

Causal Generalisations in Policy-oriented Economic Research: An Inferentialist Analysis*

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ABSTRACT

The most common way of analysing the meaning of causal generalisations relies on referentialist semantics. In this article, we instead develop an analysis based on inferentialist semantics. According to this approach, the meaning of a causal generalisation is constituted by the web of inferential connections in which the generalisation participates. We distinguish and discuss five classes of inferential connections that constitute the meaning of causal generalisations produced in policy-oriented economic research. The usefulness of our account is illustrated with the analysis of generalisations about unemployment put forward by the Organisation for Economic Co-operation and Development in its highly influential 1994 *OECD Jobs Study*. The article ends with a discussion of some crucial philosophical questions about the use of inferentialism in the analysis of causal generalisations.

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1. Introduction

What is the meaning of a causal generalisation? Two approaches to meaning provide different responses to this question: referentialist and inferentialist semantics. Most philosophers studying the meaning of causal claims rely on referentialist semantics, an approach that makes meaning dependent upon the representational role of linguistic terms. In this article, we provide instead an analysis relying on inferentialist semantics, an approach which takes the meaning of a causal claim as being constituted by the web of inferences in which the claim participates.

We do not aim to argue that an inferentialist approach to meaning is the best semantic approach for all kinds of statements. We also do not want to argue that inferentialism is the right semantics for all sorts of causal claims (Reiss 2012). Our goal is more focused. We develop in some detail an inferentialist analysis overtly intended for a specific type of claims: *causal generalisations* in policy-oriented social sciences.

In a previous study, we have analysed the meaning of causal generalisations in the Organisation for Economic Co-operation and Development's trendsetting *OECD Jobs Study* (OECD 1994a, 1994b) using an explicitly referentialist approach (Claveau and Mireles-Flores 2014). The result was, in a nutshell, that there was no straightforward way to fix or single out a specific meaning among the vast array of different potential meanings that the OECD generalisations could have under a referentialist interpretation. The analysis as we applied it to the case made obvious the *semantic complexity* of such claims (in relation to their referents). This kind of semantic complexity—as hinted at by James Woodward (2003, 7)—could make the causal claims seem 'confused, unclear, [or] ambiguous'.

In the present article, we build upon our previous study on the semantics of causal generalisations and, using the same case study, we subject the OECD causal generalisations to an inferentialist analysis, which shall facilitate a clear comparison between the results of applying the two distinct semantic approaches to the same type of causal claims. Our main thesis is that an inferentialist analysis reveals how the roles of these causal generalisations in a network of inferences are what gives them meaning (rather than their reference).

Our contribution is important for at least two reasons. First, it is a rare attempt to turn inferentialism from a general semantic approach into a procedure to systematically analyse the meaning of specific types of claims. Inferentialism is a long way from having an applied machinery as well established as referentialism to perform such analysis, but our article constitutes one step in this direction. Second, given its way of revealing the meaningfulness of causal generalisations, an inferentialist analysis is less prompt to impose misguided prescriptions. Referentialist semantics of causal claims is often associated with a prescriptive agenda about, e.g., what counts as either meaningful or meaningless. This leads quite directly to the conclusion that the communities producing and using claims with allegedly no definite referential meanings should reform their linguistic practices to be clearer and more precise about that for what their causal claims stand. From an inferentialist standpoint, however, this philosophical prescription appears misguided by being based on an extremely restricted understanding of meaning.

In section 2, we briefly discuss the main contrast between referentialism and inferentialism as semantic theories, and in section 3 we provide a typology of relevant inferential connections for policy-oriented causal generalisations. In section 4, we make use of the proposed typology to investigate the meaning of the OECD generalisations on the causes of unemployment. Finally, in section 5, we discuss and advance responses to three important potential qualms in relation to our proposal.

2. Two Approaches to Meaning: Referentialism versus Inferentialism

Semantics is a field of inquiry dedicated to the study of meaning. The most widespread approach to semantics is commonly called referentialism (Heim and Kratzer 1998; Peregrin 2012, 3; Speaks 2017).¹ According to referentialism, the meaning of words is constituted by what these words *refer* to, or stand for. In other words, meaning is understood as a ‘language-to-world’ relation. The meaning of nouns is given by the objects they stand for, the meaning of predicates by the properties and relations they stand for, and in turn the meaning of compound statements depends entirely upon the meaning and position of their constituents. For full sentences, meaning is

given by their truth-conditions or, differently put, it is given by ‘what the world would have to be like for [the sentence] to be true’ (Heim and Kratzer 1998, 1). For example, ‘snow is white’ is true if and only if all elements that are members of the set of objects referred to as ‘snow’ are also members of the set of objects with the property referred to as ‘white’. By pairing in this fashion the subject and the predicate of this sentence with objects and properties in the world, we state the conditions that have to be true in the world for the sentence ‘snow is white’ to be true. That gives us the meaning of ‘snow is white’ according to referentialism. As should be clear from this example, referentialism implies that the meaning of a sentence can in principle be investigated by considering that sentence in isolation from any other sentences.

The referentialist semantic approach has dominated Western philosophy during the last century (Speaks 2017), yet it has also been disputed. In some of his later writings, Ludwig Wittgenstein remarks: ‘For a large class of cases—though not for all—in which we employ the word “meaning” it can be defined thus: the meaning of a word is its use in the language.’ (Wittgenstein 2001, §43; see also Wittgenstein 1958, 69).

What are the different uses of language then? Robert Brandom notes that ‘[t]here are many things we do with language’, and maintains that ‘empirically describing and representing how things are’ is only one of them (Brandom quoted in Williams 2013, 386). For instance, we use language to draw a conclusion from a certain set of premises, that is, we infer new sentences from other sentences. Within inferentialism, this inferential use of language is, in fact, paradigmatic.²

A sentence can either play the role of a premise or a conclusion in an inference (Brandom 2007, 654). Thus, the meaning of a sentence, according to inferentialism, can be given by spelling out all the inferences in which that sentence appears. In contrast to referentialists, inferentialists understand meaning to be *primarily* a ‘language-to-language’ relation (which does not mean, as we will discuss further, that inferentialism does not account for relations of the language with the world).

The contrast between referentialism and inferentialism should not be radicalised. According to inferentialism, the crucial problem with referentialist semantics is simply to over-generalise one use of language (the referential role) as the only archetype of meaningfulness, which leads the analysis to a *single-minded* quest for meaning in the referents of our terms. It is not that reference has nothing to do with meaning, it is rather that,

according to inferentialism, referentialism diverts the attention away from a fundamental determinant of the meaning of a sentence: the network of inferences in which it plays a role.

3. Causal Generalisations and Inferentialist Semantics

As mentioned in the introduction, this article focuses on the meaning of a special type of causal claims, namely causal generalisations. Causal generalisations are claims of the form ‘*X* causes *Y*’ that apply to a population of units. This type of causal claims is widespread in the output of policy-oriented social sciences. For instance, we often hear claims such as ‘education causes higher incomes’, ‘capital investment causes economic growth’, ‘low interest rates cause inflation’, ‘small group sizes cause improvements in academic performance’, and the like. All these claims are intended as generalised lessons for many units.

The philosophical literature on causality has tended to implicitly follow a standard referentialist approach when investigating the meaning of causal claims. In this literature, the meaning of sentences of the form ‘*X* causes *Y*’ is usually characterized by specifying the meaning of the causal relata ‘*X*’ and ‘*Y*’ in terms of what they stand for in the world (e.g., facts, events, property instantiations that can be coded as variables); and by providing an analysis of the meaning of the causal relation in terms of what it refers to (e.g., regularities, probabilistic dependence, causal processes, structures that can sustain counterfactual manipulations, capacities, and so forth). Each major theory of causality has put forward necessary and sufficient conditions for the truth of causal claims as a means to account for the meaning of causation.³

In this section, we provide the skeleton of an alternative inferentialist approach. More precisely, we elaborate on some concepts pertaining to inferentialism and we spell out the types of inferential connections that clarify the meaning of causal generalisations.

To begin with, the notion of ‘inference’ must be understood in a somewhat liberal fashion. The relevant inferences are not limited to logically valid ones, that is, they are not restricted to deductively valid inferences. They rather extend to what is called material inferences (Sellars 1953; Brandom 1994, 97–104; Norton 2003; Brandom 2007; Brigandt 2010). An inference is materially correct in virtue of the inferential content of the

concepts figuring in its sentences. For instance, from the sentence ‘Lightning is seen now’, it does not deductively follow the sentence ‘Thunder will be heard soon’. However, such an inference is materially valid in the sense that when one is committed to the proposition ‘Lightning is seen now’, then one is also committed to the proposition ‘Thunder will be heard soon’, because the content of the concepts of lightning and thunder are inferentially connected (Brandom 2007, 657).

Similarly, inferential connections among sentences can also be of material incompatibility. For instance, by knowing that a figure cannot simultaneously be a square and a triangle, one is committed to the sentence ‘Figure A is not triangular’ when also committed to ‘Figure A is a square’. The relevant material incompatibilities are thus in turn part of the meaning of a sentence.

Another liberalizing move for the notion of ‘inference’ is to allow for certain language-to-world connections, which Wilfrid Sellars (1954, 210–211) called ‘language entry’ and ‘language departure’ transitions. Accordingly, inferentialism allows for three general types of transitions in relation to sentences: 1) the typical language-to-language transitions among sentences; 2) language entries, which are world-to-language inferential connections, e.g., from the perception of something to the commitment to an observational sentence; and 3) language departures, which are language-to-world connections, e.g., from an imperative sentence that commits us to an actual action. These connections ‘can be understood to be inferential in a broad sense, even when the items connected are not themselves sentential’ (Brandom 2007, 658).

In view of this, the meaning of the sentence, ‘Lightning is seen now’, includes the type of circumstances which would make a competent user of the sentence utter it after perceiving lightning (this would be a language entry). A language user committed to this sentence would also be committed to sentences such as ‘thunder is coming’ and ‘it will rain soon’, and if the utterer happens to be in a canoe in the middle of lake, the person would further infer the imperative: ‘I must get off the lake’ (language-to-language transitions). Then from this last sentence, the same user will transition to the actual action of reaching the shore and getting off the canoe (this would be a language departure). And thus: ‘If one were to enumerate all the transitions an expression is involved in, one would thereby give its meaning’ (Whiting 2009).

On the basis of the above notions pertaining to the inferentialist approach, we have singled out five types of inferential connections that are relevant to the meaning of causal generalisations like those we analyse in the following section. Note that an inferentialist analysis of meaning cannot generally identify the *full* meaning of an expression. Hence, we do not take our five classes of inferential connections to exhaust the meaning of a causal generalisation. Yet, one can use these five classes to systematically analyse a generalisation and therefore improve our understanding of the claim. The classes of inferential connections that we highlight are:

Principal-cause incompatibility. When a generalisation takes the form of a principal-cause claim (e.g., ‘*X* is the main cause of *Y*’), being committed to it implies the rejection of alternative principal-cause generalisations (e.g., ‘*Z* is *not* the main cause of *Y*’).

Wide–narrow reinforcement. A wide generalisation is connected by a link of mutual support to narrower generalisations that can be read as more specific versions of it. For instance, a ‘wide’ claim of the form ‘For population *P*, *X* causes *Y*’ is inferentially connected to ‘narrower’ claims like ‘For p_i (where p_i is a more specific sub-population of *P*), *X* causes *Y*’. Similarly, a wide causal claim is inferentially connected to other claims that are narrower in the sense that the terms acting as causal relata are made much more specific. Accepting a narrow claim reinforces the commitment to the wide claim, and vice versa.

Evidential connection. A generalisation is connected to any other sentences that would constitute evidence for it. There is a diverse collection of social-scientific results which constitutes the relevant evidence that supports the validity of a causal claim. The cluster of all the sentences about such results is sometimes called the evidential base of a causal claim. In general, the sentences in the evidential base are what ‘the data are expected to say’ when the generalisation is accepted. The evidential connection is thus what links a causal generalization to language entries.

Policy implication. The generalisation is connected to (types of) actions that should be given priority. In policy-oriented social sciences, causal generalisations are often inferentially connected, for instance, to policy recommendations and, ultimately, to policy *actions* (language departures).

Research implication. The generalisation highlights the kind of research worthy of being pursued in the future. It is inferentially connected to recommendations for future topics of research and, through imperative sentences about what to research, to actual future research endeavours (language departures).

The case study in the next section will help us put more flesh on this skeleton. It is mainly intended to illustrate the fruitfulness of systematically analysing some causal generalisations using this classification of inferential connections. We put forward that these connections among claims are crucial to elucidate the meaning of causal generalisations.⁴

4. An Inferential Analysis of the OECD Causal Generalizations

In this section, we attempt to give a faithful, though not comprehensive, rendering of the inferential network of some of the generalizations found in the *OECD Jobs Study* (OECD 1994a, 1994b). Note that our analysis is not attempting to justify the OECD claims, but to make explicit their meanings in accordance to an inferentialist approach.⁵

According to the report, the main result is captured by the following generalisation (which we call ‘the inflexibility claim’):

[I]t is an inability of OECD economies and societies to adapt rapidly and innovatively to a world of rapid structural change that is *the principal cause* of high and persistent unemployment. (OECD 1994a, part 1, vii; emphasis added)

The OECD itself refers more compactly to this generalisation by saying: inflexibility ‘is the principal cause of high and persistent unemployment’ (OECD 1994b, vii). Let us refer to this claim as *Inflex* \leftrightarrow *U*, for short.

In addition, narrower causal claims are presented as specifications of the inflexibility claim, for example: '[r]elatively high unemployment benefit entitlements tend eventually to increase unemployment' (OECD 1994b, 38). Let us call this claim $B \leftrightarrow U$ for short.

Consider the inflexibility claim first. For OECD countries, the inability to adjust rapidly to a world of fast structural change is the principal cause of high unemployment according to the report. As we have shown elsewhere in detail, from the standpoint of a *referentialist* approach, this claim can have a vast array of potential meanings (Claveau and Mireles-Flores 2014). In relation to the claim at hand here, it is not clear what the precise referents of the notion of 'inflexibility' could be, e.g., trade barriers, market failures, labour mobility frictions, institutional barriers, and so on. The same objection can be raised about the notion of a 'principal cause', which is a nebulous notion from a referentialist standpoint: what kind of causal notion stands for this concept? 'Principal' cause in relation or in contrast to what? What is the standard upon which 'inflexibility' earns the title of principal cause? The referents of these terms are not clear, and thus the meaning of the causal claim in which they appear. As a consequence of this semantic complexity, it could be tempting to take this claim as loose, ambiguous, or confusing talk.⁶

From the standpoint of an *inferentialist* approach, however, the causal generalization on inflexibility can be shown to be central to the whole inferential network in the OECD study. The first cluster of inferential connections arises from what we label principal-cause incompatibilities: in being committed to the claim that low flexibility potential is the *principal* cause of unemployment, OECD economists were committed to the rejection of some other claims. Indeed, in the study, they rejected explicitly three other claims about alternative potential principal causes (OECD 1994b, 27):

- (a) 'Technology causes rising unemployment' ($Tech \leftrightarrow U$)
- (b) 'Imports from low-wage countries cause higher unemployment' ($I_w \leftrightarrow U$)
- (c) 'The intensity of competition is to blame' ($Comp \leftrightarrow U$)

What do these three alternative principal-cause generalisations mean—i.e., what are their inferential connections beyond their incompatibility with $Inflex \leftrightarrow U$ (and with each other)? To begin with, part of the meaning of these generalisations is constituted by their own evidential connections. For

instance, individuals putting forward claim (a) about technology as a main cause of unemployment had predicted numerous times in the past a permanent increase in unemployment. Such a historical upward trend in unemployment is evidentially connected to the generalisation. The OECD believes that no such trend is visible in the data, a belief which coheres with the rejection of $Tech \leftrightarrow U$ (OECD 1994a, pt. 1, 124). Similarly, the OECD maintains that there is a tension between accepting the second alternative, claim (b), about low-wage countries, and recognising that imports from these countries account for only a tiny share of overall expenditures in OECD countries (OECD 1994b, 28).

The argument against generalisation (c) is less clearly linked to its evidential base. After all, if the problem is ‘an inability of OECD economies and societies to adapt rapidly and innovatively to a world of rapid structural change’ (OECD 1994a, pt. 1, vii), the cause seems to be twofold: too low adjustment potential and *too high pace of change*. One might interpret this pace of change as the intensity of competition, and conclude that the intensity of competition is indeed the principal cause of high unemployment. The semantic difference between $Comp \leftrightarrow U$ and $Inflex \leftrightarrow U$ is thus minor when it comes to ‘evidential connections’, but it is major when one considers policy implications, as we will see shortly.

Recall that the inferential connections constituting the meaning of a claim go well beyond deductively valid inferences. This should be clear in relation to evidential connections, since the sentences inferentially linked to the causal claim are about what is expected given the material content of a causal claim, not what is deductively entailed by it. For instance, it is not a logical contradiction to jointly hold the claim $Tech \leftrightarrow U$ and believe the standard economic history of the last 200 years—which can be summarised by ‘rapid technological improvements with no long-term upward trend in unemployment rates’. It is indeed easy to come up with a story for why the failure of a prediction based on the generalisation $Tech \leftrightarrow U$ does not necessarily make the generalisation untenable.

Furthermore, policy implications also contribute to the meaning of the principal-cause generalisations rejected by the OECD. These connections are hard to miss in the *OECD Jobs Study* because the three alternative generalisations are listed with their associated policy orientations (OECD 1994b, 27):

(a*) ‘This view holds that the pace of technological change should be slowed’

- (b*) ‘Proponents of this view ... support protectionism to curb what they see as social dumping’
- (c*) ‘The response would be to reduce the intensity of competition’

The rejection of the three alternative causal generalisations and the commitment to the claim $Inflex \leftrightarrow U$ are inferentially connected to the rejection of these three policy implications. For instance, the OECD judges that reducing the intensity of competition—policy prescription (c*)—would be detrimental because it would ‘cut off economies from the forces that have always been the mainsprings of economic growth and betterment’ (OECD 1994b, 29). Since the authors of the *OECD Jobs Study* reject policy prescription (c*), they can hardly commit themselves to the causal generalisation $Comp \leftrightarrow U$. This connection is peculiar and merits emphasis: in policy-oriented social sciences, committing oneself to a causal generalisation—especially the ones invoking a ‘principal cause’—implies (defeasible) commitments to associated policy orientations. If one finds a policy prescription unsatisfactory for reasons independent of the research, such as previous commitment to other scientific, political, ideological, legal, or other types of claims, then such reasons can be used to refuse commitment to the causal generalisation. Notice how this justificatory process would seem to go in the wrong direction for a referentialist: should one not first establish the truths about the world’s causal structure through the formulation of causal generalisations and then infer what are the effective strategies to reach any objectives? From the standpoint of an inferentialist approach, the formulation of causal generalisations is not only meant (and perhaps not primarily meant) as a way to tell truths about the world, but as a step in our reasoning that reconfigures the web of inferences we are willing to be committed to. If the reconfiguration includes unacceptable policy implications, then the commitment to the connected causal claim will be avoided.

Consider again the claim $Inflex \leftrightarrow U$ to probe other connections constituting its meaning. The idea of flexibility is prevalent in economics. In thinking about the labour market, textbook economics is much about the notion of *wage* flexibility—i.e., the capacity of the price of labour to adjust to changes in demand or supply. For a student of economics, the idea of an inflexible labour market should immediately bring to mind some factors preventing the wage from adjusting to its equilibrium value. The point here is that a lot of inferential connections to notions from what is known as

‘economic theory’ contribute to the meaning of *Inflex* \leftrightarrow *U*. Beyond the simple story about wage flexibility, a generalised notion of inflexibility connects to all the potential factors preventing *structural* unemployment to be as low as it could otherwise be—where ‘[s]tructural unemployment may be defined as that part of unemployment which is not reversed by subsequent economic upturn’ (OECD 1994a, pt. 1, 66). Notice that structural unemployment—like other ‘entirely theoretical concept[s]’ (OECD 1994a, pt. 1, 66)—has no straightforward referent: it is defined relative to a stylized representation of economic fluctuations in terms of cycles with clear ‘upturns’.

Although these notions have no straightforward referents, they nevertheless allow a competent language user to determine evidential connections for *Inflex* \leftrightarrow *U*. Accepting this generalisation commits one to the expectation that different empirical proxies for the notion of structural unemployment⁷ will be increasing through time—an expectation that the OECD has supported with evidence (OECD 1994a, pt. 1, 67–68). In addition, one would expect to detect modifications in the structure of labour markets that somewhat predate the rise in these empirical proxies of structural unemployment, and which could be taken as dimensions of the inflexibility of the labour market. One part of the *OECD Jobs Study*, entitled ‘The Adjustment Potential of the Labour Market’ (OECD 1994a, pt. 2), is exactly trying to take stock of these modifications. It covers a wide range of issues including ‘government-imposed barriers to greater aggregate and relative wage flexibility’ (OECD 1994a, pt. 2, 52), e.g., minimum wage, geographic mobility, employment protection, training, unemployment benefits, and taxation. The meaning of ‘flexibility’ thus includes inferential connections to these more specific potential causes for the lack of flexibility. It is a structuring concept in that it allows one to inferentially articulate a host of labour-market factors as all being connected to ‘more or less flexibility’.

The articulation of labour-market dimensions around the concept of flexibility amounts then to the type of inferential connections that we have labelled ‘wide–narrow reinforcement’. The wide claim *Inflex* \leftrightarrow *U* is indeed inferentially connected to narrower generalisations about more specific factors affecting flexibility. The OECD is explicit about the structuring role of its wide generalisation in the quest for narrower claims:

[T]he main thrust of the study was directed towards identifying the institutions, rules and regulations, and practices and policies which have weakened the capacity of OECD countries to adapt

and to innovate, and to search for appropriate policy responses in all these areas. (OECD 1994a, pt. 1, vii)

Let us consider the narrower causal generalization: more generous unemployment benefits cause higher unemployment, $B \leftrightarrow U$. It is the inflexibility claim but focused on one specific institution among others which play a role, according to the OECD, in the capacity economies have for adapting. The claims $Inflex \leftrightarrow U$ and $B \leftrightarrow U$ inferentially support each other. In one direction, the inflexibility claim contributes to the plausibility of the benefits claim because the latter is seen as a specification of a more general lesson that one is endorsing. In the other direction, $B \leftrightarrow U$ is also rendering some plausibility to the validity of the more general $Inflex \leftrightarrow U$ because the benefits claim has its own evidential connections. In particular, one would expect that countries with more generous benefits would also be the ones with higher unemployment, and similarly that a country changing importantly the generosity of its benefits would experience in later years a change in unemployment in the right direction. The OECD interpreted the outcome of its empirical research and its survey of the existing literature as being roughly in line with these expectations: cross-country regressions have given the expected sign of the key parameter for some specifications, and historical narratives for selected countries are compatible with the belief in a positive effect of benefits on unemployment (but with a long, and hard to predict, time lag; see OECD 1994a, pt. 2, ch. 8).⁸

The mutual reinforcement that we identify between $Inflex \leftrightarrow U$ and $B \leftrightarrow U$ also holds between the inflexibility claim and the other narrower generalisations that we do not have room to discuss explicitly here—e.g., about minimum wage, hour flexibility, employment protection. The claim that inflexibility is the main cause of unemployment thus works as the keystone connecting all these narrower generalisations, and therefore all these inferential connections take part in its meaning. The literature reflecting on the contribution of the *OECD Jobs Study* highlights this unifying function of the report. It presents the report as offering a ‘view’, a ‘perspective’, a ‘framework’, and even a ‘paradigm’ for unemployment research.⁹

There are two more classes of inferential connections that are relevant to the meaning of the OECD causal generalisations, which we have called policy and research implications.

In the *OECD Jobs Study*, causal generalisations play a pivotal role between the compilation of evidence and policy strategies. The *Study* ends with nine broad recommendations, which are then subdivided in about 70 narrower statements. Only the first broad recommendation—about growth-enhancing and cycle-smoothing macroeconomic policy—is not directly connected to the inflexibility claim. All the others are meant as ways to ‘enhance the ability to adjust and to adapt’ (OECD 1994b, 43). Among them are recommendations targeting the generosity of unemployment benefits.¹⁰

The policy output of the *OECD Jobs Study* was holistic: the main thrust was to give a direction to the multitude of policy reforms to come. A decade later, the OECD gave a fair account of the status of the *OECD Jobs Study*’s recommendations: ‘The general policy recommendations presented in this study provided an overall framework for reform which has come to be known as the “OECD Jobs Strategy”.’ (OECD 2006, 24). The OECD did not believe in the piecemeal efficacy of its recommendations—i.e., it was not claiming that implementing *one* of its recommendations in a *single* country would reduce unemployment in this country. The OECD’s real commitment was that, as policy makers started endorsing its ‘overall framework’, and as they came to act on it, unemployment would decline in OECD countries.

While policy implications are concerned with reforming the subject matter of science, research implications are about reforming the science itself. Believing in the generalisations has implications on the kind of subsequent research worthy of being pursued. The *OECD Jobs Study* fuelled research on labour market institutions that were mainly focused on finding ‘rigidities’ (Boeri and van Ours 2008, 1). For economists accepting the rigidity view, the main research issue was to increase the resolution of the picture by offering a finer analysis of various institutions and the types of rigidities that they generate. We can thus say that $Inflex \leftrightarrow U$ and $B \leftrightarrow U$ are inferentially connected to a particular theoretical framework about how to analyse labour markets. This framework suggests a direction for subsequent research.

Policy and research implications of $Inflex \leftrightarrow U$ inferentially connect the claim to the stage of language exit. These two classes of implications made the *OECD Jobs Study* the kick-off of a vast policy-oriented research project, which was meant to adapt the broad strategy to the circumstances of each country:

The general Jobs Strategy framework was subsequently used to derive country-specific policy recommendations—tailored to the institutional, social and cultural characteristics of each member country—in the regular country reviews conducted by the Economic and Development Review Committee. (OECD 2006, 24)

Indeed, the *OECD Jobs Study* was followed one year later by a report subtitled *Implementing the Strategy* (OECD 1995), which paved the way to a chapter titled ‘Implementing the OECD Jobs Strategy’ in each country-specific report the next year.¹¹ Each country thus received its own list of suggested reforms. The actual policy recommendations differed across countries, but they were at the same time clear instantiations of the ones in the *OECD Jobs Study*. It is also the case that, in reading the country-specific analyses, one cannot miss the framing role of the ‘rigidity view’. In going country specific, the inferences of the OECD were profoundly guided by the framework set out in the 1994 report.¹²

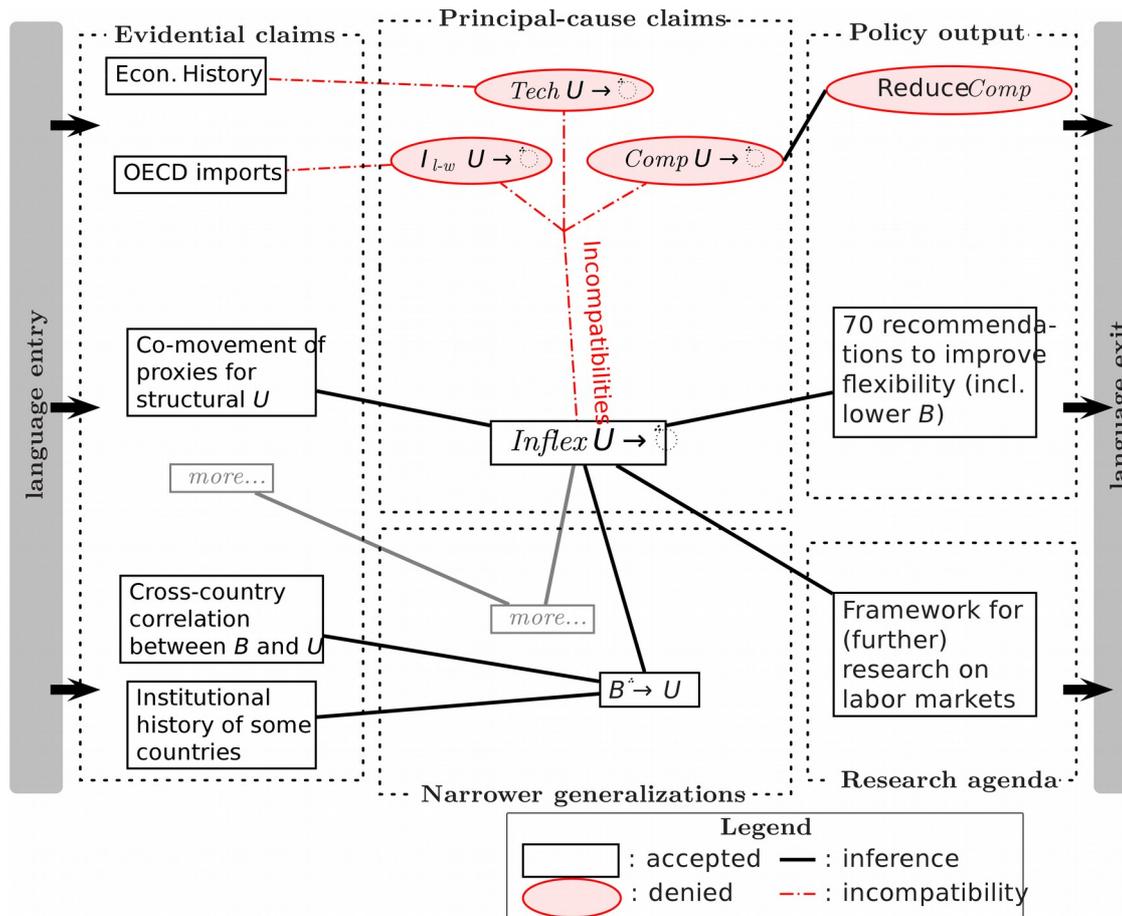


Figure 1: Simplified semantic network of the OECD's main generalisation

Figure 1 summarises the inferential connections that we have discussed. According to inferentialism, the meanings of the claims $Inflex \leftrightarrow U$ and $B \leftrightarrow U$ are constituted by their inferential connections. We draw the inflexibility claim in the middle of the network and show the five classes of propositions to which it is inferentially connected. As suggested before, we do not claim that these connections are exhaustive, and consequently do not believe that our analysis captures the entire meaning of the two generalisations on which we have focused. However, it should be clear by now how these generalisations can be said to be meaningful as a consequence of the key roles they play in *inferential practices*.

5. Discussion: Prospects for Inferentialism

In this section, we want to discuss three crucial questions that could be raised about the inferentialist approach to causal generalisations proposed here. We do not aim at exhaustive or final conclusions for any of them. We instead aim to sketch some promising answers.

First, there is an intuitive objection that some readers might have about inferentialism in general. The intuition would be that to know what can be inferred from a sentence, one first needs to know what the sentence means. Since, according to this view, meaning would come before inference, is inferentialism not committing a blatant *category mistake* when maintaining that the meaning of a sentence is constituted by the inferential network to which it participates?

This objection is based on an intuition that does not strike us as obviously correct. Consider again the claim about inflexibility discussed in the previous section. The typical answer one would receive when asking economists about the meaning of the claim ‘inflexibility is the main cause of unemployment’ would be ‘it means that factors such as minimum wages and unemployment benefits are causing unemployment’, ‘it means that we should stop blaming developing countries’, ‘it means that an effective strategy to pull unemployment down is to reduce labour-market frictions’, and so on. These answers identify part of the inferential network of the inflexibility claim. *Prima facie*, standard answers do not provide truth-conditions. The common way of explicating the meaning of these types of claims coheres more with an inferentialist approach, and we do not see how

our proposal could be bluntly rejected on the sole basis of a referentialist intuition.¹³

Second, in distinguishing between inferentialism and referentialism, are we suggesting that one must choose which is, in general, the appropriate semantic approach? To start with, we need to properly understand the relationship between referentialism and inferentialism. As we already alluded to, it is not that inferentialism denies that referential relations can participate to the meaning of sentences. It is rather that referential relations are only language-to-world relations whereas meaning is also constituted, according to inferentialism, by language-to-language relations. The question turns out to be whether it is legitimate to restrict the admissible relations to referential ones.

We submit that the appropriate approach depends on the types of claims and the goals of the semantic analysis. There are at least two cases we can think of in which a *referentialist* semantics could be said to be adequate (relative to the task). First, some utterances have as a main (if not unique) role to point at or to refer to how the world is (say, merely for descriptive purposes). For these utterances, it seems totally appropriate to stick with a referentialist analysis (and thereby benefit from the great formalism developed in this tradition). Second, the goal of an analysis might be to inquire into the truth-conditions of claims of any sort. In this case, a referentialist approach could obviously be the way to go. For example, a community might decide that, in some contexts, sentences of a certain type ought to have uniquely identifiable truth-conditions to be admissible. This is the case of much normal science where an experimental protocol should include only sentences with identifiable truth-conditions. To judge the admissibility of sentences in this context, a referentialist approach would be appropriate.

For other cases (including the type of claims covered in this article), referentialism is too restrictive. Focusing on truth-conditions leads to inappropriate conclusions if a substantial part of the meaning of the analysed sentence comes from language-to-language relations. As we alluded to in the introduction, the consequences might be dire if these conclusions are used to prescribe changes in the practice of scientists.

This prescriptive output is intended by many philosophers, including Woodward who says that his project partly involves recommending ‘what one ought to mean by various causal and explanatory claims’. He goes on to state that his project ‘recognizes that causal and explanatory claims

sometimes are confused, unclear, and ambiguous and suggests how these limitations might be addressed' (Woodward 2003, 7). But the conclusion that the analysed claims are 'confused, unclear, and ambiguous' could be an artefact of a limitation in the reference-based diagnostic tool. If this is the case, philosophers will be caught prescribing on the basis of too narrow a view of the appropriate practices. Moving to inferentialism promises to save us from this kind of mistake. The contrast between the conclusion of our referentialist analysis of the *OECD Jobs Study* in Claveau and Mireles-Flores (2014) and the conclusion of our inferentialist analysis of the same work here is evidence that misguided prescriptions are a real threat.

Third, are we not losing completely the prescriptive dimension of a semantic analysis by turning to inferentialism? Being sympathetic to prescriptive accounts, it would be a great downside of inferentialism according to us if it does not allow its users to *evaluate* and discriminate among different practices. In our semantic analysis of the *OECD Jobs Study* in the previous section, we consciously avoided evaluation, but there is, fortunately, room for it. In fact, what scientists do daily in questioning specific causal generalisations can serve as a template for how we can combine an inferentialist semantics with the evaluative stance already taken by the scientists. Although the meaning of $X \leftrightarrow Y$ is given by its inferential connections, it might be that some claims that are connected to $X \leftrightarrow Y$ must be rejected, or that some of the inferential connections one is actually disposed to make are not justified. We already saw arguments of the first type being used by the OECD to reject the three alternative principal-cause generalisations. For example, the policy recommendation to reduce the intensity of competition was rejected, which in turn contributed to the rejection of the claim 'the principal cause of high unemployment is the high intensity of competition'. Arguments of the second type—about rejecting a presumed connection—are also widespread. They have, for instance, been used *against* the OECD's generalisations. It has been argued that the cross-country correlations that the OECD was reporting in 1994 are so weak and unstable that they can hardly be linked to the OECD's generalisations by an evidential connection (Howell 2005).¹⁴

Our position is that relying on inferentialist semantics will contribute to a more principled assessment of causal generalisations. By turning the spotlight to the inferential connections, an inferentialist semantics can help us spot the weak points in the network. The semantic analysis becomes a means to enrich the scientific debate, which in turn aims at evaluating

claims and inferences. As Brandom puts it: ‘What philosophers need to do, and have been doing since Socrates, is making explicit those inferences that are implicit in the concepts that we use’ (Brandom quoted in Williams 2013, 385).

6. Conclusion

The bottom line of our inferentialist analysis of causal generalisations in policy-oriented social sciences is that the meaning of these statements is not a property of each of them taken in isolation, but a property of them as units within a network of inferential practice. We illustrate the workings of the inferential framework with a case study of the OECD research output on unemployment, which we have also analysed in a previous article (Claveau and Mireles-Flores 2014) using a referentialist framework. We propose to circumscribe the meaning of causal generalisations like those proposed by the OECD by specifying five classes of inferential connections.

The focus of referentialist semantics on a single language-to-world connection comes out as particularly narrow when analysing policy-oriented causal generalisations. Inferentialist semantics, in contrast, sheds light on the central roles played by causal generalisations in scientific cognition. These roles are what make scientific generalisations meaningful. And these roles can also explain why there is such a big market for causal generalisations in policy-oriented social sciences. In general, causal generalisations are valuable because, even though they might not have a clear referential relation to the world, *they give structure to our cognition*, i.e., they help us extract salient elements from the ocean of data, connect elements that might otherwise seem unrelated, collect new elements in a systematic way, and form plans of action. Given that policy makers want tools to cope with the world, it is totally reasonable for them to ask for these great tools that are causal generalisations.

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1 Other labels usually given to this approach are: representationalist, truth-conditional, extensional. Note that the dominant approach to meaning starts with a theory of reference, but does not stop there. Most thinkers then add another dimension to account for the fact that two extensionally identical expressions might intuitively have different meanings (Speaks 2011), e.g., Frege's ([1892] 1960) famous evening star and morning star.

2 There are now many labels and many species of inferentialist semantics, which include: conceptual role semantics, inferential role semantics, functional role semantics, procedural semantics, and use theory of meaning. For discussions of the different species of inferentialism, see Block (1998); Whiting (2009); and Peregrin (2012). Similar ideas can also be found in other philosophical traditions, for instance in French structuralism, starting with Saussure's theory of language as *pensée organisée* (de Saussure [1913] 1995, pt. 2, ch. 4) and then influencing thinkers such as Foucault (1969) with his *formations discursives*. In the next section, we lay out specifications that are characteristic of what Brandom (2000, 28; 2007, 656–658) calls 'strong inferentialism' (which is neither 'weak' nor 'hyper-inferentialism').

3 This is the case, for example, in most versions of the currently in vogue interventionist account in which the truth conditions of causal claims are to be defined in terms of the constituent terms included in the causal claim and of their relations to their referents. This is typically done by specifying necessary and sufficient conditions for different causal concepts (see, e.g., Hausman 1998; Pearl 2000; Woodward 2003). An investigation of whether proponents of the interventionist or any other causal theory *explicitly* endorse referentialist semantics is a separate task which differs from the main aim of the present article.

4 The inferentialist analysis proposed here is inspired by Julian Reiss's inferentialist theory of causal claims (Reiss 2011, 2012, 2015). Our analysis can be seen as an attempt to make his general account better suited to the semantic analysis of policy-oriented causal claims. Our classification corresponds only partially to the one he offers; for a discussion of how the two classifications relate, see Claveau (2012), 51–52.

5 For a contrast between the analysis offered in this section and the results of a *referentialist analysis* of the meaning of the causal generalisations in the OECD *Jobs Study*, the reader is referred to our previous article (Claveau and Mireles-Flores 2014) already mentioned in the introduction.

6 For the detailed argument leading to this conclusion, see Claveau (2012), sec. 1.3.

7 The OECD (1994a, pt. 1, 66) recognizes that 'there is no direct measure of structural unemployment' and uses three proxies to measure it indirectly: (a) the non-accelerating wage rate of unemployment (NAWRU, based on the relationship between the

unemployment rate and the change in wage inflation), (b) the rate derived from the Beveridge curve (the relationship between the unemployment rate and the vacancy rate), and (c) the rate derived from the Okun curve (the relationship between the rate of unemployment and capacity use). For a detailed account of the OECD method of measurement at the time, see Elmeskov and MacFarlan (1993).

8 The ‘*roughly* in line’ is important here. In 1994, the evidence was fragmentary and polyphonic. We cannot do justice to the complexity here. The interested reader is referred to OECD (1994a), pt. 2, ch. 8.

9 All these terms are, for instance, used in the (critical) volume of Howell (2005). The authors also talk about an ‘orthodoxy’, and make the connection with neoliberal ideology. It seems indeed correct to say that the inflexibility claim is also inferentially connected with even wider claims about the purported ‘efficiency’ of free markets. We will not go down this road in our semantic analysis, and will leave for another time the inferentialist treatment of ‘ideology’.

10 The two recommendations most directly concerned with unemployment benefits are: ‘Restrict UI benefit entitlements in countries where they are especially long to the period when job search is intense and rapid job-finding remains likely’; and ‘Reduce after-tax replacement ratios where these are high, and review eligibility conditions where these require little previous employment history before drawing benefits’ (OECD 1994b, 48).

11 Starting with the Italian version of the *OECD Economic Surveys* in January 1996 (OECD 1996a), each country got its own chapter. Some countries, e.g., France, had their chapter published only in 1997. The implementation of the recommendations was further monitored at a country level in later editions of the *OECD Economic Surveys*, and at the cross-country level in many publications (e.g., OECD 1998, 1999).

12 A fascinating implication of the rigidity view is that two countries that seemed to have fairly good unemployment performances were treated quite differently if one appeared ‘more rigid’ than the other. This contrast is stark when comparing the reports of the United States (OECD 1996b) and of the Netherlands (OECD 1996c). These two countries had similar unemployment rates between 1993 and 1995 (averaging at 6.2%), rates which made other countries envious. The ‘flexible’ United States were offered a light medicine while the ‘rigid’ Netherlands had to act across the board: of all the recommendations about ‘labour market policy and institutions’, only 10% were applicable to the United States according to the OECD in contrast to 50% for the Netherlands (OECD 1999, 47). The United States had the smallest number of recommendations in the group of 29 countries, while the Netherlands was in fourth position—after Germany, Finland, and Norway—for the toughest medicine.

13 Note that scholars trying to defend inferentialism have also provided more principled responses to this intuition-based objection. For instance, Jaroslav Peregrin (2014, 11–14) maintains that the objection is a non-starter against a normative version of inferentialism such as the one developed by Brandom (1994, 2000).

14 Furthermore, the OECD recognised later that its inference from its main causal generalisation to policies emphasising deregulation of the labour market was not sound, since ‘flexibility’ might also be achieved through wise regulation instead of deregulation (OECD 2006, 19).