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Representation-Affecting Claims

An attempt to improve on Alexandrova's
mixed claims

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Abstract

Anna Alexandrova [2018] invented the term “mixed claim” for an empirical hypothesis which includes at least one variable that presupposes a value judgement. Such claims, she argues, are distinct from other roles that values play in science and bring with them particular “dangers” such as those of “value imposition” and “value inattention”. To come by these dangers, Alexandrova calls for “procedural objectivity” which she claims is achieved through the deliberative co-creation of mixed claims between scientists, policymakers, and members of the public.

In this thesis, I point out *prima facie* problems of the mixed claims account. I argue that Alexandrova is ill-advised in defining mixed claims as ‘presupposing a value judgement’. I furthermore hold that the acclaimed dangers of mixed claims and the solution of procedural objectivity lack argumentative support.

I offer an alternative notion which I call *representation-affecting claims*. A representation-affecting claim is an empirical hypothesis about a putative causal or statistical relation, at least one variable of which is defined in a way that makes a lack of representation of legitimate and relevant interests in a process of science-based policy-making more likely.

On this definition, a representation-affecting claim is problematic as it constitutes an illegitimate infringement of scientists into the democratic process. I thus propose an alternative perspective on mixed claims that rests more explicitly on their significance in science-based policy-making. I hold that this definition suffers less from the issues of Alexandrova’s definition. Furthermore, I provide an argument which underscores the dangers of representation-affecting claims and supports the mitigation proposal of deliberative co-creation.

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1

Introduction

Most of Today’s philosophers of science reject the idea that the sciences can be value-neutral or even value-free. Less unity exists on what, if anything, should be done about values in science.

In this thesis, I address one recent and prominent account in the values-in-science literature by Anna Alexandrova [2017, 2018]. She introduces the notion of a “mixed claim”, which she argues is a distinct channel through which values can enter the sciences. A mixed claim is an empirical hypothesis that contains at least one variable which presupposes a value judgement [Alexandrova, 2018, p. 424]. She applies her writings to the science of well-being. An economist may say, ‘Receiving 1\$ is, all other things equal, conducive to the well-being of person x’. In this case, the empirical hypothesis is about the relation of receiving money to one’s well-being. By conceptualising well-being and correspondingly deciding how to measure this relation (for example, by observing subjects’ choices or asking them) the economist makes value judgements.

Alexandrova argues that especially when mixed claims are used in a policy context – as is often the case for well-being – scientists frequently fail to recognize their value judgements and consequently impose them on members of society when applying mixed claims. In her words, they commit the wrongs of “value inattention” and “value imposition”. For instance, the economics discipline mostly measures well-being monetarily and through observing past consumption. When policymakers use economic analyses, their policies enhance only a niche conceptualisation of well-being, the one of economic welfare, which may not comply with citizens’ understanding of well-being.

She goes on to argue that many existing accounts of objectivity are inapt for dealing with the dangers of mixed claims and calls for “procedural objectivity”, requiring that the normative commitments of mixed claims should undergo “appropriate social control”. Alexandrova then offers an intuitive procedure to achieve such control: One should gather members of “the relevant parties”,

including scientists, policymakers, and – most importantly – members of the public. Then, they should join a deliberative platform in which they discuss and decide about the content of mixed claims.

I could not agree more with Alexandrova’s conclusions and their political significance. It is problematic that a small, worryingly homogenous group of scientists with a far from uncontroversial definition of well-being often gets to be the sole scientific voice when the populace’s well-being is governed. And involving the people in some aspects of the scientific process seems indeed to be a promising approach to this issue. Yet I am worried about three parts of Alexandrova’s argument towards these conclusions, which make them, *prima facie*, less convincing:

First, I argue that by defining a mixed claim as an empirical hypothesis one variable of which presupposes a ‘value judgement’, the practical applicability of her arguments suffers. I will inquire into the meaning of the term value judgement and show that it is conceptually ambiguous. For this reason, I will argue, its extension can be subject to intersubjective disagreement which is not easily resolved. Furthermore, I suggest that scientists sometimes are interested in not acknowledging making value judgements as parts of their empirical hypotheses. I hold that due to these factors there may be difficulties for Alexandrova’s definition to reliably identify the object domain of mixed claims in practice. I call this the *identification problem*.

Second, by defining a mixed claim as an empirical hypothesis one variable of which ‘presupposes’ a value judgement, Alexandrova places an unfavourable emphasis within her definition, which might unnecessarily limit the scope of concepts that fall under the label of mixed claims. As I will argue, it is not necessary for a hypothesis to ‘presuppose’ anything for one of its variables to have worrying consequences due to the way in which it is defined. I call this the *problem of unrecognized non-epistemic implications*.

Third, I argue that Alexandrova does too little to argumentatively back up both the dangers of mixed claims and her subsequent proposal of setting up a platform to deliberatively co-create them. Alexandrova seems to rely on a shared intuition amongst her readers about the moral significance of the dangers of mixed claims instead of pointing to commonly accepted moral or political reasons. She subsequently successfully illustrates the insufficiency of different accounts of objectivity to deal with mixed claims but gives too few ‘positive’ reasons in favour of her desideratum of procedural objectivity to do the job. Finally, she provides little argumentation to show the aptitude of her practical suggestions as an operationalisation of procedural objectivity. Amongst other things, it is unclear why members of the public should be involved instead of elected political representatives. I refer to this simply as the *problem of insufficient argumentation*.

I do not express my critique out of an intention to reject Alexandrova’s arguments. As will become clear, the problems I point at only *reduce* the con-

vincingness of her arguments rather than rendering them fully unconvincing. Being very much in support of Alexandrova's endeavour and its practical significance, I thus take the position of a sceptic to find out how her case can be made even more convincingly.

Having pointed out these *prima facie* issues, I translate them into three desiderata for an alternative account. Its constitutive notion should be [1] more intersubjectively robust and [2] directed at consequences instead of relying on presupposition. Furthermore, the overall account should be [3] thoroughly argued for by reference to commonly accepted moral or political reasons.

The basic cornerstone of my proposal is to offer an alternative notion which I call *representation affecting claims*. These I define as follows:

Representation-affecting claim: A representation-affecting claim is (1) an empirical hypothesis about a putative causal or statistical relation (2) at least one variable of which is defined in a way that (3) makes a lack of representation of legitimate and relevant interests in a process of science-based policy-making more likely.

I argue that this notion can be more intersubjectively robust by being based on the representation of interests instead of value judgements [1]. Furthermore, the concept is directed at consequences by being defined as making a lack of representation more likely instead of in terms of presupposition [2]. Lastly, and perhaps most importantly, I will show that on the basis of my notion of representation-affecting claims, a convincing argument can be given that underscores their dangers and supports setting up a co-creative deliberative platform in the way Alexandrova suggests to mitigate these dangers [3].

I maintain that the sole legitimate role of scientists, when contributing to policy-making, is to contribute an informational basis that allows policymakers to assess how all legitimate and relevant interests of the populace are affected by a policy. Put negatively, it is *not* their legitimate role to decide which interests should be neglected in a policy discourse. However, when their claims are representation-affecting, this is precisely the role they are taking. On this view, a representation-affecting claim becomes problematic as it constitutes an illegitimate infringement by scientists into the political discourse. On the basis of these dangers of representation-affecting claims, I argue why Alexandrova is right in proposing a process of collective deliberation between scientists, policymakers, and members of the public to mitigate these dangers. Members of the public should be consulted as only thereby can it be ensured that a policy discourse that involves a representation-affecting claim takes on board all relevant and legitimate interests. Scientists and policymakers should be consulted as affected members of the public are, in most cases, only able to articulate and form their interests when accessing relevant expert information. Deliberation is necessary as it is an effective technique for reaching an understanding of this information and due to individuals being receptive to other people's interests when forming their interests.

In the end, I arrive at an account which is similar to Alexandrova’s in the sense that it points to the same phenomena and makes the same practical suggestions. Yet through taking a slightly different angle, I hope to bring the political significance of this phenomenon even more to the fore, lend further support to the proposal of collective deliberation, and avoid mentioned problems of the mixed claims account which may stand in the way of effectively treating them in practice.

Chapter Summaries

In chapter 2, I will begin this thesis by presenting the mixed claims account, also drawing on bordering publications in philosophy of science. Section 2.1 introduces the definition of mixed claims. Section 2.2 presents Alexandrova’s arguments in favour of mixed claims being a unique and unresolvable notion. Section 2.3 illustrates Alexandrova’s ‘dangers’ of mixed claims which motivate her subsequent mitigation proposal. Finally, section 2.4 introduces her arguments on different accounts of objectivity with the mitigation proposal of setting up deliberative platforms between the “relevant parties” to operationalise “procedural objectivity”.

In chapter 3, I will illustrate the *prima facie* problems of the mixed claims account. Section 3.1 is centred around the term ‘value judgement’. After illustrating the implausibility of a metaphysical interpretation of the term in 3.1.1 I illustrate the *identification problem* in 3.1.2 which arises under the more plausible conventional interpretation. Section 3.2 then presents the *problem of unrecognised value judgements*. In section 3.3 I introduce the *problem of insufficient argumentation*. I reformulate these three problems into three desiderata for an alternative account in 3.4.

In chapter 4, I propose my alternative notion of representation-affecting claims. I will develop a definition in section 4.1, expanding on the representation of interests in 4.1.1 and on the legitimacy and relevance criterion in 4.1.2. I apply this definition to an example in section 4.2. In section 4.3 I will argue why looking at the representation of legitimate and relevant interests is a relevant concern in a discussion about science-based democratic policy-making. I justify my focus on the representation of interests in 4.3.1 and the legitimacy and relevance constraints in 4.3.2.

In chapter 5, I will show how my account fulfils the desiderata specified in 3.4. In section 5.1 I argue that my notion of representation-affecting claims is more intersubjectively robust than mixed claims. I will show that it is directed at consequences in 5.2. In section 5.3 I will argue why representation-affecting claims are ‘dangerous’ and why setting up a collective deliberative platform, including members of the public, is desirable for coping with these dangers.

Chapter 6 concludes.

2

Mixed claims and their place in philosophy of science

Anna Alexandrova develops her arguments throughout the paper “Can the Science of Well-Being be Objective?” [Alexandrova, 2018] and a chapter of her book “A Philosophy for the Science of Well-Being” [Alexandrova, 2017, pp. 79–105]. As the book chapter is essentially a less extensive version of the paper, I will refer to her paper in what follows.

I structure my reconstruction and explanation of her arguments to serve best the purpose of building a background for my subsequent arguments. Yet I believe that this does not negatively affect the accuracy of my reconstruction. Where suitable and necessary for understanding Alexandrova’s account I mention other relevant writings in the values-in-science literature, without the aim of providing a comprehensive literature review. Alexandrova’s argument leads to three related but distinct conclusions. In what follows I dedicate one section to each conclusion.

C1, mixed claims as unique and irresolvable: Mixed claims constitute a unique channel of influence of values in science which is not easily resolvable (section 2.2).

C2, need to address the dangers of mixed claims: Mixed claims and their specific nature and dangers need to be addressed (section 2.3).

C3, procedural objectivity through deliberative co-creation: Mixed claims can only be adequately addressed by aiming for procedural objectivity which is operationalised through (i) making underlying value propositions explicit, (ii) checking if these are invariable to disagreement, and (iii) conducting a process of deliberative co-creation if this is not the case (section 2.4).

These sections will be followed by an overview of the whole argument in section 2.5.

Now, before getting to her inferences to these conclusions I will introduce the foundation of her argument, the definition of mixed claims, in the first section of this chapter.

2.1 Definition of mixed claims

Alexandrova writes:

Mixed claims: “A hypothesis is mixed if and only if:

- (1) It is an empirical hypothesis about a putative causal or statistical relation.
- (2) At least one of the variables in this hypothesis is defined in a way that presupposes a moral, prudential, political, or aesthetic value judgement about the nature of this variable.” [Alexandrova, 2018, p. 424]

An empirical hypothesis can be of the form ‘An increase in x leads to an increase in y ’ where its truth value can be discovered through empirical observation. We may, for example, instantiate this formula with ‘Taking up a hobby leads to an increase in well-being’. In order to be able to empirically assess this statement it is necessary to define a notion of well-being and a measurement procedure to capture it. The truth value of the statement may depend on the precise notion of well-being that is chosen. If one defines well-being in terms of self-reported well-being – which is common psychological practice – empirical analysis will probably corroborate the statement. If one thinks of well-being in the sense of monetary economic welfare, the statement might not be empirically corroborated [Alexandrova, 2018, pp. 423–26].

While related to them, mixed claims should not be confused with so-called “thick concepts”. Thick concepts, a notion introduced by Bernard Williams [1985], are concepts that “combine evaluation and non-evaluative description” [Väyrynen, 2021]. Examples include cruelty, selfishness or kindness. For example, when we say that an act is ‘selfish’ the act needs to descriptively comply with a common understanding of this term according to which a selfish act is one in which the actor puts their interest over that of others. On the other hand, calling an act selfish always has an evaluative, mostly condemning, dimension.

The *concept* of well-being can be called a thick concept. But as Alexandrova [2018, p. 245] notes, mixed claims are intended to grasp a certain type of *propositions*, not concepts. A thick concept might nevertheless be why a claim includes a variable that presupposes a value judgement and for which it is thus ‘mixed’. For example, in the previously given proposition ‘An increase in dis-

posable income leads to an increase in well-being’ the thick concept ‘well-being’ makes it mixed.

For matters of completeness we might also imagine a mixed claim that does not include a thick concept. As such a claim needs some variable that presupposes a value judgement the only way in which it could be mixed, other than through a thick concept, would be through a “thin” ethical concept. A thin ethical concept is one that is seen as being only evaluative. Examples include goodness, badness, rightness or wrongness. I might, for example, say ‘Littering is bad’. When we call an act ‘bad’ it does not need to comply with descriptive standards as specific and commonly accepted as is the case for ‘selfish’.¹ We could thus say that ‘Littering is bad’ constitutes a mixed claim where the value presupposition of one variable does not stem from a thick but a thin concept.

However, such examples neither seem of particular relevance in the context of the mixed claims account nor is it theoretically plausible to call them mixed claims. Alexandrova’s overall argument is directed at empirical hypotheses in the social sciences that have the objective of empirically corroborating some causal relation. The hypothesis ‘An increase in disposable leads to an increase in well-being’ is one that scientists believe they can measure. Yet such hypotheses do usually not include thin concepts such as ‘badness’ or ‘rightness’. This is because whether something is conducive to ‘badness’ or ‘rightness’ is not generally conceived as being in the scope of empirical research at all. Calling a hypothesis that includes a thin concept a mixed claim thus requires a counter-intuitive belief that this thin concept is apt for empirical measurement. Thus, while Alexandrova does not explicitly restrict mixed claims solely to such hypotheses which are defined in terms of a thick concept, they seem in practice to scope only this very set of hypotheses.

Alexandrova [2018, p. 425] furthermore specifies that the values that make up mixed claims are *non-cognitive*. Cognitive values, sometimes called epistemic values, are values such as ‘simplicity’ or ‘coherence’ that are believed to be uncontroversially beneficial to any scientific inquiry. On the other hand, non-cognitive values make the whole of moral, political, or aesthetic values that do not cover such uncontroversial principles of inquiry [Longino, 1996].

On the basis of this definition, Alexandrova develops an extensive argument on the dangers of mixed claims and mitigation strategies.

2.2 C1, mixed claims as unique and irresolvable

In chapter 3, titled “Mixed Claims are Different”, Alexandrova goes on to distinguish mixed claims from other channels through which values may enter the

¹The reader might, as is the philosophical literature [Väyrynen, 2021], rightly be sceptical about the degree to which the distinction between thin and thick concepts is analytically tenable and/or linguistically useful. This question will again become relevant when I discuss a problem of the mixed claims account in 3.1.1.

sciences in order “[...] to show the uniqueness of mixed claims” [Alexandrova, 2018, p. 426]. Those are (1) “values as reasons to pursue science”, (2) “values as agenda setters”, (3) “values as ethical constraints on research protocols”, (4) “values as arbiters between underdetermined theories”, (5) “values as determinants of standards of confirmation”, and (6) “values as sources for wishful thinking and fraud” [Alexandrova, 2018, pp. 426–28].

It is not within the scope of this thesis to closely examine all these distinctions. Yet I will briefly examine one distinction, namely the one between mixed claims and values as agenda setters. This will give us a more precise understanding of what Alexandrova [2018] means by the phrase “mixed claims are different”. This phrase can be misunderstood, as I believe Peters [2020] does.

Peters [2020] argues that to show that mixed claims are genuinely different, one would need to make plausible that (a) not all agenda-setting values are mixed claims *and* (b) not all mixed claims are agenda-setting values. (a) holds uncontroversially as it is perfectly conceivable that someone sets a scientific agenda – based on a value judgement – but does not invoke any empirical hypothesis. For example, a parliament’s economic committee might command a group of economic advisors to research measures which ‘reduce economic inequality’. They thereby set a scientific agenda for economic advisors but do not express an empirical hypothesis.

Yet (b) does not hold. It seems that any empirical hypothesis can potentially set a future research agenda. For example, economic advisors might conceptualise economic inequality as follows and form a mixed claim on the basis of it:

Economic inequality = Inequality in annual disposable household income

Hypothesis: ‘A progressive income tax reduces economic inequality.’

This hypothesis may set a future research agenda, for example, when the economic committee asks advisors to research into the specific design of a progressive income tax scheme. In this sense, any mixed claim could also serve to set a scientific agenda [Peters, 2020, pp. 5–6].

Peters is not wrong with his analysis on (a) and (b). There indeed is an overlap between the set of hypotheses that are mixed claims and that which are agenda setters. Yet it does not seem necessary to show that there is no such overlap for arguing that mixed claims are a unique notion. A more plausible reading of Alexandrova’s phrase “mixed claims are different” is to assume not that the *entity* of a mixed claim is different from an agenda-setting value judgement but that the *channel* or function through which it enters a science is different from other channels through which values may enter the sciences. That this is the correct interpretation becomes clear between the lines, for example, when Alexandrova announces to provide “[a] taxonomy of the *ways in*

which non-cognitive values can enter science [...]” [Alexandrova, 2018, p. 426, my emphasis] instead of a taxonomy of analytically separate kinds of values in science. Her phrasing suggests that it is not a difference between the values themselves but rather between different trajectories that value judgements can take into the sciences. On that reading it suffices to show that there are cases in which mixed claims do not set an agenda. This is easily done: Imagine, for example, an economist who advises a politician on well-being policy and utters the claim ‘Inflation is bad for people’s well-being’. At this moment the scientist expresses a mixed claim but does not at the same time set a research agenda of any sort. To take stock, Alexandrova thus holds that:

Mixed claims are different: Mixed claims are not reducible to other channels through which values may enter the sciences.

Having defended the uniqueness of the notion of mixed claims, Alexandrova [2018, pp. 429–32] argues why they cannot simply be reduced to being value-neutral in the chapter “Mixed claims should stay.” She focuses on refuting Nagel [1962] who she states makes “the most explicit case against mixed claims” [Alexandrova, 2018, p. 429] in his book “The Structure of Science”.

In the chapter “On the value-oriented bias of social inquiry” Nagel [1962, pp. 485–502] discusses a range of ways in which value judgements enter scientific inquiry. The one relevant to the case of mixed claims is that of “the identification of fact” [Nagel, 1962, p. 485]. He holds a similar position as Alexandrova on the significance of values in defining objects of social-scientific inquiry. Nagel regards as given:

“[...] that a large number of characterizations sometimes assumed to be purely factual descriptions of social phenomena do indeed formulate a type of value judgment; that it is often difficult, and in any case usually inconvenient in practice, to distinguish between the purely factual and the ‘evaluative’ contents of many terms employed in the social sciences;” [Nagel, 1962, p. 491]

However, he differs from Alexandrova’s position in writing that these statements do “[...] not entail the conclusion that, in a manner unique to the study of purposive human behaviour, fact and value are fused beyond the possibility of distinguishing between them” [Nagel, 1962, p. 491]. In his view, a value judgement can play two kinds of roles. It can, first, be a judgement that is meant to approve or disapprove of some action or state of affairs (“appraising value judgement”). But it can also, second, be a judgement that is directed solely at indicating how some concept is empirically realised in a state of affairs according to a certain definition of this concept (“characterizing value judgement”). The example I invoked previously will help to clarify the difference:

When I say ‘A progressive income tax reduces economic inequality’ I can thereby mean that a progressive income tax is something that should be pro-

moted as it contributes to something good, namely economic equality. This is the sense of Nagel’s “appraising value judgements”. On the other hand, I can mean this perfectly neutrally and thereby state that a progressive income tax decreases economic inequality if economic inequality is conceptualised in terms of inequality in disposable annual household income. In this sense, my statement can be a “characterizing value judgement”.

According to Nagel, due to the fact that one can interpret a value judgement in this last sense, mixed claims do not stand in the way of ethically neutral sciences. As long as mixed claims are expressed in the form ‘If X is understood as Y , then C ’ (‘If economic inequality is understood as inequality in annual disposable household income, then a progressive income tax reduces economic inequality’) they can be said to be value-neutral.

In Alexandrova’s view, this proposal of conditioning mixed claims on the operationalisation of a concept can ultimately not resolve their value-ladenness. Following Nagel in formulating mixed claims as characterizing value judgements, she argues, would simply entail that value judgements need to be made at a different stage of inquiry. For example, Nagel might hold that by qualifying the proposition ‘An increase in disposable income leads to an increase in well-being’ as ‘An increase in disposable income leads to an increased well-being when well-being is understood as preference satisfaction’ we would make a merely descriptive, characterizing value judgement. However, as Alexandrova argues, someone would still need to decide which operationalisation of a concept such as well-being should be chosen for scientific inquiry or science-based policy. The controversial appraising value judgement, to stay in Nagelian language, is merely *delegated* to another level [Alexandrova, 2018, pp. 430–31]. Alexandrova thus holds the following:

Mixed claims are irresolvable: Mixed claims, as a channel through which values influence science, cannot be easily resolved as to be value-neutral.

At this point Alexandrova has established the uniqueness and persistence of her notion of mixed claims. I summarize these steps in the following conclusion:

C1, mixed claims as unique and irresolvable: Mixed claims constitute a unique channel of influence of values in science which is not easily resolvable.

2.3 C2, need to address the dangers of mixed claims

Up to this point, Alexandrova’s arguments were intended to defend the notion of a mixed claim as one which is sufficiently unique and stable to remain the

object of further argument. Her subsequent chapter, in which she introduces the “dangers” of mixed claims, is then targeted at motivating the choice of her object of inquiry by referring to its practical significance [Alexandrova, 2018, pp. 432–33].

The first, and in her eyes most serious, danger of mixed claims is that of “value imposition”. While she does not give a general account of this danger she illustrates it for the case of well-being:

“The most serious charge is an importation into a science of substantive views about the nature of well-being that those whose well-being is being studied have good reasons to reject” [Alexandrova, 2018, p. 432].

In more general terms, she regards it as dangerous that by making controversial value judgements within their scientific hypotheses social scientists impose their value judgements on the subjects which they investigate. According to her, the advocacy of leading economists of a measure of national well-being based only on the average ratio of positive to negative emotions of the population is an example of such a mixed claim which many individuals plausibly reject. [Alexandrova, 2018, p. 432].

The second danger she mentions is that of “value inattention”, which refers to the failure of scientists to notice their value judgements in mixed claims. As she argues “[e]conomists have been known to treat preference satisfaction revealed by willingness to pay as definitional of well-being and thus not needing a justification”. Due to not realising their value judgements, either deliberately or accidentally, they “snuck in” controversial values into their empirical analyses, which amounts to a misuse of authority [Alexandrova, 2018, p. 432].

Taken together, she argues, these dangers hamper public trust in science next to raising the danger of “coercive paternalism”. What she means by coercive paternalism and how mixed claims might lead to it is written in an earlier paper on the use of mixed claims in normative economics [Haybron and Alexandrova, 2013]. The authors argue that by taking a “minimalist stance” on welfare in defining it in terms of preference satisfaction economists and economic policymakers make room for paternalist policies, being such that apply a conception of welfare which is not shared by the individuals the welfare of whom is investigated.

The two dangers can be summarized as follows:

The dangers of mixed claims: Mixed claims bring with them dangers such as “value imposition” and “value inattention”.

She has thus shown that mixed claims are a persistent and unique notion (C1) and that they are furthermore dangerous. This motivates her subsequent project of addressing mixed claims and their particular dangers:

C2, need to address the dangers of mixed claims: Mixed claims and their specific nature and dangers need to be addressed.

2.4 C3, procedural objectivity through deliberative co-creation

Before proposing a procedure for dealing with mixed claims, Alexandrova goes through an array of existing accounts of objectivity and impartiality which she all deems inadequate for dealing with mixed claims.

She starts with “interactive objectivity”, a term that is due to Heather Douglas [2004], which Alexandrova states is best represented in the writings of Helen Longino. Interactive objectivity demands that the background assumptions that underlie empirical research need to be subjected to the criticism of a variety of interests within the scientific community. Alexandrova [2018, p. 433] names different steps that other authors recommend to achieve interactive objectivity such as allowing for a plurality of research strategies, creating venues for criticism, and creating equality of intellectual authority within the sciences [cp. Longino, 1990, 2017, Lacey, 2005]. Alexandrova regards requirements of interactive objectivity such as pluralism and open criticism as insufficient and “too vague” to effectively deal with the dangers of mixed claims. As she argues and shows elsewhere [Alexandrova, 2012, p. 433], there is already pluralism about accounts of well-being within the sciences. Yet, scientific pluralism by itself does not ensure that value judgements are also recognized as such and dealt with in a responsible manner. Furthermore, mixed claims, she states, need a specific kind of *normative* criticism, not just any criticism [Alexandrova, 2018, p. 433–34].

The subsequent section is dedicated to pointing out the insufficiency of “impartiality”. Alexandrova defines impartiality in reference to Lacey [2005, pp. 23–24] according to which only cognitive – and *not* non-cognitive political or moral – values should guide theory choice and creation.² Impartiality, she argues, is too restrictive to be plausibly applied to mixed claims. Mixed claims are, by definition, partly constituted by a variable which presupposes a (cognitive, moral or political) value judgement. Thus, mixed claims can by definition not satisfy impartiality [Alexandrova, 2018, pp. 434–35]. Finally, she invokes a reformulated version of impartiality according to which a mixed claim would be impartial if and only if once all the value decisions about the scientific process are made, non-cognitive values do not further influence whether a hypothesis is accepted. While this, so she admits, might be closer to the position of the supporters of impartiality, it does not help with the dangers of mixed claims. Impartially conducting empirical research with a mixed claim that is necessarily value-laden from the beginning will not prevent value inattention and imposition [Alexandrova, 2018, p. 435].

²According to Alexandrova [2018, p. 434], while the cognitive/non-cognitive divide is often disputed, impartiality does not crucially depend on it as shown in Douglas [2009, Chapter 5].

Alexandrova [2018, pp. 435–37] thus starts a search for an alternative account of objectivity in the subsequent chapter that is without the flaws of interactive objectivity and impartiality. She refers again to Heather Douglas [2004] who distinguishes between three interpretations of the concept of objectivity: (a) objectivity in the sense of “getting at the objects” as they really are, (b) objectivity as minimizing bias, and (c) objectivity as characteristic of the social process of science (“procedural objectivity”). While she regards all these notions of objectivity as fruitful desiderata for a science of well-being, she considers (a) and (b) as inapt for dealing particularly with the dangers of mixed claims:

“Securing the right normative assumptions for mixed claims is neither a metaphysical task of making sure well-being is out there, nor is it a task of eliminating values.” [Alexandrova, 2018, p. 436]

This rejection of existing accounts can be summarized in the following statement:

Inadequacy of accounts of objectivity and impartiality: Existing accounts of objectivity or impartiality cannot help to adequately address the dangers of mixed claims.

What mixed claims are ultimately in need of, she argues, is Douglas’ procedural objectivity (c). She understands creating procedural objectivity as establishing processes to ensure that the value commitments within mixed claims have undergone “appropriate social control” and are “resistant to hijacking by specific individuals” [Alexandrova, 2018, p. 436]. Importantly, as its name says, this sort of objectivity does not focus on the outcome but on the *process* of scientific inquiry. In proposing this she regards herself as following a line of pragmatist thinkers, inspired by the works of John Dewey who regard procedural objectivity in values as achievable only through “experiments in living” and “public scrutiny”. This tradition, she remarks, stands in contrast to “constructivist conceptions” in the tradition of John Rawls and others, according to which objectivity is the result of an approximately ideal process of deliberation. The latter she regards as infeasible due to scientists not having access to such deliberation. Yet, she regards the principles of procedural objectivity she proposes in the following chapter as compelling for pragmatists and political constructivists alike.

Before coming to these principles, let me summarize her plea for procedural objectivity in the following:

Procedural objectivity: Mixed claims need to undergo a process to ensure that their value commitments have undergone “appropriate social control” and are “resistant to hijacking by specific individuals”.

In her final chapter, [Alexandrova \[2018, pp. 437–441\]](#) proposes three lexically ordered principles for approaching procedural objectivity for mixed claims.

As a first step, scientists should “unearth the value propositions in methods and measures”. This entails not only that scientists should make explicit where their hypotheses include value-laden variables but also the acknowledgement of alternative judgements that could be made and about which there is reasonable disagreement by others [[Alexandrova, 2018, pp. 437–38](#)].

Secondly, one should “check if value presuppositions are invariant to disagreements”. A value presupposition is invariable to disagreement if the respective empirical hypothesis holds under all available alternatives. To see an example of this, take the hypothesis ‘Chopping a person’s healthy leg off is on average harmful to her well-being’. Under all reasonable accounts of well-being – ranging from accounts of Aristotelian flourishing or capabilities to hedonist approaches, self-reported well-being or psychometrics – this hypothesis would hold. If this is the case, so Alexandrova argues, the value-ladenness of the respective hypothesis is not an issue with regard to procedural objectivity [[Alexandrova, 2018, p. 438–39](#)].

Often, empirical hypotheses will not be invariable to disagreement about underlying value judgements. If this is the case, one should “consult the relevant parties”. More concretely, she proposes to conduct “deliberative polls” about the presupposed value judgements of mixed claims as designed by [Fishkin \[2009\]](#). In deliberative polls participants are initially provided with relevant background information to value propositions, such as one that contains the definition of well-being, and presents them with the available alternatives. Subsequently, they are to deliberate about the right proposition with the goal of reaching a consensus. According to Alexandrova’s suggestion, polling should, for the case of well-being, include (I) scholars working with well-being on a theoretical level, (II) empirical well-being researchers, (III) makers of well-being policy, and (IV) a representative sample of the subjects likely to be investigated and treated with a specific conception of well-being in mind. She defends her choice to include scientists in this group as she ascribes them to have “normative knowledge in virtue of their empirical knowledge”. Yet, as she is quick to add, this should not get at the expense of the interests of affected non-experts to influence the conception of well-being under which they are being treated and investigated. Beyond this, Alexandrova’s development of a procedure for “consulting the relevant parties” remains vague and she admits that implementing her proposal is subject to major uncertainties, practical difficulties and high costs. Yet “[...] it seems wrong not to try” [[Alexandrova, 2018, pp. 439–41](#)].

To take stock, Alexandrova has argued that mixed claims are unique and non-resolvable (C1), that their dangers should be addressed (C2), that these dangers are inadequately addressed through existing accounts of objectivity and impartiality, and that procedural objectivity provides an adequate basis for dealing with mixed claims. She then proposes the following operationalisation of procedural objectivity:

Operationalisation of procedural objectivity: In the context of mixed claims procedural objectivity can be operationalised by (i) making underlying value propositions explicit, (ii) checking if these are invariable to disagreement, and (iii) if not, conducting a process of deliberative co-creation.

Her ultimate conclusion, which contains the concrete demands of procedural objectivity she proposes for mixed claims, can thus be summarized as follows:

C3, procedural objectivity through deliberative co-creation: Procedural objectivity, in the sense of (i–iii), should be aspired for mixed claims.

This concludes my reconstruction of Alexandrova’s mixed claims account. For readers to easily understand Alexandrova’s argument and return to it throughout this thesis, the following section contains a short summary of it.

2.5 Argument summary

Alexandrova begins her argument by defining mixed claims as follows:

Mixed claims: “A hypothesis is mixed if and only if:
(1) It is an empirical hypothesis about a putative causal or statistical relation.
(2) At least one of the variables in this hypothesis is defined in a way that presupposes a moral, prudential, political, or aesthetic value judgement about the nature of this variable.” [[Alexandrova, 2018](#), p. 424]

She then sets out to establish the robustness and uniqueness of her notion, making the following claim:

C1, mixed claims as unique and irresolvable: Mixed claims constitute a unique channel of influence of values in science which is not easily resolvable.

She then invokes the dangers of mixed claims, which lends her argument practical relevance and motivates her subsequent search for a mitigation procedure:

C2, need to address the dangers of mixed claims: Mixed claims and their specific nature and dangers need to be addressed.

Having argued that most existing accounts of objectivity or impartiality cannot help to adequately address the dangers of mixed claims, she suggests that mixed claims should follow a distinct operationalisation of “procedural objectivity”.

C3, procedural objectivity through deliberative co-creation:

Procedural objectivity, in the sense of (i) making underlying value propositions explicit, (ii) checking if these are invariable to disagreement, and (iii) if not, conducting a process of deliberative co-creation, should be aspired for mixed claims.

I share Alexandrova’s concern for the practical significance of the phenomena she tries to grasp through the notion of mixed claims and mostly accept her conclusions. However, I see a number of problems with how she sets up and goes through with her argument that reduce its convincingness. I will expand on these problems in the following chapter before presenting an alternative account in the subsequent one.

3

Problems of the mixed claims account

I identified three problems for the mixed claims account which reduce its *prima facie* convincingness.

First, I take issue with the definition of mixed claims. Alexandrova defines a mixed claim as a hypothesis at least one variable of which ‘presupposes a value judgement’. As I will argue, it may not always be clear in practice when it is the case for a variable to presuppose a value judgement. I will develop this point in section 3.1.

Second, and also on the definition of mixed claims, ‘presupposition’ seems irrelevant for the identification of relevant hypotheses. These issues can lead to ambiguities and inefficiencies in the application of mixed claims. This issue will be laid out in section 3.2

Third, Alexandrova argues only sparsely for the moral significance of mixed claims (C2, the dangers of mixed claims) and her mitigating proposal (C3, procedural objectivity through deliberative co-creation). I will defend this view in section 3.3.

On the basis of these three points of critique, I will formulate three desiderata that my alternative proposal should fulfil. My alternative notion should be [1] more *intersubjectively robust* in its extension, [2] *directed at consequences*, and [3] the illustration of the dangers of mixed claims as well as the mitigation proposal of collective deliberation should have *argumentative support* that appeals to strong moral and/or political arguments. I provide these desiderata in section 3.4.

3.1 Definition of mixed claims: presupposing a ‘value judgement’

Recall that Alexandrova defines a mixed claim as a kind of empirical hypothesis which contains at least one variable that presupposes a ‘value judgement’. I will argue that basing her definition on the notion of a value judgement causes problems for the convincingness of her overall argument. To understand why this is the case we need to ask ourselves: what *is* a value judgement?

A judgement can be understood as a mental act directed at forming a belief about the truth value of a proposition [Hanna, 2022]. I might, for example, read the proposition ‘It’s raining today in Rotterdam’ and make a judgement about whether I believe this statement to be true or not. One can further categorize judgements into *value* judgements and *factual* judgements. While value judgements are judgements about value propositions, factual judgements are judgements about factual propositions. I thus suggest in the most precise sense Alexandrova’s formulation of a variable of a hypothesis to presuppose a value judgement means that this variable is *defined*, partly or solely, in terms of a value *proposition* and that the truth value of the hypothesis depends on the truth value of this value proposition. Then, accepting the hypothesis presupposes the acceptance of the value proposition through the mental act of judgement.

Take again the hypothesis ‘A progressive income tax reduces economic inequality’. For the variable ‘economic inequality’ to be meaningful within this empirical hypothesis we need to endorse a proposition such as ‘Economic inequality is measured and understood as inequality in disposable annual household income’. If we accept that this proposition is a value proposition and take a stance towards its truth value we make a value judgement.

How then do factual and value propositions differ? It seems intuitive that there is *some* difference between phrases such as ‘It’s raining today’ and others like ‘Rotterdam is ugly when it rains’. Yet it is not straightforward what this difference consists in precisely. It will be useful to distinguish between two kinds of approaches to this question:

(1) A first set of accounts claims that there is a **metaphysical dichotomy** between judgements about value and judgements about fact which is rooted in a dichotomy between fact and value propositions.

(2) A second set of accounts claims that there is rather a **conventional distinction** between fact and value judgements which may, for example, be rooted in the function of different judgements within human cognition and deliberation.

While he does not use the exact same labels, this distinction is largely inspired by Hillary Putnam’s [2004] essay “The collapse of the fact/value dichotomy”.

The remainder of this sub-chapter will be organized as follows: In 3.1.1 I will illustrate the implausibility of supporting a metaphysical interpretation of

the term ‘value judgement’. In 3.1.2 I will illustrate the *identification problem* of the conventional interpretation of the term ‘value judgement’.

3.1.1 Implausibility of the metaphysical interpretation

On the metaphysical interpretation, one believes that there is a sharp dichotomy between statements of fact and value that is rooted in some absolute ontological difference between the two. This does not yet commit one to any particular metaphysics about the nature of fact and value propositions. It means simply that one believes that there is *something* on the level of metaphysics by which we could – if only in theory – distinguish between statements of fact and statements of value.

At least implicitly believing in such a dichotomy was common throughout the history of philosophy. As Putnam [2004, pp. 14-15] writes it is, for example, implicit in ‘Hume’s Law’ which states that one cannot infer a value judgement from a factual judgement (‘you cannot infer an ought from an is’). If this is understood, as is commonly done, as a universal law, it is clear that in order for it to hold there needs to be a metaphysically grounded property that sets apart the ‘oughts’ from the ‘ises’. But it was not until the 20th century that the fact/value dichotomy found its most explicit supporters amongst the Logical Positivists. For philosophers such as Rudolf Carnap and Ludwig Wittgenstein, the metaphysical basis of the fact/value dichotomy was fairly straightforward: statements of fact empirically correspond to facts and are thus meaningful and can be true or false. Value judgements, on the other hand, do not respond to facts, cannot have a truth value and are thus meaningless [Putnam, 2004, pp. 7–27].

The apogee of the metaphysically founded fact/value dichotomy was followed by a stark decline in popularity from which it has not recovered since. Different writers, amongst them Quine [1976], and, more recently, Putnam [2004], questioned it extensively and convincingly. Their arguments show, in different ways, how even such propositions that previous philosophers deem as entirely factual or conceptual necessarily depend on some form of value judgement. Moreover, they showed that no previously made metaphysically grounded criterion for the demarcation between fact and value judgements is robust and plausible.

It would lead too far to go into great detail about all these accounts. However, I want to refer to one argument by Hillary Putnam [2004, pp. 34–43] which illustrates the “entanglement of fact and value” for thick concepts such as ‘well-being’. As I have argued in section 2.1, while mixed claims that do not contain a thick concept are theoretically conceivable, those that are relevant in the empirical sciences – and thus for Alexandrova’s argument – do. Social scientists do not usually develop hypotheses on what is ‘good’ or ‘right’ alone. Instead, they investigate concepts such as well-being or sustainability that are more widely agreed to carry a descriptive and measurable component. For showing that a metaphysical dichotomy between value judgements and fac-

tual judgements is implausible for mixed claims it thus suffices to show that the dichotomy is implausible for thick concepts.

As an example of a thick concept, Putnam uses the word ‘cruel’ which he argues poses a challenge for the fact/value dichotomy:

I cannot simply say “He is a very cruel person and a good man,” and be understood. Yet “cruel” can also be used purely descriptively as when a historian writes that a certain monarch was exceptionally cruel, or that the cruelties of the regime provoked a number of rebellions. “Cruel” simply ignores the supposed fact/value dichotomy and cheerfully allows itself to be used sometimes for a normative purpose and sometimes as a descriptive term. [Putnam, 2004, pp. 34 -35]

He subsequently sets out to debunk three kinds of strategies that he identifies from the literature in an effort to save the fact/value dichotomy from the challenge of thick concepts:

- [1] Thick concepts are only non-facts.
- [2] Thick concepts are only facts.
- [3] Thick concepts are factorable into facts and non-facts.

He dismisses [1] more or less directly as a non-starter. Recall from section 2.1 that thick concepts are such that are partly evaluative, partly descriptive. ‘Cruelty’ might be an example of such a concept, but also other concepts such as ‘strength’ or ‘generosity’ fall under the definition of thick concepts. If we were to accept that there is nothing factual at all about thick concepts, we would dismiss the whole of these concepts as a set of judgements that do not have anything to do with the realm of the factual and send it to the domain of the “emotive” and “non-cognitive”. But to regard an adjective such as ‘strong’ as one which does *not at all correspond* to the domain of facts does indeed seem to be counterintuitive. Take the statement ‘Arnold Schwarzenegger is strong’. Most people would agree that a public incidence of Arnold Schwarzenegger bench-pressing 100 kilograms warrants a statement about his strength and that this is due to the observable fact of him being able to press heavy weights [Putnam, 2004, p. 36].

Positions [2] and [3] are the ones Putnam takes more seriously.

To give an example for strategy [2], according to which thick concepts are only facts, Putnam refers to Richard Hare [1981] who he believes brings forward the strongest and most influential account of this sort. He cites the following thought play by Hare [1981, p. 74]: A boy A spits his classroom neighbour B in the face. The teacher walks at A and says ‘This was rude!’. B then turns to A and says ‘I grant you, that was rude.’. The example shows that

it is possible to descriptively verify the correspondence of an act with a thick concept ('rudeness') without being compelled to take an adverse or positive stance towards it. As Hare argues, the value judgment that is typically ascribed to judging an act 'rude' is not part of the judgement itself but of an additional "motivational act" of condemnation or recognition. In the classroom example, while there is agreement on the act being descriptively rude, the teacher and B express different motivational acts when rejecting and honouring the act, respectively. This act, according to Hare, is not part of the linguistic judgement of the spitting to be rude but a primary subjective disposition that is, at the moment of happening, beyond conscious control. It is an emotive, nonverbal act rather than a reflective judgement. The value judgement is thus simply not a part of a thick concept, or so Hare argues.

Putnam [2004] cites Elisabeth Anderson [1995, p. 102] to show why this take on value judgements is implausible. As she argues, one purpose of value judgements is to track when one's motivational states do not comply with one's value judgements. For example, due to apathy one sometimes fails to be in the motivational states one reflectively desires to be good. This example prohibits value judgements from being mere emotive acts. They need instead to be "reflectively endorsable" which is not necessarily the case for an affective motivational state. Thus, value judgements cannot be regarded as solely depending on motivational states.

Strategy [3] tries to establish that thick concepts are factorable into a factual and a non-factual part. As Putnam [2004, p. 38] argues this strategy fails due to the impossibility of pinning down what the descriptive part of a thick concept is without using the same concept or a synonym. Take the word 'pleasant'. One may say that the descriptive extension of 'pleasant' is simply 'causing positive feelings'. But then the word 'positive' is itself not entirely descriptive. And it is also not the case that 'causing positive feelings' is always 'pleasant'. For example, a Rotterdammer teenager might experience great amounts of positive feelings when taking ecstasy for the first time, but decides upon his subsequent emotional hangover that taking drugs was not such a pleasant experience after all.

Putnam [2004] thus shows, I think quite convincingly, that maintaining a strict metaphysical dichotomy between fact and value judgements for thick concepts is implausible. What is the takeaway from this discussion for Alexandrova's mixed claims?

As argued in section 2.1, the sort of mixed claims that are relevant for the empirical sciences and science-based policy are those which contain thick concepts. To maintain a metaphysical fact/value dichotomy for such thick concepts is, as just illustrated, implausible. Thus, if the term value judgement is interpreted metaphysically, Alexandrova's definition would assume a conception of value judgements that is, according to the arguments just displayed, implausible and contrary to the contemporary consensus in philosophy of science and language. Alternatively, she might agree on the entanglement of facts and val-

ues. But without further qualification, her notion of mixed claims then becomes useless for on a metaphysical level *all* empirical hypotheses contain a variable which presupposes a value judgement. Thus all empirical hypotheses would be mixed claims.

Both alternatives seem unattractive to Alexandrova. On the first view, many readers would be compelled to reject her conclusions as they regard its foundational premise, the definition of mixed claims, as false. On the second view, the notion of mixed claims becomes useless as it simply covers all empirical hypotheses.

Alexandrova does not specify her preferred interpretation of the term ‘value judgement’. Yet I do not believe that she is in fact a supporter of a metaphysical fact/value dichotomy. As a distinguished philosopher of science, she is not likely to be ignorant about existing arguments which put the fact/value dichotomy into question. It seems plausible that if she had decided to make an assumption that goes so much against the consensus of her discipline, she would have made sure to indicate and defend this assumption properly. Neither in her paper nor elsewhere in her writings is such a defence to be found. On the other hand, it does also not seem reasonable from her point of view to accept the consequence of all hypotheses being mixed claims.

I thus assume that her favoured interpretation of the term ‘value judgement’ is somewhat closer to the philosophical consensus which maintains more of a conventional distinction between fact and value judgements. I will in the following expand on this understanding.

3.1.2 Conventional interpretation and the identification problem

Even if one rejects a strict metaphysically grounded dichotomy between value judgements (and propositions) and factual judgements (and propositions), one may still maintain that a *useful conventional distinction* between these two sets of judgements can be made. As I will argue, on this view another problem arises through invoking the term ‘value judgement’ which I call the *identification problem*.

Conventional distinctions are different from metaphysical dichotomies. Most importantly, what sets the former apart from the latter is that they do not hold universally, so “[...] we are not surprised if they do not always apply” [Putnam, 2004, p. 11]. The reason for which conventional distinctions are nevertheless used is that someone sees a cognitive and/or communicative benefit in *roughly distinguishing* one set of objects or ideas from another set. The term ‘value judgement’ is thus part of the mixed claims account because Alexandrova believes it can serve a certain communicative purpose. I will now ask what this communicative purpose consists in and how well it does in serving it.

The term ‘value judgement’ has different but related uses within Alexan-

drova’s argument. On a basic level, the notion of ‘value judgement’ in the definition of mixed claims serves the purpose of *identification*. Her definition of mixed claims crucially relies on the term ‘value judgement’ to identify a certain set of hypotheses, namely those with at least one variable that presupposes a value judgement. Second, invoking the notion of a ‘value judgement’ Alexandrova [2018] underscores the *moral relevance* of the hypotheses thereby identified. They are to be considered morally relevant precisely due to presupposing a value judgement. To make this more tangible, consider the following example:

‘Handing out recreational drugs increases people’s well-being.’

Alexandrova first relies on the term ‘value judgement’ to categorize this statement as a mixed claim. One of the variables it includes, namely ‘well-being’, presupposes a value judgement in its definition which makes it mixed. It is then precisely because it is defined through a value judgement that it is morally relevant. Depending on different conceptions of well-being, scientists and policymakers might reject or accept the hypothesis and act accordingly. Thereby they end up potentially imposing value judgements on citizens that they do not share.

For example, a hedonist policymaker, defining well-being in terms of momentary pleasure, might accept the hypothesis after investigating the mood of a group of Rotterdam students on a Friday night. On the other hand, a virtue ethicist, adopting the richer conception of well-being as human flourishing, lobbies against handing out recreational drugs after having heard from the same students that their hangover prevented them from cultivating their virtues in the aftermath of this Friday night. As it happens to be, the grand majority of Rotterdammers are hedonists except this one virtue-ethicist policymaker. When King’s Day¹ arrives, in a genuine wish to increase the well-being of Rotterdammers, the policy maker hands out a copy of Aristotle’s *Nicomachean Ethics* to each citizen. Yet the citizens are disappointed about having the policymaker’s virtue-ethicist value judgement imposed on them through the mixed claim. They would rather have received free beers instead.

From identifying a distinct set of hypotheses and underscoring their moral relevance the term ‘value judgement’ justifies Alexandrova’s practical suggestion of addressing mixed claims in a deliberative forum. While she does not make this explicit, the fact that a mixed claim is defined partly in terms of a value judgement legitimises the proposal of having ‘the relevant parties’ deliberate about the content of such a hypothesis. Otherwise, if a statement was seen by everyone to be fully descriptive and empirically verifiable, there would hardly be any point in debating its content.

¹King’s Day is a peculiar Dutch holiday where, next to celebrating the politically irrelevant King’s birthday, the consumption of recreational drugs and electronic music are at the centre of general attention.

This entails that the practical use of the term ‘value judgement’ hinges on the extent to which the ‘relevant parties’ agree on the extension of the term and thus the subjects of deliberation. Imagine that the given phrase ‘Handing out recreational drugs increases people’s well-being’ is to be deliberated in a public forum. For this to work well, it is necessary that the members of this forum agree on this claim to in fact presuppose a value judgement. The conventional term ‘value judgement’ would thus serve its practical purpose best if, on the basis of invoking it, all members of the relevant parties could thereby uncontroversially identify every practically relevant mixed claim.

Now, for a metaphysical dichotomy, this purpose would be easily fulfilled as it holds universally. However, a conventional distinction does not hold universally. Furthermore, whether a proposition counts as a value judgement is not something that can be assessed according to strong intersubjectively known standards. As has become clear from my discussion about the fact-value dichotomy in 3.1.1, it is not fully clear how one would distinguish a value proposition from a factual proposition. Instead, whether a proposition counts as a value proposition depends strongly on subjective linguistic intuition.

I have argued that the utility of the term ‘value judgement’ in Alexandrova’s argument depends on whether the ‘relevant parties’ agree on the extension of the term and that the extension of the term depends strongly on subjective linguistic intuition. Thus, the utility of invoking the term ‘value judgement’ depends on the degree to which the linguistic intuitions of the ‘relevant parties’ on the extension of the term ‘value judgement’ match and capture all morally relevant hypotheses. As I will argue, there are two reasons for which the relevant parties might disagree about the extension of the term.

First, members of the parties might not agree as to what a value judgement is simply because they are in genuine disagreement about the meaning of the term ‘value judgement’. As [Beckerman \[2017, p. 18\]](#) writes “[u]nfortunately, there does not seem to be any universal agreement among philosophers about what the term really means.” For example, [Harsanyi \[1991, p. 702\]](#), in his discussion about value judgements in economics, defines them as “[...] judgements of approval or disapproval claiming objective validity.” This is rather different from, for instance, [Kowarsch \[2016, p. 186\]](#), who states that “A value judgement in the sciences provides some kind of normative orientation (meaning, direction, etc.) for human action, thinking or interest towards something”. Again [Beckerman \[2017, p. 18\]](#) takes “the term ‘value judgement’ to indicate judgements that do not depend on factual observation or evidence in the way that, say, positive propositions depend.”

Just from these definitions it becomes obvious that the question about what qualifies as a value judgement and makes a mixed claim can be subject to substantial disagreement. Say in the above example the virtue-ethicists policymaker is also a supporter of the given definition of the term ‘value judgement’ by [Harsanyi \[1991\]](#). After King’s Day, the policymaker is approached by a group of citizens in a motion to discuss the contents of his hypotheses. While she is

also a supporter of Alexandrova's mixed claims account, he shows reluctance to accept his hypothesis to be a mixed claim. In the vein of Harsanyi's definition, he states, 'Never would I have assumed my judgements claim objective validity! So this is not a mixed claim.'

Alexandrova does not specify what exactly she believes a value judgement to be. Granted, she does specify the kinds of values she regards as relevant, namely non-cognitive values. Yet, this does not give us guidance as to how we can identify a value *judgement* from a hypothesis. Furthermore, the cognitive/non-cognitive divide has itself been philosophically disputed and is at best blurry [Longino, 1996]. Thus, the focus on non-cognitive values does not necessarily help in the identification of mixed claims.

Yet for her mixed claims account and especially her practical suggestion of a public-scientific debate to work smoothly it is necessary that 'the relevant parties' are in sufficient agreement about this question. Already the group of the relevant parties which is constituted by philosophers could vastly disagree about it. While there is little evidence on what other groups of society think about this issue I see no reason why non-philosophers should have an easier time assessing whether a hypothesis presupposes a value judgement.

The second reason for which 'the relevant parties' might disagree about the extension of the term 'value judgement' is due to the fact that the members of one party, namely scientists, have a *prima facie* interest to argue against scientific hypotheses to presuppose value judgements.

Imagine a parliamentary debate intended to decide what would be a just level of unemployment benefits. Different parties will have different opinions on this issue. Yet their disagreement will quite likely not rest on a disagreement about what counts as factual and what counts as value judgement in their debate. While they will likely focus on different kinds of evidence and even interpret it differently, they will nonetheless acknowledge that when they bring forward arguments in support of their positions, this is based on some kind of value judgement. Political representatives acknowledge that their debate proceeds, at least to some extent, on the basis of value judgements. It is within the self-conception of participants of a political debate that the subjects of their deliberation are not primarily factual but value judgements on what 'ought to be done'.

Yet when members of the public approach scientists with the motivation of deliberating about the content of mixed claims the story looks differently. Members of the public, politicians, or philosophers continue to have the self-conception of being legitimately deliberating on the basis of value judgements. But they intend to deliberate with a group of people the self-conception of which is to a large extent that of contributing 'what is'. The legitimacy of scientists to contribute to a policy-making process can in a democracy not be a legitimacy to make value judgements. It is instead a legitimacy to contribute a neutral, factual basis to the debate. Thus, if we assume that scientists want to be heard

within policy debates, they have an interest that their judgements are deemed factual and not value judgements.

I do not want to argue that scientists are generally reluctant to openly acknowledge and debate the value-ladenness of their hypotheses. Nevertheless, I regard it as plausible that this is at least sometimes a problem which makes the mixed claims account suffer in practice.

In sum, both due to the meaning of the term ‘value judgement’ being conceptually unclear and scientists having a *prima facie* interest not to acknowledge value judgements it can be the case that ‘the relevant parties’ disagree about what qualifies as a mixed claim. This may become problematic in practice for Alexandrova’s suggestion of setting up a deliberative platform as it is necessary for the participants to be in agreement about this basic question.

I have presented one problem of defining mixed claims in terms of value judgements which I have called the *identification problem*. I will now lead over to another problem which arises through the definition resting on the term ‘presuppose’ in ‘presupposing value judgements’.

3.2 Definition of mixed claims: ‘presupposing’ a value judgement

Even if a scientific hypothesis does not appear to include a variable which presupposes a value judgement, there can be non-epistemic implications of using this variable due to the specific way in which it is defined. I call this the *problem of unrecognized non-epistemic implications*.

As explained in 3.1, it is the practical purpose of Alexandrova’s account to point to a kind of scientific hypothesis that is of special moral relevance. They are of moral relevance because, as she argues, they lead to the dangers of ‘value imposition’ and ‘value inattention’ due to being defined in terms of a variable that presupposes a value judgement.

It is then part of Alexandrova’s own motivation for going through with her arguments to say that ‘mixed claims are different’ from other non-epistemically relevant phenomena of science. The relevance of invoking the notion of mixed claims obtains in part from them constituting a unique channel through which non-epistemic factors figure into science. What distinguishes the channel of mixed claims is that the non-epistemic influence takes place on the level of scientific conceptualisation. It is due to the way in which a variable within a mixed claim is defined that it acts non-epistemically.

In my view, it is enough for a notion like mixed claims to be legitimately established to define mixed claims as such hypotheses that have a non-epistemic effect due to the way in which one of their variables is defined. I do conversely not regard it as necessary to include the phrase ‘presuppose a value judgement’

into the definition of mixed claims. But not only is it unnecessary, it may also be harmful to our dealing with them as a potentially problematic scientific phenomenon. This is because the notion of ‘presupposition’ of a value judgement misplaces the emphasis on something that is predetermined within the concept.

As we have seen, what and what does not count as a value judgement depends on the extent to which the ‘relevant parties’ agree on the extension of the term. This means that if no one recognizes a judgement as a value judgement, it is none. However, it may nevertheless be the case that a hypothesis leads to the problems of value imposition and inattention and does so due to the way in which one variable is defined – even if this variable is commonly not seen as ‘presupposing a value judgement’.

Imagine a society. In this society, there is a forum in which members of the public and economists debate about potential mixed claims on a regular basis. On this forum, one day the participants set out to investigate the state economists’ investigations of the labour market. They refer to the definition of ‘labour’ as paid labour which can be measured in monetary units. The members of the group do realise that this is a quite specific view of the concept of labour, but as economists communicate that it is just the phenomenon of *paid* labour that they are investigating, none of the members of the group believes that this conception is defined in terms of a value judgement. It simply targets one particular notion of labour.

Meanwhile, a majority of citizens affirm the proposition ‘women should not be disadvantaged relative to men’ which most people would agree to be a value proposition. One day, an unforeseen pandemic hits society, which is consequently hit by a public health crisis that necessitates far-reaching curfews. Economic policy advisors, who guide the compensatory policy-making for curfews, base their suggestions primarily on their existing research and suggest paying compensation for unreceived wages. They thereby neglect the labour-related burdens for unpaid workers (disproportionately many of whom are women) due to curfews. Thus women are disadvantaged relative to men due to the notion of ‘paid labour’ being employed to compensate for labour-related damages.

This example is supposed to illustrate how the way in which some variable in a hypothesis is specified can lead to value inattention even if this variable is not recognized as depending on a value judgement. Admittedly, this is an unrealistic scenario. In a real-world deliberative process on this very issue someone would hopefully suspect that the economic definition of ‘paid labour’ presupposes a value judgement when it is, as is to be expected, equated with ‘labour’.

Yet what this example is supposed to illustrate is that whether something is deemed as presupposing a value judgement is based on the context and framing of the debate around it. In the meantime, whether it ‘presupposes’ a value judgement seems to be an irrelevant question. What is relevant instead is whether the way in which a variable in a scientific hypothesis is defined potentially leads to undesirable consequences when this hypothesis is applied to guide public policy.

I have presented two *prima facie* drawbacks of Alexandrova’s definition of mixed claims. I will in the following chapter present one more point of critique for her account in which I argue that the moral foundation for her suggestions concerning “procedural objectivity” (C3) is sparse, stemming partly from a weak moral conceptualisation of the “dangers” of mixed claims (C2).

3.3 C2 and C3: lack of argumentative support

Recall that Alexandrova starts off by arguing that mixed claims bring with them the dangers of “value inattention” and “value imposition” and that these dangers need to be addressed (C2). She then discards existing accounts of objectivity and impartiality as being unable to deal with these dangers and calls for “procedural objectivity” according to which mixed claims need to undergo a process to ensure that their value commitments have undergone “appropriate social control” and are “resistant to hijacking by specific individuals”. This happens before she proceeds to argue that such a process is given by (i) unearthing value propositions in scientific hypotheses, (ii) checking whether science is invariant to disagreement about value judgements and (iii) if this is not the case, initiating a process of deliberative co-production of mixed claims between scientists, members of the public, and policymakers (iii). Her ultimate conclusion (C3) entails that these measures should be taken.

I believe that Alexandrova is right in pointing out the dangers of mixed claims and in her proposal of striving for procedural objectivity through deliberatively co-creating necessarily value-laden scientific hypotheses. Yet, one who has hitherto been sceptical of proposals to democratize the sciences might not be so easily convinced by her argument.

First, her argument on the ‘dangers’ of mixed claims remains rather sparse. Alexandrova states that value imposition and value inattention might be the consequences of invoking mixed claims and that these constitute dangers. However, she does not specify what precisely it is that makes these consequences dangerous.

Second, Alexandrova convincingly argues that most accounts of impartiality and objectivity do not work out for mixed claims. However, from rejecting these accounts she assumes the suitability of procedural objectivity and its operationalisation through deliberative co-creation more or less *ad hoc*. In other words, while she successfully rejects other accounts, she gives little positive reasons to convince us of the suitability of procedural objectivity and the specific operationalisation she proposes. At this point, doing so would also have been difficult precisely due to the earlier lack of argumentation on the dangers of mixed claims. It is difficult to convincingly propose a cure for a disease that is characterized so sparsely.

Third, as procedural objectivity lacks argumentative support her subse-

quently proposed measures (i) – (iii) are automatically undersupported too as they are inferred from it.

Fourth, yet even if we accepted the desideratum of procedural objectivity Alexandrova [2018] there remains too little argument on why (i) – (iii) constitutes a procedurally objective handling of mixed claims. Especially proposal (iii) deserves scrutiny. Alexandrova suggests that one should consult the ‘relevant parties’ within a process of deliberative co-creation of mixed claims. For her example of well-being, these parties are (I) scholars on the theory of well-being (philosophers and the like), (II) those tasked with the measurement of well-being, (III) well-being policymakers, and (IV) a representative sample of the subjects who are likely affected by a chosen measure of well-being. Alexandrova [2018, p. 439] suggests a combination of “deliberative polling and systematic participation of the public in science” but remains vague on the details of this process. Despite its vague specification various components of the proposed deliberative platform call for proper argumentative support.

She leaves unexplained why it is a random set of members of the *public* instead of political representatives who should participate in a deliberative setting. Then, she does not explain why *deliberation* is necessary to achieve procedural objectivity. Furthermore, we may ask why policymakers and scientists are still needed in this process. Granted, on the last point Alexandrova [2018] mentions that scientists possess “normative knowledge” in virtue of their epistemic knowledge on a subject matter. However, she does not specify precisely what this normative knowledge consists in and how exactly it emerges from epistemic knowledge.

In sum, a sceptic might thus be left to ask various questions to which her arguments provide no satisfactory answer: What exactly is the problem with mixed claims? Why should we strive for procedural objectivity when trying to mitigate these dangers? Why is ‘procedural objectivity’ operationalised through deliberation between members of the public, scientists, and well-being policymakers?

I illustrated three problems for Alexandrova’s mixed claims account. I do not see these as problems which bring her argument to a downright fall, but which weaken its *prima facie* convincingness. In the following sub-chapter, I will infer three desiderata for an alternative account from these problems before proposing such an alternative in chapter 4.

3.4 Desiderata

To recap once again, the three problems of mixed claims I identified are:

- On the definition of mixed claims: Alexandrova defines a mixed claim as a hypothesis at least one variable of which ‘presupposes a value judgement’.

It is not always clear when it is the case for a variable to presuppose a value judgement (section 3.1).

- On the definition of mixed claims: ‘Presupposition’ seems irrelevant for the identification of the relevant concepts. These issues can lead to ambiguities and inefficiencies in the application of mixed claims (section 3.2).
- C2 and C3: Alexandrova lends little argumentative support to the moral significance of mixed claims and her mitigating proposal (section 3.3).

I translate these problems into three desiderata that I strive to satisfy with my alternative account.

- [1] **Intersubjectively robust:** A novel definition should in its extension be more intersubjectively robust than one that rests on the term ‘value judgement’.
- [2] **Directed at consequences:** A novel notion should be directed at its consequences instead of relying on ‘presupposition’.
- [3] **Argumentative support:** A replacing account should do more work both in motivating the moral significance of the captured notion and in supporting the corrective measure of deliberative co-creation between scientists, policymakers and the public.

In the following chapter, I will propose a novel notion that can be put in place of mixed claims which I call ‘representation-affecting claims’.

4

Representation-affecting claims

In the present chapter, I will introduce a novel notion called *representation-affecting claims* which can serve as an alternative for mixed claims. Representation-affecting claims are defined as follows:

Representation-affecting claim: A representation-affecting claim is (1) an empirical hypothesis about a putative causal or statistical relation (2) at least one variable of which is defined in a way that (3) makes a lack of representation of legitimate and relevant interests in a process of science-based policy-making more likely.

I will first explain the relevant parts of my definition in section 4.1. Parts (1) and (2) of the definition are essentially identical to the definition of mixed claims. It is still the intention of my account to grasp a type of scientific hypothesis (1) which have certain characteristics due to the way in which (at least) one of their variables is defined (2). Everything up to this part of the definition of mixed claims I regard as unproblematic and rather useful. The novel part of representation-affecting claims, and thus the one that requires further explanation, is clause (3).

Then, to make my definition more tangible, I will apply it to an example in section 4.2.

Finally, in 4.3 I will argue why I believe representation of legitimate and relevant interest to be a relevant concern in discussions about the role of the sciences in democratic policy-making. When scientists advise policymakers, they may influence which of citizens' interests are taken into account in the political discourse. This is worrying, I argue, as scientists thereby adopt a role they are not democratically legitimised to adopt. Representation-affecting

claims are one way in which scientists may condition a neglect of legitimate and relevant interests. This is why they deserve attention.

My proposal thus grasps the same phenomena as the mixed claims account, but does so by reference to its political consequences in a representative democracy. I provide this account for three reasons.

First, I believe that representation-affecting claims fare better on the issues I previously argued to persist for the mixed claims account. This I will try to show in chapter 5.

Second, while I do not *per se* regard this as a problem for the mixed claims account, I hope that a merit of my account is that it is phrased by reference to an institutionally enacted democratic system – representative democracy – and leaves out philosophy-of-science terms such as ‘values’ or ‘objectivity’. This might provide more intuitive access to those who are unacquainted with philosophy of science, but more so with representative democracy. This could, for example, be the case for politicians. Furthermore, my account thereby integrates the practical consequence of the captured hypotheses into its definition, which directly communicates its practical significance. Also, my argument thereby circumvents theoretical disagreement on the meaning and relevance of different philosophy of science concepts. Perhaps, for some philosophers of science, the consequence of neglected interests seems like a more uncontroversial worry than the presupposition of a value judgement.

Third, my argument may be seen simply as an additional one that joins the mixed claims account in underscoring the practical relevance of a particular type of scientific hypothesis.

4.1 The definition explained

The present and subsequent sections are only intended to make precise what I mean when I refer to the representation of legitimate and relevant interests. Then, in 4.3, I will argue why I chose this notion and consider it relevant for debates surrounding the political influence of the sciences.

With the term ‘interest’ I deliberately chose a broad term. An interest can be a simple self-directed need or preference. However, one may also have broader interests which extend beyond self-interest. For example, one may have an interest in a certain value like equality to be realised politically. Or, one may belong to a certain social group such as women or migrants and be interested in the standpoint of this group to be catered to. What then does it mean for an interest to be ‘represented’ and when do I regard an interest as ‘legitimate’ and ‘relevant’?

4.1.1 Representation of interests

To argue what it means for an interest to be represented I rely on “The Concept of Representation” by Pitkin [1967]. Pitkin’s work remains influential as a starting point for many contemporary discussions on representation [Dovi, 2018]. In her book, she distinguishes different meanings of the concept of representation. Of primary importance for this thesis is Pitkin’s “substantive representation”, which refers to the extent to which an electorate’s interests are represented by elected representatives. Substantive representation can be distinguished from “descriptive representation” which denotes the extent to which a committee demographically resembles its electorate.

An interest is represented if it is “made present” and taken seriously within a scientific analysis and policy discourse. Say, for example, a government, together with its economic policy advisors, plans to take measures to alleviate burdens on society from increasing rates of inflation. In order to do this, advising economists need to inform the government of the inflation rates present in different product categories. When, for example, economists report on everything but gasoline prices, we may say that the interests of middle-aged male joy riders are not *scientifically* represented. When subsequently, in part due to this lack of scientific representation, the political discussion about policy measures goes about everything but gasoline prices, the interests of these middle-aged men are not *politically* represented.

It is important to note representation of interests in a discourse does not entail that a political *decision* is perfectly representative. Going back to the previous example, a lack of representation of middle-aged men’s interests would, in the sense of my definition, *not* be present if gasoline prices were analyzed scientifically and discussed politically, but nevertheless no policy in that direction was taken. When I refer to representation of interests in science-based policy, I talk about their presence in scientific analysis and political debate – not in political decisions.

I furthermore constrain interests to those which are ‘legitimate’ and ‘relevant’. What do I mean thereby?

4.1.2 Legitimate and relevant interests

I will first explain what it means for an interest to be legitimate. For an interest to be legitimate it needs to fulfil two types of requirements, two content requirements (a,b) and one personal requirement (c).

On content, an interest towards an issue needs to fulfil a minimal degree of epistemic coherence with the existing body of research on this issue (a). On many issues this does still allow for a wide array of perspectives. I share with pragmatists, feminist standpoint theorists, and perspectivists the view that knowledge is situated in a historical, cultural, and personal context. In

this sense, while not being committed to metaphysical anti-realism, I regard it as plausible to always regard knowledge as constructed. Differently put, how we grasp reality is often not epistemically forced and always contingent on our subjective perspective in assessing it [Ashton, 2020, Brown, 2019].

However, some views and resulting interests are nevertheless epistemically non-sensical. For example, if a conspiracy theorist believes in the non-existence of climate change, which goes contrary to all scientific evidence and expert opinion, this is not a view that I regard as in need of representation. Thus, for an interest to be legitimate it needs to be epistemically reasonable in the sense of being minimally coherent with the existing body of research.

Second, still on content, some interests may be illegitimate for non-epistemic reasons (b). For example, some interests may be racist and thus violate basic human rights. However, this content restriction should not lead to the suppression of minority positions. Rather, it should serve to exclude those kinds of interests from the political and scientific discourse that anyway count as illegitimate in most liberal democracies on the basis of constitutional law.

Lastly, interests need to fulfil a personal criterion according to which only the interests of those individuals matter which are affected by a representation-affecting claim when it is used in a process of science-based policy-making (c). I consider it reasonable to adopt a lenient interpretation of what it means for a person to be affected by a representation-affecting claim. For example, if a representation-affecting claim leads to tax money being invested in favour of group *A* while it could on another interpretation also have been invested in favour of group *B*, I would regard *B* as affected by this decision. I thus suggest that only those interests count as *irrelevant* according to the personal criterion, for which it does not matter in any sense how a policy-relevant representation-affecting claim is phrased.

On relevance, I regard an interest as relevant as long as it is supported by a sufficiently large fraction of affected individuals and/or cannot be almost completely reduced to other interests. This relevance criterion is meant to put an extremely minimal threshold on the selection of interests. It is intended solely at ensuring the practical applicability of the concept of representation-affecting claims and should only be applied for this purpose after having worked hard to admit as many legitimate interests as possible. The relevance criterion would be misconceived if it was used to intentionally exclude minority interests.

I have explained what I mean by the representation of legitimate and relevant interests. In the following, I will apply the definition of a representation-affecting claim to an example.

4.2 Illustration of representation-affecting claims

Let me invoke a familiar example to further illustrate the notion of representation-affecting claims:

Hypothesis: ‘An increase in disposable income leads to an increase in well-being.’

Utilitarianism: Well-being = preference satisfaction

In order for this statement to be a representation-affecting claim we need to verify whether it is an empirical hypothesis. Indeed, it is an empirical hypothesis about the effect of one variable (disposable income) on another (well-being). Next, we need to clarify whether the way in which well-being is defined makes a lack of scientific and political representation of legitimate and relevant interests more likely.

We may first ask ourselves, what could be *legitimate* interests in the definition of well-being? It is not necessary here to go too deep into the philosophy and science of well-being. But take for example two further definitions of well-being:

Aristotelianism: Well-being = human flourishing

Hedonism: Well-being = self-reported momentary happiness

While one might not agree with the relevance or accuracy of these approaches, there are neither substantial epistemic nor non-epistemic reasons for which they should be deemed illegitimate.

Whether they are *relevant* in the sense of being shared by a sufficient number of individuals can ultimately be answered only empirically, but one might well assume that in most contexts a decent number of concerned individuals support some notion of Aristotelianism or utilitarianism. They are furthermore relevant in the sense of being non-reducible to each other. It needs no further explanation to understand why a definition that rests on a virtue ethic theory of human flourishing is not the same as one that demands the satisfaction of material preferences.

Finally, does invoking the given statement under the welfarist definition of well-being make a lack of scientific and political representation of these other relevant interests more likely?

On the level of science, this question can be answered easily. Imagine a context of science-informed policy-making intended to redesign high school curricula in a way that increases the lifetime well-being of pupils. When the science that informs this process is based only on a utilitarian conception of well-being, it, by definition, lacks representation of other legitimate and relevant interests.

Whether this lack of representation will ultimately lead to a lack of representation of those interests in the political debates and decisions is on a different page and can only be answered empirically. It is of course possible that political representatives respect those interests regardless of their absence in scientific information. However, the suspicion is warranted that the political importance of these neglected interests is likely to be higher in a situation in which they are scientifically represented as in the counterfactual in which they are not. Applied to the example, imagine that the expert group advising the educational committee on a high school reform consists solely of economists and proposes only measures which maximize students' future employability and thus capability to satisfy their material preferences. It seems likely that other factors, which are relevant according to other conceptions of well-being, such as the flourishing as a self-determined citizen, are to a lesser degree represented due to their lack of representation within science.

I have introduced and explained the notion of a representation-affecting claim. In the following section, I will argue why I chose to base my definition on this notion. To do so I will venture into a discussion about what I believe to be the legitimate role of science in contributing to policy-making in a representative democracy.

4.3 Why representation of legitimate and relevant interests?

With representation-affecting claims I am suggesting an alternative definition for what Alexandrova calls mixed claims that approaches the same phenomenon from a different angle. My definition rests on the political implications of using these scientific hypotheses for the representation of legitimate and relevant interests. As explained at the beginning of this chapter, next to reacting to the problems of the mixed claims account, my motivation is to develop an account in which the political relevance of the targeted hypotheses comes more to the fore by being natively integrated into its definition. In the present section, I want to make concrete why I believe we should care about the effect that scientists can have on the representation of legitimate and relevant interests in science-based policy-making. In 4.3.1, I will focus on the representation of interests. In 4.3.2, I will justify the legitimacy and relevance criterion.

4.3.1 Representation of Interests

To illustrate the significance of the representation of interests requires me to lay out my view of the legitimate role of the sciences in democratic policy-making. The following quotation from "Against Method" by Paul Feyerabend serves as an introduction to this:

“In a democracy scientific institutions, research programmes, and suggestions must therefore be subjected to public control, there must be a separation of state and science just as there is a separation between state and religious institutions, and science should be taught as one view among many and not as the one and only road to truth and reality.” [Feyerabend, 1993, p. viii]

When Feyerabend writes that science should not be taught as ‘the only road to truth and reality’ he says so out of a conviction that science is not a fully rational and infallible enterprise. Science does not accumulate more and more universal truths as if it followed a predetermined trajectory. Instead, in the way in which scientists set a scientific agenda and in their methodological decisions, they make epistemically unforced decisions. This thought emerges not just from the writings of Feyerabend, but from many of the most important philosophers of science of the 20th century. Quine [1976] points to it in “The Two Dogmas of Empiricism” when arguing that all of scientific theories are necessarily underdetermined by evidence. Theory choice is thus not determined solely by correspondence to truth. Also Kuhn [1970] makes this claim in “The Structure of Scientific Revolutions” according to which there is always an irrational component to the choice of scientific paradigms, moments of crisis, and scientific revolutions. More recently, Giere [2019] argued in “Scientific Perspectivism” that scientific models are always contingent on the historical and cultural perspective of the inquisitor.

While much of what scientists do and how they do it is not epistemically forced, their work has a substantial influence on political debates. Modern-day democratic governments crucially rely on the sciences to aid them in complex policy questions. For example, when a government discusses climate adaptation policy, wants to react to a global pandemic, or assist citizens in coping with high inflation rates, it requires the help of scientists to be able to adequately assess how these developments play out.

In the above quote, Feyertag calls for the ‘separation of state and sciences’. As governments crucially rely on the sciences to make informed decisions, this ‘separation’ should not be interpreted as a complete lack of communication or independence between the government and the sciences. The sciences certainly have an important and legitimate role to play in contributing to policy-making. However, to call for the ‘separation of state and sciences’ makes sense with regard to the tasks that either of them is legitimised to take on. I hold that the sciences are supposed to provide a factual basis for politicians on the basis of which they can have a political discussion about different policy options.

This should be made more concrete. What exactly are the types of tasks political representatives are legitimised to fulfil, unlike scientists? To answer this question, we should ask ourselves what it entails to be a political representative and why modern-day democracies are designed as *representative* democracies. According to Urbinati [2006, p. 224] “[...] representation is founded on the prin-

ciple of the division of labour and a functional selection of expertise.” This does not mean, however, that the democratic principle of regarding the general public as the ultimate political sovereign is thereby waived: “Popular sovereignty, understood as an *as if* regulating principle guiding citizens’ political judgment and action, is a central motor for democratizing representation.” [Urbinati, 2006, p. 223, original emphasis]

I regard this as a plausible and commonly accepted take on political representation. The main reason to install a representative government is to enable well-informed political deliberation and decision making to optimally advance the interests of the general public. Unless one lives in a fantasy world of endless brain capacities, time, and resources, it is simply not possible to have well-informed decision-making processes on complex policy issues with all members of society. Consequently, it makes sense to let a smaller set of individuals deliberate and decide *in representation of* the general public. However, citizens only *lend* their political power to representatives while remaining the ultimate sovereign, in the belief that a smaller group of professional politicians will be best equipped to serve their interests. It thus remains the primary task of political representatives to serve the interests of the citizenry.

A crucial prerequisite for serving the interest of the citizenry is for these interests to be *represented* in a political discourse. This also explains why in 4.1 I named representation as “substantive representation” [Pitkin, 1967] as the relevant notion of representation. A citizenry is substantively represented if its interests are made present and taken seriously in a political discourse. “Descriptive representation”, which expresses the demographic resemblance of representatives with the electorate, may positively condition substantive representation.¹ However, I hold that substantive representation is what ultimately matters when assessing the degree of representation of a government. One can hardly regard a government as representative that represents the populace demographically but only caters to elite interests. Conversely, it seems to a larger extent convincing to call a government representative which respects all citizens’ interests albeit not perfectly resembling them demographically.

At this stage, I want to return to Feyertag’s imperative on the ‘separation between science and state’ which I set out to make more concrete. I have argued that it is the central task of political representatives to promote the interests of the populace. A prerequisite for this to work is for interests to be substantively represented in the political discourse. The legitimate task for scientists in a policy-making process then is to make substantive representation possible by providing information on how different policy options affect the satisfaction of citizens’ interests. It is, however, not their legitimate task to decide which interests should be substantively represented or even take political decisions.

Yet this is precisely what may happen when scientists influence public policy. As I have argued, the agenda and content of science are not strictly epistemically

¹I will expand on this thought in 5.3.2.

forced. The phenomenon of mixed or representation-affecting claims is one example of such scientific content for which there are various equally epistemically permissible conceptualisations. This alone is not problematic yet. The problem comes in when we realise that certain ways to set up scientific hypotheses, might lead to some interests being substantively represented, but not others. This describes precisely what occurs with representation-affecting claims as illustrated in the previous section. Thus, by influencing policy processes through the use of representation-affecting claims scientists overstep the border that separates their legitimate scope of interests from that of representative government and its constituents, the people.

I have argued why the representation of interest is a relevant concern in processes of science-based policy-making. Lastly, I want to comment shortly on why I regard it as beneficial to qualify these interests to the set of legitimate and relevant ones.

4.3.2 Legitimate and relevant interests

The general motivation for introducing the conditions of legitimacy and relevance is to ensure the practical applicability of my account but also its coherence with other central principles of (representative) democracies beyond the imperative of substantive representation. I contend that my developments on this criteria are held relatively vague and intuitive, but hope nevertheless that I find the reader's agreement on the relevance of these intuitions. Further research beyond this thesis might fruitfully extend the description and justification of legitimacy and relevance.

As explained in 4.1, an interest is legitimate if it (a) fulfils minimal epistemic standards, (b) does not violate minimal non-epistemic standards, and (c) is held by a person who is somehow affected by a representation-affecting claim. Furthermore, an interest is relevant if it is not almost entirely reducible to other interests and held by a sufficient number of individuals.

While substantive representation is the primary objective of representative government, this should not extend to interests that are epistemically nonsensical by most standards of inquiry. For example, while a worryingly large fraction of people believe in the non-existence of climate change, this is not an interest it makes sense for scientists or politicians to cater to. I take it to be the duty of representatives to precisely *not* substantively represent such as they, due to their privileged access to expert opinion, have the opportunity to be correctly informed about them.

Furthermore, the imperative of substantive representation certainly has its limits where interests cross the boundaries of what it is politically permissible to be interested in (b). Certain rights, for example the right to live or not to be racially discriminated against, rightly are constitutionally protected in liberal democracies. I believe it to be uncontroversial that such interests, which entail

an infringement of such fundamental principles, are not worthy of representation. It is certainly up for further debate, however, where exactly the border should be established that separates legitimate from non-legitimate interests on non-epistemic grounds.

Lastly, it makes sense to represent the interests of people that are at least remotely affected by a representation-affecting claim (c). This means, on the one hand, that political representatives should try to represent *all* interests of citizens affected by a decision. However, I also find it plausible that they need to respect *only* the interests of those affected. Next to increasing the feasibility of the political discourse – to always respect everyone’s interests could be quite cumbersome – I see no plausible argument in favour of respecting the interest of someone who is not at all governed by a decision.

Finally, as mentioned in 4.1.2, my focus on the set of relevant interests is solely meant for the sake of practical applicability. Thus, as far as possible, I believe that all legitimate interests should be represented in a political discourse. However, when millions of citizens are the potential carriers of legitimate interests, it might not always be possible to represent every marginal interest. I thus consider it permissible that, as long as political representatives try to substantively represent as many interests as possible, interests that are only shared by a small number of individuals or are effectively reducible to other interests are not politically represented.

By basing my account on the representation of relevant and legitimate interest representation-affecting claims natively include the second step of Alexandrova’s operationalisation of procedural objectivity. Remember from 2.4 that she proposes that scientists first make their value judgements explicit and subsequently assess whether they are invariant to disagreement. For a mixed claim to be invariant to disagreement means nothing more than for it to yield the same implications on diverging versions of this mixed claim. Now, when I say that an interest needs to be relevant, meaning that whether its representation should matter to the realisation of citizens’ interests, Alexandrova’s step of checking for invariance to disagreement is already done.

In this chapter, I have defined representation-affecting claims, applied them to an example, and argumentatively supported the significance of the sciences’ influence on the representation of legitimate and relevant interests. I have thereby provided an alternative perspective on the phenomenon of mixed claims which defines it more explicitly in terms of its worrying political consequences. In the last chapter, I will argue for representation-affecting claims as being in a good position to address the *prima facie* problems of the mixed claims account.

5

How representation-affecting claims improve on mixed claims

I will in the following argue why I believe it to be in a good position to address the problems described throughout chapter 3 and fulfil the desiderata [1] to [3] formulated in section 3.4.

In section 5.1 I will argue that representation-affecting claims get closer to the desideratum of intersubjective robustness [1] than mixed claims. Thereafter, in section 5.2, I will show that they are directed at consequences [2]. Finally, in section 5.3, I will provide an argument which makes clear why representation-affecting claims are problematic and why collective deliberation between scientists, members of the public and policymakers is a suitable process to deal with them [3].

5.1 Intersubjectively robust

I have argued that one problem of referring to the term ‘value judgement’ is that there can easily be intersubjective disagreement about the extension of the term and that scientists have an interest in not accepting invoking value judgements. This may lead to inefficient debates about relevant concepts as already before one can get to a debate about the content of respective hypotheses, there can be disagreement about whether such a debate should even take place. I thus formulated that whether or not this basis is present should be subject to less intersubjective disagreement than the question about whether or not a judgement is a ‘value judgement’.

I believe this to be the case for my proposed notion of representation-affecting claims. Compared to deciding whether a judgement identifies as ‘value judgement’ it is possible to assess whether a scientific hypothesis makes the neglect of legitimate and relevant interests more likely on more intersubjectively robust grounds. Granted, at the borders there can still be reasonable disagreement about whether an interest counts as legitimate and relevant. However, as I shall argue, the room for disagreement is more constrained.

I have argued in 4.1 that an interest in the context of representation-affecting claims counts as legitimate if it is (a) broadly coherent with existing research, does not overstep non-epistemic boundaries (b), and (c) is held by a person who is somehow affected by this claim.

(a) is meant to exclude only those positions which are epistemically nonsensical, which I am confident there can be sufficient intersubjective agreement about. Furthermore, as previously argued, whether an interest counts as legitimate on non-epistemic grounds (b) is usually institutionalised in constitutional law. Lastly, (c) is intended only to exclude those interests of people the lives of which are in no way affected by the phrasing of a respective representation-affecting claim. In most cases, this simply yields all members of a community governed by a representation-affecting claim as those who have legitimate interests on the basis of the personal requirement.

Lastly, I held that only relevant interests should be considered. Yet, as I have also argued, this is only meant as a minimal feasibility criterion. When possible, all properly distinguishable interests should be considered. Hence, this is not in fact a matter of debate, but rather a practical criterion which pays respect to the fact of scarcity of political resources.

My criteria thus either function as very *minimal* thresholds, which, when in doubt, most interests should fall under, or they are covered by properly institutionalised and commonly accepted democratic principles (such as those specified in constitutional law).

Hence, one needs mainly to warrant the suspicion that certain interests which are not represented scientifically are present in the citizenry. One does not need to philosophize whether one identifies a ‘value judgement’ within a scientific hypothesis. As long as it can be shown that a scientific hypothesis on a subject matter can lead to the political neglect of legitimate interests one has reason to regard it as potentially problematic and worthy of mitigation. The *identification problem* I invoked in 5.1 does thus not bite as strongly for representation-affecting claims as it does for mixed claims.

To underscore this point, let me go back to the example I gave when illustrating the identification problem. Remember that I drew a picture of a society in which economists conceptualise ‘labour’ as ‘paid labour’. When a pandemic hits, governmental compensation – relying on this notion of labour – focuses on compensating wages and disregards unpaid labour. This comes at the cost of the interest of groups which primarily work without pay, disproportionately

many of whom are women. I argued that when economists are approached to rethink their definition of labour due to it presupposing a value judgment, we might face the identification problem. They might hold that they simply used *one* operationalisation of labour in terms of paid labour, not holding that this was *the* correct one. They might thus not see themselves as susceptible to having made a value judgement and remain reluctant to engage in deliberative co-creation.

This same problem is less likely to occur in my notion of representation-affecting claims. On the content criteria of legitimacy, the general interests of unpaid workers to receive compensation are neither epistemically incoherent with existing research (a) nor violate fundamental non-epistemic principles (b). Lastly, not receiving compensation where others do certainly counterfactually affects the lives of unpaid workers (c) and they do make up a relevant partition of society. Thus, I see little reasonable room for intersubjective disagreement about hypotheses including the given notion of labour to be representation-affecting claims.

It is, however, important to note that representation-affecting claims, while approaching the desideratum of intersubjective robustness more closely, can also not fully satisfy it. What counts as a relevant and significant interest does still leave room for disagreement. I consider it an interesting direction for further research to specify the concept of representation-affecting claims in even more detail.

5.2 Directed at consequences

I have argued that by defining mixed claims in terms of a variable as ‘presupposing a value judgement’ Alexandrova places an emphasis wrongly which might lead one to disregard important hypotheses. The problem with mixed claims is not whether or not one of their variables presupposes a value judgement. Instead, the consequences that this variable has scientifically and ultimately politically are what matters. Mixed claims are problematic because, through the way in which one of their variables is defined, they lead to the neglect of legitimate interests. This might happen no matter whether one recognizes a value judgement within them or not. I thus suggested that a replacing concept should be directed at consequences instead of relying on the notion of presupposition.

Representation-affecting claims fulfil this desideratum. A hypothesis is a representation-affecting claim if it makes a lack of scientific and political representation of legitimate interests more likely. To say that some hypothesis makes some effect more likely is to establish a causal claim. In this case, the undesirable consequence is that of neglecting legitimate and relevant interests. Representation-affecting claims are thus defined in terms of a consequential notion and tailored to grasp all consequentially relevant hypotheses, no matter what they do or do not ‘presuppose’.

5.3 Argumentative support

I have argued that representation-affecting claims satisfy the desiderata of intersubjective robustness [1] and direction at consequences [2] better than mixed claims. In the present section, I will present an argument that illustrates the dangers of representation-affecting claims and backs up the mitigation proposal of installing collective deliberative platforms between members of the public, policymakers, and scientists. In the end, my account will thus have satisfied desideratum [3].

This section is divided into sub-sections in which I argue for one conclusion each. To avoid confusion with the reconstruction of Alexandrova's argument, my premises and conclusions are marked by an asterisk (*). Equally numbered conclusions of mine and Alexandrova's account do not intentionally correspond in any way.

I will argue towards the following four conclusions:

C1*, dangers of representation-affecting claims: Representation-affecting claims are dangerous as they pose a problem for democracies by letting the sciences adopt a role they are not legitimised to adopt (sub-section 5.3.1).

C2*, case for involving the public: One should engage with members of the public to deal with the dangers of representation-affecting claims. (sub-section 5.3.2).

C3*, case for involving scientists and policymakers: To cope with the dangers of representation-affecting claims exchange with policymakers and scientists is necessary. (sub-section 5.3.3).

C4*, case for collective deliberation: Collective deliberation among the public, scientists and policymakers is necessary for dealing with the dangers of representation-affecting claims. (sub-section 5.3.4).

I will thereby support all aspects of Alexandrova [2018] which I have argued in 3.3 to lack argumentative support.

5.3.1 C1*, dangers of representation-affecting claims

In this section, I draw on my earlier arguments from section 4.3 on the general role of the sciences in representative democracies.

My basic premise is that modern democratic governments crucially rely on the sciences to inform public policy. Governments deal with highly complex phenomena such as global trade, climate change, or migration. In order to come up with policies that are in the best interest of their citizens they depend

on scientists to deliver up-to-date scientific explanations and predictions. For example, if a government wants to adapt to future impacts of climate change, it needs to know from climate scientists what these impacts will be and how they are likely to affect citizens' interests. This marks the first premise:

P1*, science-based policy: Democracies crucially depend on the sciences to inform public policy.

I consider it true, furthermore, that on issues of science-based policy there often exist multiple permissible scientific perspectives without one being a straightforward 'winner'. This is already true for natural-scientific questions as has been pointed out, amongst others, by Thomas Kuhn [1970] or more recently Ronald Giere [2019]. There is always a non-rational element in scientific inquiry and a chosen scientific perspective is the product of existing scientific paradigms or other cultural and historical factors.

But this is even more the case for the social sciences, as at their core lie concepts – such as well-being, health, and democratic participation – with rich philosophical underpinnings. There is no plausible reason for which the economist's conception of well-being should be deemed universally more accurate or useful than a hedonist's. This marks my second premise:

P2*, multiple perspectives: On many components of science-based policy there are multiple scientific perspectives without one being strictly epistemically or morally superior.

I furthermore argue that depending on which scientific perspective is chosen, different interests might be focused on to a different extent in the resulting science-based policy discourse.

One way in which this can happen is through the use of representation-affecting claims. As defined before, these are scientific hypotheses that make a lack of representation of legitimate and relevant interests more likely due to the way in which one of their variables is defined. For example, as illustrated before, when conceptualising labour only in terms of paid labour, feminist interests, which might want to include unpaid labour in a conceptualisation of labour, are at risk of being neglected in political discourses.

Thus, there are hypotheses which, due to the way in which a certain variable is defined, make a lack of representation of legitimate and relevant interests more likely. This is simply the definition of representation-affecting claims:

P3*, representation-affecting claims: A representation-affecting claim is an empirical hypothesis about a putative causal or statistical relation, at least one variable of which is defined in a way that makes a lack of scientific and political representation of legitimate and relevant interests more likely.

I have argued that democracies crucially rely on the sciences in policy discourses (P1*), that there often are multiple permissible perspectives on scientific variables (P2*) and that depending on which perspective is chosen, a hypothesis can lead to a lack of representation of relevant and legitimate interests in a policy debate (P3*).

I have already argued 4.3 why this is problematic with regard to what scientists may legitimately contribute to policy debates. This will thus only be repeated shortly at this stage. Coarsely put, democracy, as a system of government, is characterized by public governance *through* the public. The ultimate holders of power within a democracy are its citizens. In representative democracies, citizens lend their coercive force to politicians who can make coercive decisions but should do so in the citizens' best interest.¹

As mentioned in P1*, when it comes to making democratic decisions, the participation of scientists is crucial. However, it is not the legitimate role of scientists to influence political debates in the sense of recommending some of citizens' legitimate and relevant interests to be focused on at the cost of others. Instead, the task of the sciences is to contribute to the political debate a factual basis that allows politicians to assess the implications of policy decisions for all relevant and legitimate interests. This marks my fourth premise:

P4*, legitimate role of the sciences: The legitimate role of the sciences in a democracy is to inform public policy in a way that is as neutral as possible towards all legitimate and relevant interests.

From P1* to P4*, it becomes clear why representation-affecting claims are problematic: The sciences have a large influence on policy processes. However, their legitimate role in contributing to these processes is not one of recommending distinct interests but of providing a factual basis which allows for politically discussing all legitimate and relevant interests. Representation-affecting claims, then, incompletely reflect available interests and thus make a lack of political representation of those interests they do not reflect more likely. Representation-affecting claims thereby become problematic as they constitute a democratically illegitimate infringement into the political discourse by scientists.

C1*, dangers of representation-affecting claims: The unreflected use of representation-affecting claims is dangerous as it lets the sciences adopt a role they are not democratically legitimised to adopt. (From P1* – P4*)

I have thus presented an argument on why representation-affecting claims are dangerous based on the legitimate role of scientists within a democracy. In the following sub-chapters, I will defend the different components of Alexandrova's

¹I do not have the space here to argue why it is reasonable to regard citizens as the ultimate holders of political power. To that end, I simply take the value of democracy as a given.

mitigation proposal of a collective deliberative platform between scientists, policymakers, and members of the public. I will start by arguing for involving members of the public.

5.3.2 C2*, case for consulting the public

Unlike Alexandrova [2018] I will in the following make a case for consulting the public without referring to concepts like ‘impartiality’ or ‘objectivity’. In her paper, Alexandrova argues at length why most notions of objectivity and impartiality do not and why “procedural objectivity” *does* work for mixed claims.

I do not take a strong stance on these concepts but do simply not regard it as necessary or useful to appeal to them in the context of mixed or representation-affecting claims. By illustrating the dangers of representation-affecting claims in reference to commonly accepted democratic reasons, I believe to have done all that is necessary to assess the adequacy of a mitigation procedure. Any such procedure simply needs to plausibly be effective in bringing on board the interests that are being neglected through the use of representation-affecting claims.

Invoking a notion of objectivity thus seems to overly complicate the argument and induce just another source of potential disagreement. I thus rather do without it.

Looking at democratic systems today, many of them take the shape of a *representative* democracy. In a representative democracy, not citizens themselves make political decisions but they elect representatives who are allowed to take these decisions for them for a limited amount of time. If we seem to regard this operationalisation of democracy as the best one, why then should we directly involve members of the public when debating mixed/representation-affecting claims?

As stated in 4.3.1, most modern-day democracies are representative democracies. Citizens defer their political power to elected representatives who make political decisions for them. However, they thereby do not completely forego their political sovereignty. The decision for representative government is born out of the justified belief that a smaller group of politicians can collectively advance the interests of citizens better than this would be the case in a fully direct democracy. In the end, democracy still means governance *of* the people *by* the people. Taking this practical justification of representative democracy at face value, I argue, entails that the performance of representative government needs to be assessed against the extent to which it presents the citizens’ interests. In other words, the measure of political performance of a representative government is the extent to which it promotes its citizens’ legitimate and relevant interests:

P5*, primacy of public interest: The ultimate standard by which a representative government must be judged is the extent to which it caters to the interests of its citizens.

I have previously argued that the dangers of representation-affecting claims lie in them leading to a lack of representation of legitimate and relevant interests in a policy discourse. If professional politicians perfectly represented the interests of their citizens, it would be most suitable to have them debate about the content of mixed claims simply. However, to claim that politicians perfectly represent the interests of citizens would be to misconceive real-world politics.

Let us ask, when would it indeed be the case that politicians perfectly represented their citizens' interests? In order for this to be the case, politicians need to be *willing* to represent citizens' interests and *know* what these interests are. While this might be too generous, I assume the willingness condition to apply and focus my argument on the epistemic condition. When then would politicians be well-informed about their citizens' interests?

Intuitively, this would be the case if representative bodies were “descriptively representative” of the target population. According to Pitkin [1967], a committee is descriptively representative if it shares citizens' perspectives or social standpoints. If, say, a congress perfectly represents socio-economic, geographical, gender, ethnic and other personal characteristics, we might reasonably assume that they are aware of all the interests these characteristics bring with them.

However, political bodies are far from being representative along these lines. It is well-documented, that political bodies include an excess of culturally dominant groups and lack representatives of relevant minorities [Hakhverdian, 2015, p. 238]. Yet some might object that descriptive representation is not in fact needed to accurately represent citizens' interests. One might argue that “substantive representation” – being representation of *interests*, not personal characteristics [Pitkin, 1967] – can also be achieved if politicians are simply well-informed about citizens' judgements.

However, optimism about the capability of politicians to grasp the interests of individuals they do not descriptively represent seems unwarranted. The informational base that politicians have about their citizens' interests through the democratic process is generally very slim. All elected representatives know is that a sufficiently sizable group of those people who decide to cast their vote deems it least horrible if she belongs to the groups of people making coercive decisions. Granted, politicians will be equipped with a certain level of political empathy for their electorate's interests, also because it is partly in their own interest to cater to it. Nevertheless, this empathy has its limits.

Empirical research corroborates this worry. Arnesen and Peters [2018, p. 871] present studies which show that the presence of politicians from particular minorities, such as those with LGBTQ+ or migrant backgrounds, leads to previously underrepresented minority interests being represented in the political

discourse. In other words, descriptive representation does seem to condition substantive representation. As Arnesen and Peters [2018, p. 871] argues by reference to Mansbridge [1999], this is because particular minority standpoints are difficult to identify and communicate without having access to a shared cultural and historical background which is unique to this standpoint.

I have thus established that citizens' interests are imperfectly represented by political representatives (substantive representation) through their not being representative of the populace (descriptive representation). This is summarized in the following premise:

P6*, imperfect representation: Political representatives imperfectly represent citizens' interests due to a lack of descriptive representation.

I argued that asking politicians seems insufficient to deal with the dangers of representation-affecting claims. But in order to make the case for consulting the public when dealing with the dangers of representation-affecting claims it is furthermore necessary to argue that doing so is effective in achieving substantive representation.

This I hold to be a most intuitive assumption: If a lack of descriptive representation stands in the way of substantive representation, it seems straightforward to bring on board neglected standpoints to instantiate descriptive and thereby substantive representation. This is precisely what is achieved by involving a representative sample of the public in a process to mitigate representation-affecting claims:

P7*, effectiveness of consulting the public: Descriptive and thereby substantive representation can be realised by including a representative sample of the population in a deliberative process.

In sum, I have thus argued that governments need to be measured against the extent to which they make present their citizens' interests (P5*) and that there is a lack of substantive representation in representative bodies due to a lack of descriptive representation (P6*). Together with the premise that descriptive and thereby substantive representation would be created through consulting members of the public (P7*) this makes the case for consulting the public in order to deal with the dangers of representation-affecting claims:

C2*, case for consulting the public: One should engage with members of the public to bring back those interests which are neglected in representation-affecting claims. (From C*1 and P*5–P*7)

I have formulated a defence of the suggestion to involve the public to mitigate the dangers of representation-affecting claims. In the following sub-section, I will argue why policymakers and scientists should also remain part of a process to mitigate the dangers of representation-affecting claims.

5.3.3 C3*, case for consulting policymakers and scientists

Before arguing why policymakers and scientists should remain part of a process to address the dangers of representation-affecting claims, let me define who I mean when I speak of those groups. When speaking of policymakers I mean any person the profession of whom it is to design and execute public policy. In this sense, my understanding of policymakers scopes both politicians and bureaucrats. Furthermore, scientists are any kinds of academics or ‘experts’ who externally assist policymakers in their policy-making process through their research and advisory. So, for example, philosophers are included as are physicists or political scientists on my view.

Alexandrova states that policymakers and scientists should remain a part of a deliberative process as they possess “normative knowledge in virtue of their epistemic knowledge” [Alexandrova, 2018, p. 431]. I do not disagree with this statement but hold that it is too sparsely argued for and leaves room for confusion. On the basis of this phrase we might wonder, for example, whether economists have some kind of superior moral expertise about citizens’ welfare *qua* being economists. This is certainly an interpretation many would disagree with.

I thus want to make the case in favour of consulting policymakers and scientists more carefully. This starts with acknowledging that scientists and policymakers have information relevant to policy processes which the general public lacks. Say, for example, the province of South Holland in the Netherlands wants to adapt to future harmful climate change, such as rising sea levels. The initially coarsely formulated political objective is to make the province ‘more resilient’ towards the harms of climate change.

Now, imagine citizens were left to themselves for coming up with respective policies according to ‘their interest’. This would understandably leave them quite overwhelmed. Climate change is a highly complex phenomenon only a few people are truly able to understand, let alone predict. Furthermore, a non-climatologist might find it difficult to fruitfully define the concept of ‘resilience’. Citizens thus crucially rely on scientific information necessary to even develop a precise enough interest on the issue at hand.

Furthermore, without policymakers, it seems difficult to adequately realise citizens’ interests in the process of public policy. The political expertise of politicians or the legal expertise of lawmakers certainly is still needed to create workable policies. We may thus first say:

P8*, competence of policymakers and scientists: policymakers and scientists have information which is crucial for members of the public to form an interest.

This makes the case for including scientists and policymakers in a process of public-scientific co-creation

C3*, involving scientists and policymakers: A process to mitigate the dangers of representation-affecting claims should include policymakers and scientists. (From C1* and P8*)

Lastly, I will argue why deliberation should be part of a process to mitigate the dangers of representation-affecting claims.

5.3.4 C4*, case for collective deliberation

Alexandrova suggests that the modus operandi of mitigating the dangers of mixed claims should be that of a *deliberative forum*. Why exactly should it be deliberative?

Before giving an answer to this question it is useful to define what I mean when I speak of deliberation. I rely on a “minimalist definition” by [Mansbridge \[2015\]](#):

Deliberation: Deliberation is “[...] mutual communication that involves weighing and reflecting on preferences, values, and interests regarding matters of common concern.” [[Mansbridge, 1999](#), p. 29]

I have just argued that scientists and policymakers should remain parts of a process oriented at mitigating the dangers of representation-affecting claims due to them having access to pieces of information that are crucial for individuals to be able to formulate an interest on a specific topic. However, it is so far not ensured that this information finds its way to citizens. Deliberation, as a technique of mutual communication, seems promising to transfer this information. In a process of collective deliberation with scientists and policymakers, members of the public can optimally inform themselves by asking questions and collaborating with everyone involved. This marks one premise in support of deliberation as a mitigation process for the dangers of representation-affecting claims:

P9*, epistemic power of collective deliberation: individuals are effectively informed through deliberation.

Furthermore, individuals are often not fully set on their interests even if they are well-informed. Their interests might be receptive to other people’s interests. For example, a person might change their interests when hearing of another person’s interest as it makes a previously non-salient interest salient because one was previously unaware of it. On the other hand, hearing about another person’s interest might lead one to reduce one’s conviction of one’s own position out of empathy or altruism.

Thus another reason for which mutual deliberation is advisable is due to the receptiveness of interests to other interests:

P10*, receptiveness to other interests: interests are receptive to other interests.

I have argued that both members of the public and scientists as well as policymakers should remain part of a process to mitigate the dangers of representation-affecting claims. I furthermore suggested that deliberation is a powerful technique in informing individuals' interests, both through factual information and other people's interests.

This warrants the final conclusion that deliberation between scientists, policymakers, and a representative sample from the general public is the adequate procedure for mitigating the dangers of representation-affecting claims:

C4*, the case for deliberation: Collective deliberation among the public, scientists and policymakers is necessary for dealing with the dangers of representation-affecting claims. (From C1*-C3* and P9*-P10*)

I have thus provided an argument that illustrates on which grounds representation-affecting claims are 'dangerous' and why Alexandrova's practical proposal of installing a collective deliberative platform between policymakers, scientists, and members of the public is apt for coping with them. I have thereby satisfied desideratum [3] which I had previously specified in 3.4.

In the last chapter, I will conclude this thesis and suggest promising directions for further research.

6

Conclusion

This thesis focused on the “mixed claims” account by Anna Alexandrova [2017, 2018] which I presented in chapter 2. A mixed claim is a hypothesis at least one variable of which presupposes a value judgement. Alexandrova argues that mixed claims are a unique and irresolvable notion. When scientists and policymakers use these mixed claims they might be inattentive to a potential disagreement with citizens’ value judgements and thus impose their value judgements on them. Mixed claims thus bring with them the dangers of “value imposition” and “value inattention”.

To cope with these dangers, Alexandrova argues, many accounts of objectivity and impartiality are insufficient. She holds “procedural objectivity” is needed, which ensures that mixed claims have undergone “appropriate social control”. Such appropriate control, she suggests, is given through setting up deliberative platforms in which members of “the relevant parties” agree on the content of relevant mixed claims. These relevant parties include policymakers, scientists of the respective discipline, and – most importantly – members of the public which is governed by mixed claims.

In chapter 3, while accepting her practical proposal, I pointed to *prima facie* problems of Alexandrova’s argument. I argued that by defining mixed claims in terms of ‘value judgements’ her argument’s practical applicability suffers. As I illustrated, invoking the term ‘value judgement’ opens the door towards persistent intersubjective disagreement on the extension of mixed claims. I called this the *identification problem*.

I subsequently argued that by basing the definition of mixed claims on the notion of ‘presupposition’, relevant concepts might be excluded from the domain of mixed claims under certain interpretations of what it means for a hypothesis to presuppose a value judgement. I dubbed this the *problem of unrecognized non-epistemic implications*.

I furthermore suggested that Alexandrova’s argument lacks proper argumentative support at different stages. First, she does not properly make explicit on which grounds mixed claims are dangerous and why this is something to worry about. Second, after successfully rejecting different accounts of objectivity and impartiality, she gives too few positive reasons in favour of the sufficiency of “procedural objectivity”. Third, she does insufficiently defend why her operationalisation of procedural objectivity, consisting in a deliberative platform between the “relevant parties” ensures procedural objectivity. I summarized this under the *problem of insufficient argumentation*.

On the basis of these three problems I proposed three desiderata that an alternative account should fulfil: The basic notion should [1] be intersubjectively more robust and [2] directed at consequences. Furthermore, the overall account should be thoroughly argued for on the basis of commonly accepted moral or political reasons [3].

In chapter 4 I defined and illustrated my replacing account of representation-affecting claims which are defined as follows:

Representation-affecting claim: A representation-affecting claim is (1) an empirical hypothesis about a putative causal or statistical relation (2) at least one variable of which is defined in a way that (3) makes a lack of representation of legitimate and relevant interests in a process of science-based policy-making more likely.

Finally, in chapter 5, I defended that my account closely approaches the desiderata previously specified. I argued that through being based on the representation of interests instead of presupposing value judgements, there could be more intersubjective agreement on the domain of representation-affecting claims than for mixed claims. I then suggested that by being defined in terms of making a lack of representation more likely instead of presupposing a value judgement, the notion is directed at morally relevant consequences, therefore placing a more useful emphasis on the definition of representation-affecting claims. Lastly, I gave an argument which made explicit the dangers of representation-affecting claims and supported the mitigation proposal of setting up a deliberative platform between members of the public, scientists, and policymakers.

When describing the dangers of mixed claims, Alexandrova writes the following:

“The most serious charge is an importation into a science of substantive views about the nature of well-being that those whose well-being is being studied have good reasons to reject” [Alexandrova, 2018, p. 432].

I believe that by defining representation-affecting claims by reference to the representation of legitimate and relevant interests, I came up with an approach

that lives very much in the spirit of this quotation. As it shows, Alexandrova’s – and my – interest in this type of hypothesis lies in the practical problem of them disadvantaging members of society through their conceptualisation and subsequent policy use. Representation-affecting claims bring this practical motivation more to the fore by defining these hypotheses precisely in terms of their problematic practical consequences.

I thus hope to have achieved that Alexandrova’s call for directing our attention at the hypotheses which she calls mixed claims, and I call representation-affecting claims, is now heard even further. And I hope to have lent stronger support to her proposal of installing platforms for deliberative co-creation between scientists, policymakers, and members of the public.

I will now conclude this thesis with an outlook on what further research may fruitfully address.

Outlook

First, my paper has remained rather conceptual in that it addressed the theoretical foundations of thinking about particular scientific phenomena. I consider it a fruitful next step to bring these arguments more directly to applied domains. One valuable direction of research could investigate how representation-affecting claims affect different policy-relevant sciences such as the climate sciences, development economics, or welfare economics.

Second, both Alexandrova [2018] and I only give a rough sketch of the design of a deliberative platform to address mixed/representation-affecting claims. Further conceptual research should go into investigating how exactly such platforms are to be designed in order to ensure maximal representativeness.

Here, the question of whether and how hypotheses are ultimately chosen seems striking. It is a pertinent question what deliberative platforms should achieve on the continuum between deciding upon one hypothesis and simply mapping all existing hypotheses. If only a limited amount of hypotheses or even *one* should be chosen, this opens up tricky questions of Social Choice Theory. Next to conceptual research, empirical investigations in which different modes of deliberation are tried out and investigated seem necessary if it is the goal to at some point arrive at effective and workable institutions for deliberative co-creation. A related research question for applied political sciences can investigate how co-creative deliberative platforms would amend, replace, or alter existing institutions of science-based policy in practice.

Third, by circumventing notions such as value judgements and objectivity, I am proposing a novel framing that could be useful to other discussions on scientific objectivity and values in science. An intuitively smooth application would be to the role of values as agenda setters. Instead of referring to agenda-setting values, one might think about scientific agendas in terms of their effects

on the representation of relevant and legitimate interests.

Fourth, further conceptual work could enrich and strengthen the representation-affecting claims account. It could be especially fruitful to elaborate on my proposed legitimacy and relevance criteria which specify the notion of representation-affecting claims.

7

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