

## The discourse of innovation: Socio-discursive practices in the stages of innovation projects

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The term 'Discourse of Innovation' (hereinafter DI) is a wide and imprecise sequence of words which, to be conceived as an object of scientific analysis, must be specified. With this consideration in mind, the present document or *prolegomena* —intended to all members of the Project regardless of their function— describes two key points: on the one hand, the basic theoretical assumptions and terminological definitions necessary to specify what we mean by 'DI' and how it will be researched; and, on the other, both the scientific justification and the originality claims of the Project.

The purpose of this manuscript is to emphasize the discursive dimension of innovation. For this, we will first specify the concept of 'innovation' (for further details, see López, Mejía & Schmal, 2006; Rikap, 2012; Kotsemir, Abroskin & Meissner, 2013; Kotsemir & Meissner, 2013). In doing so, definition, justifications, and classification according the Oslo Manual (OECD, 2015) will be provisionally (and uncritically) used:

“What is innovation and why is it important? An innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations (OECD, 2005).

Innovation is crucial for society by contributing to economy growth and addressing social and environmental challenges. As for growth, innovation is paramount at all stages of development, specifically, for creating and transferring new technologies. Innovation may be approached from several dimensions, including (1) the degree of novelty, (2) the type, i.e. product or process, (3) the impact whether radical or incremental, and (4) the source, i.e., technological or non-technological.

Innovation is a transversal, non-declared goal or explicit *desideratum* of every scientific discipline and field of human action. The term 'innovation' might be traced back to the notion of “Creative Destruction”, introduced by the Capitalism critical thinker Joseph Shumpeter, who theorized about the role of innovations in long range economic cycles. Shumpeter (1934) proposed the existence of an “entrepreneur geist” which, let us say, is at the ground of what we know nowadays as “business, management and entrepreneurship”, and has played a prominent role for innovation studies.

### Innovation as a Social Practice

Innovation is, as any field of human action, a world of words and discourses as well as a very complex form of social activity (Fairclough, 2001, 2002, 2003) in which several actors coordinate to accomplish a specific purpose. According to the definition of the OECD (2005), the final goal of this coordinated action would be the “implementation of a new...” (see definition above).

Innovation, as any other social practice, consists of different elements, such as “Activities; Subjects, and their social relations; [...] Objects; [...]; Values, and Discourse” (Fairclough, 2001: 231). It is important to highlight the fact that is not possible to analyze discourse without first determining the social context, i.e. identifying the elements composing the social practice. Elaborating a pitch, raising funds, drafting a prototype, doing a market research, experimenting at the lab, making a business plan, coaching sale force and describing the advantages of a new technology are examples of common activities of innovation where discourse is vital.

Individuals (a student, a scientist, a researcher, a manager, a teacher, an investor, an innovator, a consumer, policy makers, etc.) as well as collectives (consumers, countries, states, geographical regions, public institutions, universities, enterprises, industries, clusters, etc.) may be involved in the innovation process. Here, the relations among these actors may derive from the roles they assume. For instance, for starting and scaling their ideas, innovators need scientists to conduct research, (angel) investors to fund prototypes, sale force (or a way) to commercialize the product, and consumers to buy the product, service or method. Thus, all actors relations are performed in a social context which is constrained by public policies, i.e., the innovation ecosystem.

The relations participants establish in the innovation ecosystem are highly complex. In our project, the principal unit of analysis to approach the process of innovation is what we call 'innovation process (IP)'. Actors may be classified according to their degree of participation in the IP, that is to say, directly involved actors (as the innovator, the investor, the user) or indirectly involved actors (as the Economy minister or an intermediary agency executive). A single actor may play one or multiple roles in the same or in different IPs. Think of a *pitch trainer*. He/she might be related to multiple IPs but only as an indirectly involved actor. In our project, we are interested in analyzing relations of participants with multiple roles as well as directly and indirectly involved actors; in other words, we are concerned with the micro level and the context of innovation.

Although a nominalization, innovation is both a product and a process. Note that the product is not part of the definition of the Oslo Manual. In fact, the definition is an abstract depiction of a process, where human agents are absent. Common people (e.g. consumers) do not interact with such abstract process, but with their products, results, or outputs. Typical (not all!!!) innovation/innovative products are smartphones, cars, TVs, medicines, apps.

Traditional studies of innovation emphasize the processual conception of innovation (i.e. the idea that innovation can be described as a sequence of stages). According to Rogers (2003), at any innovation process six stages can be identified: 1. Problem recognition, 2. Basic and applied research, 3. Development, 4. Commercialization, 5. Diffusion and adoption, and 6. Consequences. Although some actors may participate in several stages, each actor tends to play a specific role at each stage. For instance, innovators play an essential role in stage 1 and scientists and researchers are paramount for stage 2. In our project, we are interested in both the process and the products of innovation.

Values are central in social practices. Values are shared beliefs that motivate action. In other words, values are the subjective expression of how people judge different dimensions of reality in polar terms. For example, aesthetically speaking, we can classify things as beautiful or ugly; in practical terms, we may talk about useless or useful technologies; ethically, we evaluate behaviors as right or wrong (Charaudeau, 2004).

Values may be realized through abstract nouns representing what is expected and desirable in specific social practices. For instance, 'trust', 'fairness', and 'competition' are key values for business; efficacy and speed are expected values for technology; and ecological sustainability and economic growth are crucial for society. In this context, there is a special issue with the term 'innovation'. As we have been arguing so far, innovation is a social practice that, as any other social activity, is motivated by values. However, it is also a value per se. In fact, doing things differently (i.e. a general definition of innovation) is a far-reaching purpose in many fields of knowledge (science, education, economy). Thus, innovation is both a social practice motivated by values and a value itself. Furthermore, values are relevant for researching the DI since they can be related to other categories, such as 'ideology' (van Dijk, 1998),

'normative position' or 'Discourse' (with capital D) of the actors involved in the social practice of innovation.

Figure 1 shows some elements of innovation as a social practice:

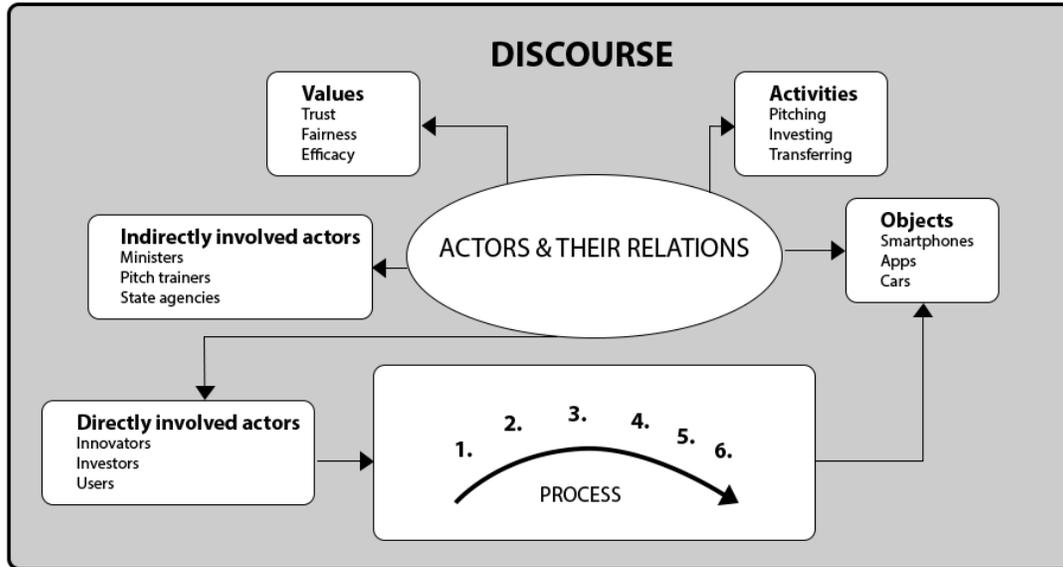


Figure 1: Some elements of Innovation as a social practice. Legend: 1. Problem recognition, 2. Basic and applied research, 3. Development, 4. Commercialization, 5. Diffusion and adoption, and 6. Consequences. Figure 1 shows how discourse shapes (is the background of) the elements of social practices or, in other terms, how discourse is in a dialectical relation with those elements.

### Discourse

To specify what we understand by 'Discourse of Innovation' (DI), we must first delimit the word 'Discourse' given its polysemy (Sabaj, 2008; Charaudeau, 2000; Charaudeau & Maingueneau, 2002; van Dijk, 2001). The notion of Discourse is closely related to other terms (such as text, genre, communicative event or situation, context), which, in some approaches, overlap one another. Obviously, we will not resolve all this conceptual controversy in this work; we will synthesize operatively some of the main conceptions of discourse instead.

Different approaches coincide with the idea that 'discourse' mainly refers to three dimensions occurring simultaneously at any communicative event:

1. **Discourse as a set of values or system of ideas**
2. **Discourse as actions or interactions to accomplish determined purposes in social life**
3. **Discourse as a text**

#### 1. Discourse as a set of values or system of ideas

Discourse has a cognitive, mental, and subjective dimension. Discourse is the way people represent the world (Fairclough, 2001, 2002, 2003, 2005, 2013). This is what we call Discourse with capital D. This dimension of discourse reveals the ideology, i.e., the set of values and beliefs an individual or a group of individuals have over some aspect of the physical or abstract world. This aspect covers what Foucault calls Discursive Formation. This definition of ideology does not have the pejorative sense (i.e., a set of wrong ideas) that capitalist thinkers have attributed to Marxist ideas (van Dijk, 1998). To explore this dimension, the discourse specific actors elaborate about other actors, objects, or entities can be described. Subjects' set of values and beliefs functions as lenses through which they represent the

world. These values are also the criteria subjects use to classify the world from different dimensions (ethical, practical, aesthetical, political) with different polarities or values (right/wrong; useful/useless; beautiful/ugly; liberal/conservative) (Charaudeau, 1992). Ideology is thus a paramount element of discourse analysis as it allows explain discursive behavior.

## **2. Discourse as actions or interactions to accomplish determined purposes in social life**

Discourse is social action. It is the means through which people act and interact in society (Fairclough, 2001). This dimension is related to the pragmatic level of discourse, i.e., how people use language when involved in social activities. The term 'genre' has been broadly used to refer to this dimension of discourse (Charaudeau, 2004b; Swales, 2004). From our approach, this dimension also includes the typical organizational structure patterns that different types of texts adopt when they are used for specific purposes. The definition of a genre (discourse as action) requires, among other things, the identification of the participants engaged in the communicative event, the relation among those participants, the analysis of general schematic structures and textual sequences, and, most important, the definition of the purpose of the interaction (Charaudeau 2004a; Swales, 2004).

## **3. Discourse as a text (semiosis)**

Discourse also has a material textual semiotic dimension. Text corresponds to the material units people interexchange when interacting discursively. Keep in mind that 'text' refers to any form of semiosis (oral, written, visual, iconic, formulaic). Texts conveys a way of being or style in terms of Fairclough (2013). Text analysis is intended to identify the elements or the resources people use to convey meaning. Meaning is symbolic and social dependent as it takes its values from specific cultural contexts. Text analysis may include categories of structural levels of language, such as the description of lexis and terminology, the use of specific grammatical forms (as nominalizations, stance markers, hedges, boosters), the description of prototypical textual sequences (description, narration, argumentation), the classification of textual markers, the research of multimodal elements, or markers of subjectivity and evaluation. Texts are situated in communicative events (actions) and they correspond to material forms through which we gain access to what people think (ideas and values) about themselves or about the world.

### **The DI as an object of study**

So, what is the Discourse of Innovation (DI)?

1. The representations, values, ideologies, and normative positioning (Chiapello & Fairclough, 2002) of all the actors involved (directly or indirectly) in the process of innovation, the objects of innovations, the participants involved and all the other elements of innovation as social practice (see Figure 1). The research of the representational dimension of the discourse of innovation is equivalent to explore how people conceive innovation and to determine how they position themselves about innovation, i.e., what people consider to be good/bad innovation.
2. The actions and interactions people perform to accomplish the process of innovation. The social dimension of DI is manifested in communicative events, genres or recurrent interaction patterns that configure the practice of innovation. The research of this communicative, functional, or interactional dimension of DI is equivalent to analyze what different actors do or what kind of socio discursive activities they engage in when they innovate.
3. The specific semiotic material resources actors use to convey specific meaning and values, and specific ways of acting and interacting when the actors coordinate to innovate. The textual dimension of the DI includes all kind of semiotic elements (images, words, sounds, graphs, icons, formulas, among other). The research of this textual material semiotic dimension of DI is equivalent to explore the types and organizational patterns of texts used to innovate, and to analyze the different linguistic forms used to convey meaning in this specific context.

The DI is the set of cognitive (ideas and values) and social elements (actions, interactions, communicative events) that are manifested in texts (forms of semiosis) used when different actors coordinate to accomplish a specific social purpose (“the implementation of a new or significantly improved product (good or service), or process [...]” (OECD, 2005). This definition is wide enough to include not only the elements of the social practice (see Figure 1), but also the tenets of other discursive approaches.

As any other discourse, the DI is produced and interpreted in context. Context is here understood as the set of material or immaterial elements necessary to produce and interpret the DI. Our approach to discourse and context inherits the following theoretical and analytical framework: The SPEAKING model of Dell Hymes (1972), discourse as a set of restrictions and strategies or a contract of communication (Charaudeau, 2004b), the genre analysis or the functional elements of discourse in specific settings (Swales, 2004), and the analytical dualism conception of discourse (Chouliaraki & Fairclough, 2010; Fairclough, 2001, 2002, 2003, 2005, 2013).

Due to its inherent complexity, any cultural phenomenon, organization or entity that is pretended to be scientifically understood poses huge challenges to the eyes of the researcher. The DI is not an exception. Scientists use abstractions to face the complexities of scientific objects. These abstractions function as lenses that shape the form of our objects of study and allow us to explore them.

To delimit the DI as an attainable object of study, we will bound it with the next criteria:

1. Geographical: we will explore the DI in the Chilean “ecosystem”.
2. Type of actor: although we are interested in all actors involved in the innovation process, we will be focused on directly involved actors (i.e., we will zoom in the micro and meso levels). For example, we will be more likely to collect the specific texts used by funders and investors of a specific project in specific stages of an innovation process than to analyze data from an indirectly involved actor representing the discourse of the ecosystem (let us say, the discourse of the Economy minister about public policies for economic development).
3. Type of data: we will focus our analysis on what we call ‘primary attested data’. For example, we are more interested in analyzing the genres and texts used by a founder in the innovation process, than analyzing his/her views of innovation through an interview (secondary data). More specifically, we will use secondary data to access and select the sample of primary data.

#### **Epistemological tenets about the analysis of the DI**

In addition to the delimitation of the DI as an object of the study, we will adopt some epistemological tenets which functions as a normative methodological guidance:

1. **The analysis of the DI must be theoretical and discipline heterodox:** It is not convenient to use a single discourse framework to conduct discourse analysis. Instead we must be open to include categories from theories that may be even contradictory by principle. The selection of specific categories from determined theories will depend more on the nature of the research questions than on the elegance of the theory used to answer them. We will also apply this parsimony principle for category selection, favoring productive categories, i.e., simple categories that allow analyzing and interpreting essential elements of the DI. The DI is, by definition, a distributed practice in the sense that it may not be attributed to any specific field of knowledge. Innovating is a trans-professional, trans-disciplinary, and trans-sectorial socio-discursive practice. This is the reason why it is not possible to account for the DI from a single discourse theoretical framework (professional-, academic-, scientific- discourse).

2. **The analysis of the DI must be critical:** the term 'critical' here is used in two specific senses proposed by Fairclough when he calls for a Critical Discourse Analysis: a) critical means driven to identify and describe non-apparent hidden relations between elements of discourse and elements of the world. These relations might be causal, temporal, spatial, intentional, among other types; b) critical means revealing power relations among social actors. This implies a specific political view of reality (this is what Fairclough 2005 calls Critical Realism).
3. **The analysis of the DI must be dialectical:** following the epistemological principles of analytical dualism, dialectical approach, or interfaces analysis, we are not interested in one dimension of discourse, but in the relation between those dimensions. As stated by Fairclough (2005), there is a French inspired tradition that emphasizes the cognitive nature of discourse, so they focused on the origins and changes of certain ideologies or discourse formations in terms of Foucault. Other line of research is devoted to a detailed analysis of linguistic resources which are typically called textual analysis) used in discourses. We (as Fairclough, 2005), instead, will conduct a dialectical analysis in two senses. First, because we search patterns of relations among different dimensions of language in use (cognitive, social, and textual). For instance, we will explore what kind of resources (textual dimension) are used to convey specific values (cognitive dimension). of specific participants (social dimension). Second, we conduct a dialectical analysis, because, as we shall explain (see originality claim 2 and 3), we are interested in the description and interpretation of language use according to socio-relational variables.
4. **The analysis of the DI must be rigorous and validated:** Our discursive approach seeks to ensure the quality of our analysis, using strategies to validate our description and interpretation of discursive data, in this case, the 'DI'. This caveat arises as we have been quite critics of the scope of the methods and hypothesis used in discourse analysis (Sabaj, 2008; Astudillo et al., 2016; Antaki et al., 2006). Thus, we will use triangulation techniques, including peer review, inter-rater reliability measures of analysis, discussion groups or interviews.

### Originality claims

There are 3 specific originality claims which inspire and scientifically justify the aims of our research project:

1. **Discursive trajectories in the DI:** At a conceptual level, we propose to explore the notion of discursive trajectory (DT). A DT is intended to capture the fact that every discourse (and specially the DI) is mediated by time. DT might be internal or external. Internal DT is the classical *dispositio*, i.e., the way a discourse unfolds its meaning. For example, Green (2004) hypothesizes about the best way to arrange *logos*, *pathos*, and *ethos* in an innovation discourse. Varas (2017) describes trajectories of linguistic expression of appraisal in technological transfer videos. DT might be external or processual. As innovation is a time-mediated social practice, the DI unfolds along the process. In this sense, the DI may be described as a set of genres (*Genre chains* in terms of Swales, 2004 and Navarro, 2015) taking part of every stage of an innovation process or as the trajectory of a specific genre through the different stages of an innovation process (for instance, the changes in the types of pitch used in every stage).

2. **The socio-discursive approach to the DI:** at a methodological level, our approach differentiates from other frameworks in two relevant aspects. First, we adopt a sociological approach to collect discursive data. This means that the discursive material analyzed reflects a social hierarchy or structure (i.e., it is socially relevant). To access socially relevant discursive data, it is necessary to identify relevant actors (social and epistemic authorities) and their interactions within a specific social structure. Commonly, discourse analysts collect data ignoring such structures. Second, as the main emphasis of this research project is discourse analysis we conduct an intensive multi-layered discourse analysis, integrating content, functional, and appraisal dimensions.
  
3. **The DI and the extra-linguistic:** at an empirical applied level, we are interested in relating the DI with extra-linguistic elements, such as: the degree of development of an idea (success); the amount of money raised, the type of actor using the discourse, among other extra-linguistic aspects. Although there is evidence of the criteria used by investors to evaluate an innovation project, there is scarce linguistic and discursive description of the genres of innovation according to these kinds of variables.

### Research Matrix

The aim of the project is to explore, describe and analyze the discursive practices associated with the field of innovation, through an approach that combines discourse analysis and sociology of science. The project seeks to provide knowledge guided by the originality claims previously defined. The research hypotheses/questions of the project aims at relating the discursive aspects of the genres of innovation with the extra-linguistic attributes of the projects (and their actors).

Originality Claim	Questions	G. objective	S. Objective	Data	Theories
1	Which genres are used through the innovation process? What are the features of the DT of innovation processes?	To describe the DT (discourse trajectories) of innovation processes	To identify and characterize the genres in every stage of an innovation process	Textual material produced by directly involved actors (primary discourse data) in different stages of different innovation process	Critical realism Genre analysis Contract communication theory SPEAKING model
2	How do the DTs of innovation process vary according to socio-relational attributes of the actors who produce them	Compare the genres that occur in every stage of an innovation process according to the socio-relational attributes of the actors that produce them	To establish the relationship between the discursive characteristics of the genres of innovation and the socio-relational properties of the actors that produce them	Textual material produced by directly involved actors with different socio-relational attributes.	Critical realism Genre analysis Contract communication theory SPEAKING model Social network analysis Sociology of science
3	How do genres produced during the different stages of an innovation process vary according to the extra-linguistic variables of the process?	Characterize the genres that are produced in the stages of an innovation process according to the extra-linguistic attributes of the process	To establish the relationship between the discursive characteristics of the genres of innovation and the extra-linguistic attributes of the process	Textual material produced by directly involved actors (primary discourse data) in different stages of innovation projects, considering the different stages of development, amount of funding, among others)	Critical realism Genre analysis Contract communication theory SPEAKING model Social network analysis Sociology of science

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