an important *judicandum*. Fish is seen as important as a source of income and food (as a provisioning ecosystem service), and also as having a cultural dimension (delivering cultural services). This links to debates in the literature which distinguish between different types of value of the fishery, all contributing to a good life.<sup>69</sup>

As further constituents of a good life, issues such as safety and freedom, e.g. freedom to choose your own career and freedom from unnecessary risks also play a role for the interviewees. MacDonald et al. (2006) likewise discuss the significant risks induced by certain regulations which make fishers go out in bad weather due to competition for scarce fish, or families go out in big groups because of rules that allow a certain number of fish *per person* in the boat (MacDonald et al. 2006: 203). In this context, they argue that individual quotas may increase safety because they give fish harvesters control over when to fish (MacDonald et al. 2006: 197). This is also an instrument of justice suggested by the interview partners.

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<sup>68</sup> Arnstein (1969) characterizes consultation as no real participation, but as a form of tokenism. Real participation, as Arnstein puts it, presupposes some degree of power to decide and control on the side of the citizens (steps on the ladder: “partnership”, “delegated power”, and “citizen control”). The statements of the interview partners correspond to the category “partnership”, where fish harvesters are enabled to negotiate and to engage in trade-offs with traditional powerholders (Arnstein 1969: 217); and the category “delegated power”, where fish harvesters have the power to decide certain things on a local level. The category “citizen control” refers to a “full managerial control” (Arnstein 1969: 217) of stakeholders, but has not been claimed by our interview partners.

<sup>69</sup> Referring to different values of the fishery, MacDonald et al. (2006: 204) point out that there are “potentially significant tensions” between commercial and recreational or cultural uses of the fishery. Brunk and Dunham (2000: 18) point to other values besides the apparently dominant economic values, such as biodiversity, community self-sufficiency and localized management and knowledge bases. They argue that for “those whose connections to the fishery are infused with deep spiritual and cultural meaning, the just state of the marine ecosystem can only be expressed in terms of its rich natural, evolutionary history” (2000: 27).

As a third cross-cutting issue, *rules* are the *judicandum* named most frequently by the interview partners. Changes in rules and regulations (such as the quota and licensing systems) were named prominently among the proposed instruments of justice. Also, interview partners regarded the information on how access to the fishery was regulated by, e.g. licenses and quota, as an informational base. The fact that rules are very prominent in our study might be partly due to the context of our study in the fishery in Newfoundland (where regulations play a big role), and also to the focus of our questions. However, it still emerges clearly that any attempt to arrive at a juster or fairer situation in the fishery in Newfoundland or similar cases will need to tackle the issue of “just” rules for this fishery.

Many of the interview partners implicitly or explicitly demanded changes in regulations, e.g. in their statements on claims, on *judicanda* and on instruments of justice. This links to issues discussed in the literature. MacDonald et al. observe that fish harvesters “challenge resource management policies that don’t make sense to them” (2006: 206). However, the stability of rules (and associated expectations) may also be seen as an issue of fairness, as came up in some of the interviews (see, e.g., Section 5.6). The justice implications of different regulatory settings are also discussed in the literature. For example, McCay (1995) discusses the merits of individual transferable quotas (ITQs) versus co-management schemes in terms of different notions of fairness. Macinko and Bromley (2002) similarly discuss the implications of different regulations on justice in fisheries. They argue for regular auctions of fishing rights (or, in their words, privileges) instead of (permanent) individual rights, as auctions generate revenue to the public, which they see as the actual owner of the fish resources. To ensure fairness for small-scale operations, they propose to hold particular auctions for particular vessel sizes or for owner-operators, so that they cannot be outcompeted by larger operations in the process. Hernes et al. (2005) argue that ideally, a “social contract”, establishing long-term commitment to certain principles and rules with regard to what constitutes a just distribution of access rights should be at the base of fisheries management. Jentoft (2006) also discusses new ways of thinking about and designing rules in the governance of fisheries, emphasizing that social science fisheries research should be more “phronetic”, i.e. context sensitive and reflective of local values, and demands to ground such reflection in case studies. Our study can be seen as a contribution in this sense.

## **6.2 Notions of justice by the stakeholders and exemplary theories of justice**

How do the results from the interviews relate to the exemplary conceptions of justice presented in Section 2? As we indicated in Section 2, the exemplary conceptions of justice do not differ in the specification of every conceptual element. For example, all four conceptions refer to a claim addressee at the governmental level. This resonates with the specification of the claim addressee by the interview partners, where the majority of interview partners also referred to claim addressees at the government level, or in combination with other claim addressees. In the following, we will briefly discuss

the main distinguishing elements of each exemplary theory of justice (as indicated in Section 2) in relation to the specifications of the interview partners.

While Rawls (1971) concentrates on the basic structure of society, our study focused on a much more specific context, the Newfoundland fishery. Still, both Rawls and the majority of our interview partners focus on social rules as primary *judicanda*. As the main distinguishing element of Rawls' theory, we identified its priority for the worst off (via the difference principle). This can be related to the argument of priority for those most dependent on the resource (see Section 5.6 on principles and Section 5.1 on claim holders).<sup>70</sup> Rawls' theory may be called "monistic" in that it ultimately aims at equality only (Honneth 2008: 11, 20). In contrast, a majority of the interview partners mentioned more than one principle of justice.

For the capability approach of Amartya Sen (1992, 1999) and Martha Nussbaum (2000), the emphasis on capabilities is clearly the main distinguishing element. Capabilities refer to the substantial freedom of a person to achieve certain functionings, i.e. constituents of a good life (see Section 2). This links to one of the dominant topics identified in this study, the ability to make a (good) living. Moreover, interview partners emphasized the importance of participation in terms of giving choice and control to fish harvesters, which may also be linked to the Sen's and Nussbaum's focus on substantial freedom. So, while there is some overlap between the interviewees' judgments and the capability approach, some of the informational bases also were more "resourcist", i.e. referring to material benefits without necessarily linking them to the opportunities that they provide.

Schlosberg's (2004) approach resonates with many of the issues brought up by the interview partners. Particularly the issues of being listened to and having a voice showed to be of high importance to the interviewees. This can be linked to the emphasis on recognition which we identified as a main distinguishing element of Schlosberg's approach (see Section 2). Moreover, one may also argue that it is a matter of recognition to acknowledge the cultural importance of the inshore fishery and coastal communities. For example, one interview partner stated:

*"And that's I think were you get in to making unfair decisions, when you just treat the fishery just as a job, because it's not just a job."* (IP 15)

The cultural importance of the fishery may also explain why the continued existence of the inshore fishery was seen as a matter of justice by many interview partners (see Sections 5.5 and 5.7).

For utilitarianism, we identified its focus on maximising aggregate utility as the main distinguishing element (Section 2). None of our interview partners fully shared this aggregative approach; all of them named some individual claim as most important.

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<sup>70</sup> Because it is not clear whether these are the worst-off in the society at large, there is a potential tension between looking at a particular sub-system (as we do with the Newfoundland fishery) and looking at society at large (as Rawls does in his approach).

However, aggregate utility came up as a secondary concern in a few of the interview partners' answers. After the most important individual claims are satisfied, overall efficiency in the use of the fish stocks may play a role, as suggested by the following quote:

*“I think first you should look at smaller enterprises but the law of economics is gonna tell you right after that you should bring in something that is efficient, that gives you more back, that gives you most back” (IP 08).*

Overall, however, it is clearly apparent that the interview partners did not follow a utilitarian logic in their notions of justice.

Concluding, the comparison of the interviewees' notions of justice with the exemplary theories shows that the conceptual structure of justice can be used fruitfully to relate theory and empirical notions of justice. While the specifications made by the interview partners do not concord particularly strictly to any one of the theories, some of the main distinguishing elements of the justice theories resonate with the answers of the interview partners and may serve to interpret them within a theoretical normative framework.

## **7. Discussion**

Reflecting on the approach used in this paper we now discuss the validity and limits of our results, also in relation to other methods such as quantitative surveys or group discussions.

First, as Hochschild (1981) points out, qualitative in-depth interviews can “suggest” or “imply” things, but never “prove” them. In this paper, we have carefully pointed to the interpretations and inferences we made from the interview material, and hinted at their empirical validation and illustration by providing simple counting and quotes from the interviews. The interviews served to discover candidates for the specification of the conceptual elements of justice and links made between the conceptual elements, which at a later stage may be formulated into hypotheses and tested by quantitative methods or may serve in the interpretation (or rejection of certain interpretations) of existing survey results (see also Hochschild 1981).

The combination of deductive and inductive coding, analysis and interpretation involved the risk of carrying the interviewers' conceptualization of how one should talk about justice (i.e. in terms of the conceptual structure of justice) to the interviewees, instead of understanding their own notions of justice. We handled this risk by leaving ample space for open answers to the interview partners, as well as by pointing out connections between the different conceptual elements of justice and different topics brought up by the interviewees in the analysis and interpretation of the results. In this way, the combination of deductive and inductive analysis became a strength of our paper: While modelling the interview guides on the conceptual structure of justice gave structure to the interviews and ensured that all conceptual elements were covered in

each interview, the way interview partners specified each conceptual element was open and allowed for topics not expected by the interviewers.

Using individual interviews allowed interview partners to speak freely and without consideration of what others (except the interviewer) may think of them. However, it also meant that interview partners did not have to engage with what others thought about the appropriate specification of the conceptual elements. Using group discussions, one may have achieved more discussion on the relative merits of, e.g., different reasons given for claim holder status, or of different principles or instruments of justice. This might have led to more consideration of feasibility concerns in the answers of the interview partners.

In general, a limit of our qualitative approach was that because we only assessed the subjective evaluations of the interview partners, no comprehensive test for the feasibility, e.g. of the fulfilment of all claims or the implementation of the instruments of justice could be carried out. This would have required additional empirical analyses of, *inter alia*, natural, technological and institutional constraints in the Newfoundland fishery. These could then have been translated into choice experiments in which the interview partners needed to take these constraints into account. As pointed out in Section 5.9, the topics identified in this paper could furthermore be used as choice items in a quantitative survey. This would combine the advantages of our qualitative approach with advantages of a quantitative approach.

Turning the reflection more specifically to the use of the conceptual structure of justice in the study, we conclude that overall, the conceptual structure of justice served well to structure the notions of justice revealed by the interview partners. Interviewees quite readily gave account of their notions of justice, which shows the principal sense of such an inquiry (cf. Miller 1992: 590). However, we identified two difficulties: One refers to the “translation” of the conceptual elements into everyday language, the other one the difficulty of distinguishing between justice and other normative criteria in the minds of the interview partners.

First, regarding the translation of the conceptual elements into everyday language, we noticed that while, e.g., the elements “claims”, “informational base” and “instruments” are conceptually different (where claims refer to what claim holders are fundamentally entitled to, informational bases to how the achievement of these claims should be measured or evaluated, and instruments to how fulfilment of claims may be achieved practically), it was not always easy to distinguish between these elements in practice, from the answers of the interview partners. Not all interview partners seem to distinguish strictly between these elements.

Second, interview partners did not always separate justice concerns from other societal goals (such as welfare maximization or the sustainability of the fish resource). This became apparent, e.g., in the discussion of principles, where many interview partners named management principles alongside with justice principles. The core idea of justice presented in Section 2 (as bearing on the claims and obligations within a community of

justice from a standpoint of impartiality and equal consideration) served as a guideline for this distinction in our interpretation of the interviewee's statements. Generally, this observation shows that empirical work on justice cannot do completely without a normatively grounded (at least core) idea of justice, because without such an idea it becomes impossible for the analyst to distinguish whether she is actually assessing notions of justice (see also Miller 1999: Chapter 3). For the operationalization of the conceptual structure, this observation means that it may be helpful to use more differentiated and sophisticated questions in the interview guide – for example, to ask not only about principles upon which the management of the fishery should be based to make it fair or just, but to inquire about the judgments of interview partners about specific principles of justice (which may derived from different specific conceptions of justice).

Overall, the conceptual structure of justice highlights elements that were discussed only in an isolated manner in other studies. Whereas people might not strictly think in the certain elements, the conceptual structure proved helpful for a structured account to their notions of justice. It therefore allowed us to contribute to the “principled debate” on justice in fisheries that is so urgently needed (Hernes et al. 2005).

## **8. Conclusion**

The qualitative research approach used in this study allowed to get an explorative insight into the notions of justice of stakeholders in the Newfoundland fishery and to identify a range of candidates for specifications of the conceptual elements of justice. At the same time, it enabled us to show that the conceptual structure of justice is applicable to issues of justice in a practical context.

While there are different angles to justice in the fishery, some issues clearly emerged as central concerns of justice within the Newfoundland fishery, as we have discussed in Sections 5 and 6. The fishery is both a source of income and food, and a way of life. This implies that Newfoundlanders will need to find a balance between supporting and maintaining the small-scale fishery and moving on to new sources of livelihoods. This is connected to a twofold challenge: securing the continued existence (and rebuilding) of the fish stocks, and securing the continued existence of the communities who traditionally depend on the fishery. As future generations and, to some extent, natural entities are also conceptualized as claim holders in this context, one can understand the questions of justice in the Newfoundland fishery as questions of sustainability.

The interviewees' notions of justice resonated with different aspects of the exemplary justice theories (cf. Section 6.2). Clearly, Schlosberg's (2004) argument that recognition, participation and distribution are all important aspects of justice can be confirmed for the context of the Newfoundland fishery. The concern of many interview partners for those most dependent on the resource resonates with Rawls' (1971) priority for the worst-off, and the claims to make a good living and for participation and voice may be linked (cautiously) to the substantial freedom and the choice demanded by the

capability approach (Sen 1990, 1992, 1999, Nussbaum 2000). On the other hand, maximising aggregate utility was no primary justice concern for any of the interview partners. The interview partners took a rather differentiated and pluralistic stance. For example, they mentioned several different principles of justice, implying that, e.g., a concern for equality (as in Rawls' (1971) theory) should be complemented by other justice concerns. Moreover, one may argue that once basic justice concerns are satisfied, other normative goals also play a role for the interview partners, such as conservation of the resource or concerns for efficiency and overall welfare (see e.g. Sections 5.6 and 6.2).

Overall, our study shows the contested and pluralistic nature of justice. This should also have implications for normative theorizing: In the words of David Miller (1992, 1999), normative theorists should take “what the people think” into account. While normative theory plays an important role for the consistent justification of justice conceptions (ensuring, inter alia, that justice conceptions are truly impartial and separate from other normative goals such as efficiency and other motivations such as self-interest), it needs to take into account what is important for those impacted, if it wants to be relevant for the actual realization of justice. Empirical assessments of justice perceptions alone, however, cannot tell us what justice requires, either. Justice should not be merely equated with acceptability, but needs to be grounded in good reasons. Therefore, a process of engagement between empirical and normative work is needed, with the goal of mutual scrutiny and enhancement. The conceptual structure of justice employed in this paper may serve helpful for this endeavour by showing a structured way to relate theory and empirical notions of justice.

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## Appendix

In this appendix, we provide some information on the recruitment and characteristics of the interview partners (Appendix A1), give an overview over the inductive codes (“topics”) we generated from the material for each conceptual element of justice (Appendix A2), and provide a table of the topics mentioned by each interview partner (Appendix A3).

### A1 Recruitment and characteristics of the interview partners

#### Recruitment

For the recruitment of the interview partners, we used the following strategies:

- Literature and web based research of organisations, whose main field is the fishery; contact via email; arrangement of an appointment (mostly not successful).
- Contact via Bonne Bay Marine Station<sup>71</sup>-/CURRA<sup>72</sup>- staff to people who are involved in the fishery; interview enquiry via telephone; arrangement of an appointment.
- Direct contact during the CURRA symposium “Rebuilding Collapsed Fisheries and Threatened Communities” in Norris Point (2012) to people who are involved in the fishery; arrangement of an appointment.

#### Groups of interview partners

We conducted interviews with interview partners from the following groups:

Inshore fish harvesters and community members	7
Inshore fish harvesters	4
Members of an outport community (partly former fish harvesters)	3
Current and former decision-makers at various organizational levels including federal and provincial governments	4
Researchers from academia	5
Representatives from environmental and social NGOs	2
Representatives from the Fish, Food and Allied Workers Union	2
Fish processors	1

<sup>71</sup> Place in Norris Point where the interviewer stayed for three weeks during the research visit and where several interviews took place.

<sup>72</sup> CURRA: Community-University Research for Recovery Alliance, research program of the Memorial University of Newfoundland.

## Gender

We conducted interviews with interview partners of the following gender:

Female	6
Male	15

## Age

The age of the interview partners was distributed as follows (two without answer):

30-34	1
35-39	3
40-44	3
45-49	1
50-54	1
55-59	4
60-64	5
65-69	0
70-74	1

## Marital status

Interview partners reported the following marital status (two without answer):

Married or living with a common-law partner	17
Married (and not separated)	14
Living common law	3
Not married and not living with a common-law partner	2
Single (never legally married)	1
Separated	1
Divorced	0
Widowed	0

## Political leaning

Interview partners reported the following political leanings (two without answer):

Left	4
Centre-left	5
Centre	2
Centre-right	2
Other	6

## Volunteering

Interview partners assessed their involvement with the community as a volunteer, on a scale from 1 to 5, as follows (two without answer):

1: no involvement at all	0
2	3
3	4
4	8
5: very high involvement	4

## Religion

Interview partners considered themselves as part of the following religious communities (three without answer):

Catholic	2
Protestant	3
Other/non-specified	2
No religious affiliation	11

## Education

Interview partners reported the following as their highest certificate, diploma or degree (two without answer):

High school certificate or equivalent	4
Apprenticeship or trades certificate or diploma	1
College, or other non-university certificate or diploma	1
University certificate or diploma below bachelor level	1
Bachelor's degree	3
Master's degree	5
Earned doctorate	4

## Income

Interview partners reported the following average monthly net household income, in Canadian dollars (five without answer):

1,500 to < 1,700	1
1,700 to < 2,000	1
2,000 to < 2,600	1
2,600 to < 3,200	3
3,200 to < 4,500	2
4,500 to < 5,500	1
5,500 and more	7



## **A2 Lists of topics for each conceptual element of justice, with simple counting numbers**

In the following, we give an overview over the inductive codes (“topics”) we generated from the material for each conceptual element of justice, with simple counting numbers referring to the number of interview partners mentioning each topic given in brackets.

### **A2.1 Claim holder**

- *Inshore fish harvesters*: [13]  
inshore, small-scale fish harvesters
- *Fish harvesters in general*: [9]  
all fish harvesters, neither particularly inshore nor offshore
- *Fishing communities*: [4]  
people who live in fishing communities or the communities themselves, in the sense of municipality
- *Newfoundlanders (and Labradoreans)*: [5]  
people who live in the province Newfoundland (and Labrador)
- *Canadians*: [3]  
people who live in Canada
- *Everybody*: [1]  
all living humans
- *Future generations*: [17]  
future inhabitants of Newfoundland
- *Nature*: [9+2]<sup>73</sup>  
the ecosystem or certain living animals having intrinsic rights

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<sup>73</sup> Two interview partners made clear that they considered the moral status of nature as lower than that of humans.

## A2.2 Claim addressee

- *Federal government:* [16]  
the federal government in general or explicitly the DFO
- *Fish harvesters:* [9]  
particularly *inshore* fish harvesters, but this specification has not been mentioned explicitly every time
- *Provincial government:* [8]  
the provincial government level of Newfoundland (and Labrador)
- *Union:* [6]  
the Fish, Food and Allied Workers Union (FFAW)
- *Fishing communities:* [4]  
people living in fishing communities or the communities themselves, in the sense of municipality
- *Researchers:* [3]  
researchers from natural and social sciences
- *Companies:* [3]  
companies on the processing or selling level
- *Other:*  
all stakeholders, representatives of the social side, all Canadians, those able to influence decision-making, self-responsibility of businessmen, direct industry employees, educational institutions, somebody else (in addition to the DFO)

### A2.3 Claim content

- *Ability/right to make a living* [8]
  - *Freedom from unnecessary risks* [3]
  - *Right to equal treatment* (between inshore and offshore fishery, and between provinces) [3]
  - *Other:*
    - Freedom to choose own career (freedom of choice)
    - Freedom from burden (burden of transition)
    - Treatment accordingly to the laws
    - Not being underestimated
    - Gender equity
- } *fundamental*
- 
- *Access to the fish resource* [11]
  - *Other:*
    - Ability to sell fish to whoever one wants
    - Right to take as much fish as one needs (but not more)
    - Ability to sell species according to abundance
    - Right to transparent and stable rules, so that one can go about one's business
    - Right to pursue other economic models (like co-ops)
- } *instrumental*
- 
- *Participation/voice* [11]  
(for freedom of choice, transparency, input of knowledge into decisions, finding compromises and fostering legitimacy)
- } *fundamental/ instrumental*

## A2.4 Judicandum

- *Behaviour DFO/government:* [10]  
statements that referred to the behaviour of the DFO or the government concerning the management of the fisheries
- *Quota and licencing system:* [12]  
statements that referred to the quota system, including the seasons, the allocation between provinces and inshore/offshore, the general extent of quota, as well as to the licensing system and the resulting access to fish
- *Other regulations or regulations in general:* [8]  
statements that referred to all kinds of regulations in the fishery, which are not explicitly about inshore/offshore relations or the quota system
- *Power and participation:* [5]  
statements that referred to (the possibility of) participation of fish harvesters in the fishery management
- *Income and wealth:* [8]  
statements that referred to the income resulting from the fishery, the allocation of wealth, the value flow out of the province, the allocation of costs of transition
- *Ways of thinking or framing of the fisheries management:* [6]  
statements that critically referred to basic framings or motivations such as economic efficiency, bigger is better, wanting the small fishermen out of the fishery, focus on oil not fish, treating the fishery as just a job
- *Other:*  
statements that referred to other judicanda, such as  
the behaviour of the offshore fish harvesters, the Union, processors, foreigners,  
and inshore fish harvesters,  
other (non-monetary) burdens of transition,  
the social system,  
conservation of the ecosystem,  
treatment of workers at the post-harvest level,  
gender,  
intergenerational issues,  
processes of decision-making

## A2.5 Informational base

- *Quota*: [14]  
information on the allocation of quota and how they are regulated (seasons, etc.)
- *Access/rights to fish*: [10]  
information on how access to the fishery is distributed, e.g. through licences and quota<sup>74</sup>
- *Survival of the inshore fishery*: [7]  
indicators for the continued existence of the fishery, for example a certain number of boats fishing inshore or a certain number of people employed in the inshore fishery
- *Material benefits/costs*: [14]  
information on the distribution of wealth, income, and other material benefits and costs, including the material goods needed for a good life
- *Immaterial benefits*: [4]  
information on well-being, satisfaction, quality of life, happiness
- *Equal/fair treatment*: [6]  
information on whether people are treated equally or fairly
- *Participation, recognition, and power*: [9]  
information on the ability of stakeholders to participate in the decision making processes, or being represented; information on whether certain persons are recognized and listened to; information on the distribution of power and control
- *Social values*: [2]  
information on social values such as being in the community
- *Other*:  
information on the distribution of jobs, transparency, health, choosing one's own career, feedback, etc.

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<sup>74</sup> As pointed out in the main text, there is a significant overlap between the codes “quota” and “access/rights to fish”. However, the emphasis is slightly different for each: while statements with the code “quota” referred explicitly to quota, statements with the code “access/rights to fish” referred more generally to access to the fish resource, whether through quota or other means.

## A2.6 Principles of justice

- *Equality*: [9]<sup>75</sup>  
of treatment and representation [4], of rights to fish and quota [3], of benefits and wealth from the fishery resources [3], of gender opportunities, etc.
- *Sufficiency*: [8]  
enough of what is needed for a (good) living, to satisfy needs, to have food security, etc.
- *Priority*: [2]  
of management efforts/stewardship for the ecosystem
- *Proportionality*: [2]  
of benefits according to hard work / own effort
- *Proportionality or priority*: [9]<sup>76</sup>  
of rights to fish according to stewardship, exemplar practices [2]  
of rights to fish according to catch history, tradition, historic attachment [3]  
of rights to fish according to dependency on the fishery [4]  
of rights to fish according to adjacency [4]  
of rights to fish according to “last in first out” [2]
- *Other*:  
other justice principles such as stability of expectations,  
management principles such as the precautionary principle and sustainability or stability of the resource,  
subsidiarity principle,  
debating principles with the people / making decisions on principles transparent,  
balancing different principles

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<sup>75</sup> As some interview partners named different respects of the equality principle, but were only counted once for the grand total of the equality principle, the numbers of the respects exceed the grand total.

<sup>76</sup> As some interview partners named different respects of the proportionality/priority principle, but were only counted once for the grand total, the numbers of the respects exceed the grand total.

## A2.7 Instruments of justice

- *Interactive, inclusive, locally based governing system:* [11]<sup>77</sup>  
some kind of management team, composed of federal, provincial, regional and local institutions and representatives; federal and provincial wide decisions, but with local attachment
- *More participation of fish harvesters:* [9]  
different levels of participation in decision making processes concerning the fishery management, from listening to the fish harvesters, over giving them a choice to participate and meaningful consultation of them up to active involvement in committees
- *More organisation of fish harvesters:* [3]  
self-organization of fish harvesters, before they participate in decision making processes
- *Work on the knowledge base:* [12]  
information from fishers and other local stakeholders (local knowledge)  
information from natural science  
information from social science  
making information available (e.g., teaching)  
ensuring competence in the bureaucracy
- *Different quota system:* [11]  
reduce quotas  
manage division of quota with consultation of all stakeholders and find other ways such as individual quotas or harvest caps or community/regional/local quotas  
open the seasons when fish is abundant, self-determination by harvesters  
make local, not regional decisions  
reward stewardship with higher quotas
- *Different licencing system:* [6]  
foster already existing tools: owner operated principle and fleet separation;  
implement new tools: temporary retractable access rights
- *Different market regulations:* [6]  
set higher prices for fish  
same prices for fish in the different provinces  
change rules in a way that fish harvesters are allowed to sell their fish to

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<sup>77</sup> This category obviously overlaps conceptually with the two following ones, more participation and organisation of fish harvesters. We distinguished the categories in that the statements which fell under this category (governance system) referred to a broader framework, which includes participation of various different stakeholders. The statements falling under the two following categories referred more narrowly to participation and organisation of fishers.

whoever they want and have less dependency from buyers  
do not allow processing outside of Newfoundland

- *Business models:* [5]  
small and medium scale enterprises  
business model with bigger ships instead of holding on to traditions  
foster higher quality instead of quantity  
marketing
- *Support for the small-scale fishery:* [4]  
financing mechanisms that make it easier for the inshore fish harvester to stay in  
the fishery, for the young people to get into the fishery, and to redistribute the  
benefits between inshore and offshore, e.g. taxes (tax relief), subsidies, interest  
loans, grants, etc.
- *Other:*  
implement a precautionary principle  
invest in stewardship, change the frame of thinking  
base income calculations on need  
finance elections by the state and not by “private donations”



**A3 Table: Topics mentioned by each interview partner**

	interview partner	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
<b>element</b>	<b>topic</b>																					
claim holder	inshore fish harvesters			X	X	X		X	X		X		X	X	X	X	X	X	X			
	fish harvesters in general	X								X	X	X					X		X	X	X	X
	fishing communities												X			X		X				X
	Newfoundlanders	X	X			X		X														X
	Canadians			X						X					X							
	everybody			X																		
	future generations	X		X		X		X	X	X	X	X		X	X	X	X	X	X	X	X	X
	nature		X		(i)			X	X	X, (i)	X	(i)		(i)	(x)	X	X	X	X	(i)		(x)
claim addressee	federal government	X	X	X		X		X	X	X	X		X	X	X	X			X	X	X	X
	fish harvesters	X		X		X		X	X	X	X		X						X			X
	provincial government	X		X				X	X	X	X		X						X			
	Union	X			X	X				X		X							X			
	fishing communities									X				X						X		X
	researchers								X											X		X
	companies			X							X											X
	other		X						X						X	X			X			X
claim content	ability/right to make a living					X		X				X			X		X	X		X		X
	freedom from unnecessary risks			X					X									X				
	right to equal treatment		X	X		X																
	access to the fish resource		X		X		X		X			X		X		X	X		X	X		X
	participation/voice	X			X	X		X	X	X		X	X	X					X	X		
	other - fundamental			X						X	X						X					X
	other - instrumental			X			X															X

	interview partner	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
<b>element</b>	<b>topic</b>																						
judicandum	behaviour DFO/government		X			X		X	X	X					X	X	X		X	X			
	quota and licencing system	X	X	X	X	X	X			X		X		X		X	X		X				
	other regulations/in general			X	X			X	X		X	X		X					X				
	power&participation	X		X												X			X	X			
	income&wealth				X				X		X			X	X				X	X			X
	ways of thinking / framing					X				X						X	X		X		X		
	other			X	X			X		X								X	X	X		X	
informational base	quota	X	X	X	X	X	X	X	X	X	X	X		X		X			X				
	access/rights to fish	X		X								X		X		X	X	X	X	X		X	
	survival of the inshore fishery			X		X		X						X	X				X	X			
	material benefits/cost (wealth, income, what is needed for a good life)				X	X	X		X	X	X	X	X	X		X			X	X			X
	immaterial benefits (well-being, satisfaction, quality of life, happiness)									X	X						X				X		
	treatment (equal/fair)		X	X			X		X	X										X			
	participation, recognition and power		X		X	X								X		X	X	X	X	X			X
	social values										X						X						
	other			X					X	X						X					X		
principles of justice	equality	X	X	X	X		X									X		X		X		X	
	sufficiency			X		X		X				X					X	X		X		X	
	priority									X										X			
	proportionality							X												X			
	proportionality or priority				X				X			X		X			X	X	X	X	X	X	
	other									X	X	X		X	X	X	X	X	X	X		X	

	interview partner	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
<b>element</b>	<b>topic</b>																					
instruments of justice	governance system		X	X					X	X		X		X	X	X	X	X	X			
	more participation of fish harvesters	X				X		X	X		X	X		X			X	X				
	more organisation of fish harvesters					X		X														X
	work on the knowledge base	X	X	X		X		X	X		X	X			X	X	X		X			
	different quota system	X		X	X	X		X	X	X	X			X							X	X
	different licencing system									X				X		X		X	X	X		
	different market regulations			X		X		X	X											X		X
	business models								X		X						X		X		X	X
	support for the small-scale fishery													X		X	X			X		
	other																	X	X		X	

x = topic mentioned by the interview partner

(x) = claim holder status of nature mentioned, but less important than humans

(i) = instrumental status of nature

Claim holder and claim addressee were not recorded for interview partner 6, because of low battery.

## Appendix: Overview of articles included in this cumulative Ph.D. thesis

(in accordance with the guideline for cumulative dissertations in Sustainability Science [January 2012], in the following termed “the guideline”)

**Title of Ph.D. thesis: Sustainability and Justice. Conceptual Foundations and Cases in Biodiversity and Fishery policy**

### Papers included:

[1] Stumpf, K. H., C. Becker and S. Baumgärtner (2014), The conceptual structure of justice. *Manuscript*.

[2] Stumpf, K. H., S. Baumgärtner, C. Becker and S. Glotzbach (2014), The justice dimension of sustainability. A systematic and general conceptual framework. *Manuscript*.

[3] Baumgärtner, S., S. Glotzbach, N. Hoberg, M. F. Quaas and K. H. Stumpf (2012), Economic analysis of trade-offs between justices. *Intergenerational Justice Review*, 1/2012, 4–9.

[4] Stumpf, K. H. (2014), Reconstructing the “biopiracy” debate from a justice perspective, in: D. Lanzerath and M. Friele (eds), *Concepts and Values in Biodiversity*. Oxon: Routledge, 225–242.

[5] Kahmann, B., K. H. Stumpf and S. Baumgärtner, Notions of justice held by stakeholders of the fishery in Newfoundland, Canada. *Manuscript*.

**Authors' contributions to the articles and articles publication status (according to §16 of the guideline):**

Article #	Short title	Specific contributions of all authors	Author status	Weighting factor	Publication status	Conference contributions
[1]	Conceptual structure of justice (ConStruct)	CB, KHS, SB: motivation and question of the paper, conceptual clarification, discussion KHS, CB: literature review KHS: idea/research design, writing in all sections CB: writing in parts of sections 3 and 4 SB: writing in parts of section 1	Co-author with predominant contribution	1	Manuscript	The conceptual structure of justice was presented in the form contained in the other papers at the respective conferences at which these papers were presented.
[2]	The justice dimension of sustainability (SustJust)	CB, KHS, SB, SSG: idea, motivation and question of the paper, discussion KHS, CB, BG: conceptual clarification KHS: research design, literature review, writing in all sections CB: writing in parts of sections 2 and 4	Co-author with predominant contribution	1	Manuscript	ESEE 2013 IAEP 2013
[3]	Economic analysis of trade-offs between justices (EconAnalysis)	SB: motivation and question of the paper SB, SSG, NH, MFQ, KHS: discussion of conclusions, writing of revisions in all parts	Co-author with important contribution	0,5	Published in <i>Intergenerational Justice Review</i> (international peer-reviewed journal, listed in DOAJ).	Greifswald 2011 †

		SB: coordination, writing of introduction and conclusion KHS: writing of section 2 SSG: writing of section 3 NH, BG: writing of section 4 MFQ, NH: drawing of the graphs			German version forthcoming.	
[4]	Reconstructing the “biopiracy” debate (Biopiracy)		Single author	1	Published in: D. Lanzerath and M. Friele (eds), <i>Concepts and Values in Biodiversity</i> , Oxon: Routledge (peer-reviewed edited volume). Short version in German published by BfN.	DRZE 2011 ESEE 2011 Vilm 2011 *
[5]	Notions of justice in the fishery (JustFish)	SB, KHS, BK: motivation and question of the paper, discussion KHS: conceptual structure of justice, background literature on justice research BK, KHS: literature review fisheries BK: development and conduction of interviews, transcription, first coding, first analysis and	Co-author with important contribution	0,5	Manuscript	Bremen 2013 ISEE 2014 † AFS 2014 *

		interpretation of results KHS: refinement of transcripts, second coding, further analysis, interpretation and presentation of results KHS, BK: writing				
			Sum1-5:	4		
			Required:	3		

### Explanations

*Specific contributions of all authors*

BK = Birte Kahmann

CB = Christian Becker

KHS = Klara H. Stumpf

MFQ = Martin F. Quaas

NH = Nikolai Hoberg

SB = Stefan Baumgärtner

SSG = Stefanie Sievers-Glotzbach

*Author status*

according to §12b of the guideline:

Single author [Allein-Autorenschaft] = Own contribution amounts to 100%.

Co-author with predominant contribution [Überwiegender Anteil] = Own contribution is greater than the individual share of all other co-authors and is at least 35%.

Co-author with equal contribution [Gleicher Anteil] = (1) Own contribution is as high as the share of other co-authors, (2) no other co-author has a contribution higher than the own contribution, and (3) the own contribution is at least 25%.

Co-author with important contribution [Wichtiger Anteil] = Own contribution is at least 25%, but is insufficient to qualify as single authorship, predominant or equal contribution.

Co-author with small contribution [Geringer Anteil] = Own contribution is less than 20%.

*Weighting factor*

according to §14 of the guideline:

Single author [Allein-Autorenschaft]	1.0
Co-author with predominant contribution [Überwiegender Anteil]	1.0
Co-author with equal contribution [Gleicher Anteil]	1.0
Co-author with important contribution [Wichtiger Anteil]	0.5
Co-author with small contribution [Geringer Anteil]	0

*Publication status*

BfN = Bundesamt für Naturschutz, [http://www.bfn.de/0502\\_skriptliste.html](http://www.bfn.de/0502_skriptliste.html), BfN-Skripten 309, 95-100.

DOAJ = Directory of Open Access Journals, [www.doaj.org](http://www.doaj.org).



*Conference contributions (acronym, society, date, venue, website)*

- AFS 2014 American Fisheries Society, Annual Meeting  
August 17-21, 2014, Québec, Canada, <http://afs2014.org/> \*
- Bremen 2013 Universität Bremen, Institut für Interkulturelle und Internationale Studien: PhD-Workshop “Justice in Global Biodiversity Governance”  
December 19-20, 2013, Bremen, Germany, <http://www.globalnorms.uni-bremen.de/?p=1999>
- DRZE 2011 Deutsches Referenzzentrum für Ethik in den Biowissenschaften: Interdisciplinary Study Days “Biodiversity - Concept and Value”  
March 21-26, 2011, Bonn, Germany, <http://www.drze.de/drze-veranstaltungen/study-days-2011>
- ESEE 2011 European Society for Ecological Economics,  
June 14–17, 2011, Istanbul, Turkey, <http://www.esee2011.org>
- ESEE 2013 European Society for Ecological Economics,  
June 18-21, 2013, Lille, France, <http://eese2013.sciencesconf.org/>
- Greifswald 2011 Alfried-Krupp Wissenschaftskolleg Greifswald: Lecture series “Nachhaltigkeit als Zukunftsvision” in winter semester 2011/2012, lecture “Nachhaltigkeitsökonomie – Zum Verhältnis von Effizienz und Gerechtigkeit” (S. Baumgärtner),  
December 6, 2011, Greifswald, Germany, <http://www.wiko-greifswald.de/de/veranstaltung/article/nachhaltigkeitsoekonomie-zum-verhaeltnis-von-effizienz-und-gerechtigkeit.html> †
- IAEP 2013 International Association for Environmental Philosophy  
October 26-28, 2013, Eugene, OR, USA, <http://environmentalphilosophy.org/2013/07/26/2013-annual-program/>
- ISEE 2014 International Society for Ecological Economics  
August 13-15, 2014, Reykjavik, Iceland, <http://isee2014.yourhost.is/> †

Vilm 2011 Bundesamt für Naturschutz: Interdisziplinäres WissenschaftlerInnentreffen im Rahmen des Übereinkommens über die biologische Vielfalt,  
August 22-26, 2011, Internationale Naturschutzakademie Insel Vilm, Germany,  
[http://www.bfn.de/0502\\_skriptliste.html](http://www.bfn.de/0502_skriptliste.html) \*

\* Paper accepted for presentation but not actually presented

† Paper presented by co-author

**Declaration (according to §16 of the guideline)**

I avouch that all information given in this appendix is true in each instance and overall.

Ich versichere, dass alle in diesem Anhang gemachten Angaben jeweils einzeln und insgesamt vollständig der Wahrheit entsprechen.

Klara Helene Stumpf