

**AN ESSAY ON A GENERAL THEORY OF
QUALITATIVE RESEARCH IN DIDACTICS OF
LANGUAGES-CULTURES**

Christian PUREN

Professor Emeritus
Jean Monnet University (Saint-Étienne, France)

First electronic edition www.christianpuren.com, September 2024, 58 p.

www.christianpuren.com/mes-travaux/2024i/

TABLE OF CONTENTS

(clickable links)

General introduction	2
1. Models, systems and systemic models.....	4
1.1 The concept of "model" in DLC	4
1.1.1 The model, indispensable mediator between theory and practice	5
1.1.2 The model, a simplified representation of a reality destined to become more complex	5
1.1.3 The different functions of models	7
1.2 The modeling process.....	8
1.3 The system concept	9
1.4 System modeling	11
2. Research in DLC	14
2.1 The reference project: intervention	14
2.2 The cognitive reference operation: conceptualizing field data.....	16
2.3 The reference approach: engineering	17
2.4. The reference tool: modeling.....	18
3. The research system model in DLC	18
3.1 System components.....	19
3.1.1 Field data.....	19
3.1.2 Methodological models.....	20
3.1.2.1 Practical models	21
3.1.2.2 Praxeological models	21
3.1.3 Theories and theoretical models.....	22
3.2 External dynamics.....	24
3.2.1 System inputs	24
3.2.1.1 Empirical inputs	24
3.2.1.2 Methodological inputs	25
3.2.1.3 Technology inputs	26
3.2.1.4 Social inputs.....	29
3.2.1.5 Theoretical inputs.....	30
3.2.1.6 The historical example of inputs in the case of direct methodology	31
3.2.1.7 The example of "models" in "3M" (Matrix - Models - Methodology) modeling... ..	32
3.2.2 System outputs	33
3.2.3. Reinputs and new inputs into the system	33
3.3 Internal dynamics	34
3.3.1 Recursive processes	34
3.3.2 The linear process	37
3.3.2.1 Methodological application.....	37
3.3.2.2 Technological application.....	37
3.3.2.3 Theoretical application	38
3.3.2.4 Theoretical implication	39
3.3.2.5 Didactic transposition	41
3.3.2.6 Rhetorical mobilization.....	43
General conclusion	45
Bibliography	47
Appendix 1: Diagram 1, "The general system of DLC research"	55
Appendix 2: Diagram 2, "The different types of DLC research"	56
Appendix 3: Diagram 3, "Typology of didactic models in DLC"	57
List of figures and tables	58

Frequently used acronyms

DLC: Didactics of Languages-Cultures

FFL: French as a Foreign Language

"There is nothing so practical as a good theory." Kurt Lewin

"There is nothing so theoretical as a good method." Antony G. Greenwald

"We reason only in terms of models." Paul Valéry

General introduction

The present 2024 essay is an almost complete rewrite of a first essay I wrote on the same theme and published in 2015 on this same site www.christianpuren.fr: *Théorie générale de la recherche en didactique des langues-cultures. Essay* ([2015a](#))¹. In this new version:

-I take into account my subsequent research and publications, in particular:

-from a 2020 article entitled "*Le système des modèles en didactique des langues-cultures²: modèles pratiques, praxéologiques, théoriques, didactologiques*" ("The system of models in the didactics of languages-cultures: practical, praxeological, theoretical and didactological models", [2020a](#)), in which I modified my typology of disciplinary models,

-and a 2022 essay entitled *Modélisation, types généraux et types didactiques de modèles en didactique complexe des langues-cultures (Modelling, general types and didactic types of models in complex didactics of languages-cultures, [2022f](#))*, in which I present a typology of models: the correspondence model, the cartographic model, the procedure model, the process model, the network model, as well as the type of model to which the one that is the subject of the present essay belongs, the systemic model;

-and I focus exclusively on the discipline of "didactics of languages-cultures" (henceforth "DLC"), removing the comparison between it and Management Sciences (or "Business management") that I systematically developed in the 2015 version. But this comparison remains, in my view, entirely valid: it was it that enabled me to design the overall model of the DLC research system that I reproduce here identically in [Appendix 1](#) (from now on, I'll refer to it as "Diagram 1")³. I

¹ All references of the year + letter type (e.g.: 2015a) or simple three-digit number (e.g. 023) in clickable links (e.g.: [2015a](#), [023](#)) without author specification refer here to my own publications. Codes with "-en" at the end indicate texts in English (e.g. "2024a-en"). The others indicate French texts (e.g. "2022f").

² In this essay, you'll find, in some of my texts or their titles, occurrences of the two other expressions I've used in the past like some colleagues, "didactics of languages" and "didactics of languages and cultures". On the justification of this expression "didactics of **languages-cultures**", which I have been using systematically for some twenty years now, cf. [2022f](#), chap. 3.1.3, pp. 12-13.

³ During the first draft of this essay, this schema underwent numerous modifications. It has not been modified for this second draft, but to use the expression of A. Michael Huberman and Matthew B. Miles (1991), it is still only "a conceptual framework, [*i.e.*] simply a momentary version of the map of the territory explored by the researcher" (p. 54).

remain indebted to Albert David, then Professor of Management at Université Paris-Dauphine, for his project to develop a "universal theory of management research". His article, entitled "*La recherche-intervention, un cadre général pour les sciences de gestion?*" (« Intervention research: a general framework for management sciences?») was published in 2000. It is still [available online](#) (July 2024) on the website of AIMS, the International Association for Strategic Management.

I present here a general theory of DLC research as I have developed it

–by conceptualizing and selecting key concepts based on my experience as a teacher, researcher and research trainer in my discipline, as well as on analysis of the work of other researchers and research trainers;

–by theorizing it, inspired by work on what can be grouped together under the name of "systemics", or "systems theory";

–finally, by modeling it in such a way as to give it the concrete form of a dynamic graphic representation –a "systemic model", to be precise– which brings together and links together all the key concepts while maintaining relationships with its external environment⁴.

The aim of this essay is to provide readers with the most comprehensive modeling possible of the DLC research system, so that they can exploit for themselves the various functions that models can perform, and which I present in detail in [chapter 1.1.3](#): the cognitive function (they will have a better overall perception of the configuration and operation of this system), the pedagogical function (they will have a better understanding of this system, and the way they personally conceive research), the heuristic function (the model will suggest new ideas) and the decision-making function (the model will give them the desire to embark on new personal or collective research).

This overall model can be found in [diagram 1](#). It's very complex, and I'll be constantly referring readers to it: I can only advise them, therefore, to print it out, so as to have it constantly in front of them as they read this essay. They will probably find it useful to do the same for the other two appendices 2 and 3 (["diagram 2"](#), ["diagram 3"](#)), to which certain passages in this essay will also refer.

From the point of view of its research methodology, the present essay of 2024 is to be related, in addition to my two texts cited above ([2020a](#) and [2022f](#)), to the following four publications, which already prepared it (they date from the late 1990s-early 2000s):

–An article entitled "*Concepts et conceptualisation en didactique des langues: pour une épistémologie disciplinaire*" (« Concepts and conceptualization in language didactics: for a disciplinary epistemology", [1997b](#)), with in particular my presentation of A. Michael Huberman A. & Matthew B. Miles *Analyse des données qualitatives* (1991). The research approach I presented above (conceptualizing –theorizing - modeling) is largely inspired by this work.

–A book chapter entitled "*Comment théoriser sa pratique?*" ("How to theorise your practice?", [1999h](#)), in which I propose, on pp. 28-30 in particular, a modeling practice

⁴ I return to [chapter 1.2](#) on this process.

session on the different origins of personal teaching methodologies (this model is reproduced here on [chap. 3.2.1.2](#) below).

–Chapter 5 of my DLC Research Methodology course, "*Mettre en oeuvre ses méthodes de recherche*" ("Implementing your research methods"), republished in English under the title "Methods and types of research in didactics of languages-cultures" ([2022h-en](#)). Its main aim is to present and comment on a typology of types of university research in DLC, reproduced here as [Diagram 2](#).

–Dossier No. 3 of my course on "*La DLC comme domaine de recherche*" (« DLC as a field of research »), "*La perspective didactique 1/4. Modèles, théories et paradigmes*" ("Didactic perspective 1/4. Models, theories and paradigms", [DLC-DR3](#)). As can be seen from its title, it addresses the epistemological issues on which the whole of this essay is based.

1. Models, systems and systemic models

There is a close relationship between the concepts of "system" and "model", as the French engineer and economist Bernard Walliser reminds us in his 1977 book *Systèmes et modèles. Introduction critique à l'analyse de systèmes (Systems and models. A critical introduction to systems analysis)*:

*The concept of system is in fact inseparable from the concept of model, conceived as a **representative system of a concrete system**⁵. Any real system is only known through representative models (individual mental representations or formally explicit representations). Conversely, any model can be considered as a specific system, whether concrete (model) or abstract (set of signs). (1977, pp. 10-11)*

This explains why another epistemologist, Jean-Louis Le Moigne, can establish an equivalence between the two corresponding theories right from the title of his 2006 book, *La théorie du système général. Théorie de la modélisation (General system theory. Modelling theory)*.

In this first part, however, I must introduce the notions of model (chap. 1.1), system (chap. 1.2) and systemic model (chap. 1.3). This presentation will be limited to what I feel is essential to introduce the theme of this essay, namely the modeling of DLC research. For further details, I refer readers to my essay on modeling in DLC already cited above ([2022f](#)).

1.1 The concept of "model" in DLC

As Sinaceur observes (quoted by Alex Mucchielli 2006), the "model" presents...

... a wide variety of meanings in the sciences. A model can be the simplification of a theory, the analogical reproduction of a concrete reality, the logical formalization of a set of properties, the equation of a set of observations and measurements, a concrete sample of a particular operation, or even a material realization of the "maquette" type. (p. 2)

This authorizes me to propose here the definition that seems to me the most appropriate for DLC: it happens –and this is of course no coincidence– that it is very close to that of the Human and Social Sciences from which I borrow the modeling approach I propose, that of A. Michael

⁵ Emphasis added. B. Walliser gives an equivalent definition in his book of his 2011 book: a model is "a formal system that represents a real system" (p. 9).

Huberman A. & Matthew B. Miles: a model, in the sense of a product of modeling⁶, **is a schematic representation of reality based on interrelated key concepts, which aims not to represent reality in itself, but to represent it to oneself.**

1.1.1 The model, indispensable mediator between theory and practice

At the start of my 2022 essay on modeling in DLC, I explain why models are indispensable in DLC:

*All didactic realities are inherently complex: they correspond not to **problems** that can be solved, but to **problematics** that can only be managed (cf. [023](#)). That's why, for almost three decades now, in contexts where the epistemology of the discipline is at stake, I've been talking about the "**complex** didactics of languages-cultures"⁷.*

However, the problematics can only be managed by means of models, which are:

–neither applications of theories⁸: these limit their field for reasons of internal coherence and opposition to competing theories;

–nor reproductions of practices: these are limited because they are adapted only to the environments in which they were developed. ([2022f](#), p. 2)

The model, by its very epistemological nature, is an "interface" between theoretical abstraction and concrete practice. As we have just seen with Sinaceur, its meanings are very diverse, but the essential function it assumes is constant: "A model always acts as a mediator between a theoretical field of which it is an interpretation, and an empirical field of which it is a formalization" (p. 2.). Bernard Walliser, in a 2007 article entitled "The functions of economic models", points to the "empirical function" as one of the functions of models, which he defines as follows: "A model establishes itself as a powerful framework for confronting theoretical ideas with empirical data" (p. 5).

In chapter 5 of my online course [DLC-DR3](#)⁹, I quote (pp. 9-10) a passage from Émile Durkheim where, reflecting in the early years of the XXth century on the status of practice and theory in pedagogy –a discipline even closer epistemologically to DLC than sociology, because its aim is the same, that of improving the teaching-learning process– he ends up defining pedagogy as "a practical theory": to resolve the paradox expressed by this formula, we need only insert, between the two concepts, that of "model" with its mediating function.

The model provides this mediation in both directions of the theory ↔ practice relationship. In the sense –to take up the two concepts used in [diagram 1](#)– of **conceptualization** (or induction from practical knowledge and experience to theory), and in the sense of **mobilization** (from theory to implementation in practice).

1.1.2 The model, a simplified representation of a reality destined to become more complex

As a schematic representation of a problem using a limited number of concepts, a model is always a deliberate simplification of complexity. But this simplification is carried out consciously, by means of "**key** concepts" induced (or "abstracted", or "conceptualized") from a great deal of

⁶ This clarification is necessary to distinguish this meaning of model from the more common one of "concrete model to imitate". We will see later, in connection with the different functions of the model produced by modeling, that the product of modeling is, on the contrary, an "abstract model to be manipulated".

⁷ Cf. my manifesto "Pour une didactique complexe", [2003b-en](#).

⁸ On the meaning of "theories" in this essay, see [chap. 3.1.3](#) below.

⁹ Chapter 2 of this course (pp. 10-14) is entirely devoted to the notion of "model".

practical knowledge and practical experience, and then selected on the basis of their own relevance and their ability to relate to others in a "meaningful" way in the original sense of the qualifier, i.e. by recalling or creating meaning in relation to this knowledge and experience.

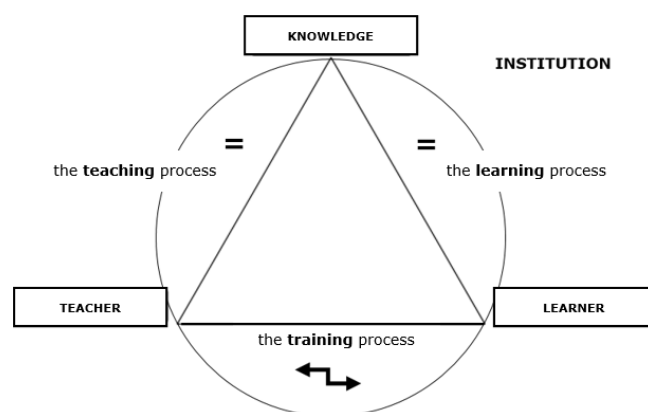
It's precisely the simplified aspect of the model that enables all its users to reconstitute complexity for themselves, both from an abstract point of view, by diversifying as they see fit the ways and meanings of relating concepts –and even adding or deleting some– and conversely, from a concrete point of view, by relating these concepts to their own experience and knowledge.

At the very end of the conclusion to his book *Histoire des didactiques disciplinaires 1960-1995* (*History of disciplinary didactics 1960-1995*), Philippe Sarremejane, professor of Educational Sciences who also presents himself as an epistemologist, criticizes the effects he lends to the necessary conceptualization of teaching practices:

*Didactics is a hybrid that is torn apart by the contradictory currents that flow through it, [...] it is a "neither... nor...". Neither theoretical, because it doesn't want to break with the "practical sense" that constitutes it and that emerges from empirical individuals, nor practical, because wanting to understand practice requires **the mutilating mediation** of a symbolic code that in fact cuts itself off from reality as it is. All that remains is an impoverished substitute* (2001, pp. 444-455, emphasis added).

Surprisingly, this author completely ignores the essential function of models, which is to serve as a means of personal "recomplexing". In P. Sarremejane's discipline, for example, the undeniable success of Jean Houssaye's "didactic triangle" model since its publication in 1988 is easily explained by the wealth of reflections it continues to generate when used in the field of teaching practices as a tool for didactic description and intervention:

Figure 1
Didactic triangle" model by J. Houssaye (1988)

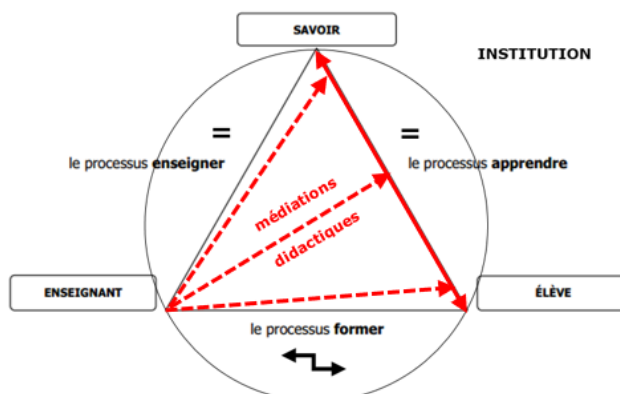


J. Houssaye presents this diagram as a "model for understanding and building the workings of the pedagogical situation" (p. 19). We might add "as well as a model for rebuilding" because its advantage, like all models, is that it can be manipulated by other didacticians or teachers according to their own conceptions and goals.

In my essay on mediation, I've made this model more complex for the DLC, with the explanations I reproduce below in a way that seems to me to shed light on the inadequacy of "learner-centeredness" alone¹⁰:

Figure 2

Expanded DLC diagram in DLC of J. Houssaye's "didactic triangle" (1988)



–The strongest form of didactic mediation consists in providing robust, preconceived scaffolding based on knowledge (cf. the dotted arrow at the top of the diagram below): the dominant logic is that of the "teaching" process.

–The weakest form of didactic mediation is simply to offer students autonomous training in learning (cf. the dotted arrow at the bottom): the dominant logic is then that of training –in this case, training in learning. (2019b, p.15)

1.1.3 The different functions of models

What I have brought to bear on J. Houssaye's model is one of the functions that epistemologists assign to models: the cognitive (or "descriptive") function. In a summary document (014), I present the correspondences between the different functions of models proposed by Franck Varenne (2022) and Bernard Walliser (1977)¹¹:

¹⁰ More than twenty years earlier, I had devoted an entire article to criticizing this notion of "teacher-centredness" (1995a-en).

¹¹ We also refer you to the article by B. Walliser 2007, already quoted above, entitled "The functions of economic models". Available on line in French (2007), he proposes a significantly different typology: he reviews the iconic, demonstrative, empirical, heuristic, praxeological and rhetorical functions, with a presentation of the interest and risks of each.

Table 1
Comparison of model functions according to Varenne 2022 and Walliser 1977

VARENNE 2022	WALLISER 1977
1. Facilitate sensitive apprehension	Cognitive [or "descriptive"] function
2. Facilitating intelligible formulation	Pedagogical function
3. Facilitating theorization	Search function [or "heuristic" function] during model development
4. Facilitating the co-construction of knowledge	Search function [or "heuristic" function] when using the model
5. Facilitate decision-making and action	Decision-making function

At the end of an article proposing a descriptive model change, elaboration and adaptation of DLC methodologies, the "3M model (Matrix - Models - Methodology)", I conclude –and this conclusion applies to any DLC model:

[...] this model shows the value of modeling to guide and structure didactic thinking, and then manipulating the models thus produced to enrich that thinking, produce new concepts and generate ideas for practical innovation. Modelling is emerging as a key tool for initial and in-service teacher training. (2024g-en, pp. 21-22).

In this article, for example, this elaboration work has led me to illustrate the functioning and productivity of a concept I've been using for a long time in my work, namely end-means homology (**cognitive function** of models); to show the need to distinguish between models to be imitated and models to be manipulated (**pedagogical function**); to propose, at the level of methodologies, an operational distinction between language activities and language actions, as well as, at the level of sequences or didactic units, an original typology of tasks –main task, complementary, secondary and collateral tasks– (**heuristic function**). Finally, this model, which works for all levels of actors (from educational managers to teachers in their classrooms), can convince them to give priority to multi- and pluri-methodological approaches (**decision-making function**).

1.2 The modeling process

The modeling method I have used to develop the DLC research system is directly inspired, as mentioned above, by the qualitative analysis procedure proposed by A.M. Huberman & M.B. Miles (1991). More specifically, as I first presented in a 1997 article ([1997b](#), p. 8), it consists:

1) of "condensing" field data by performing the various operations that make up conceptualization, i.e. "selection, focus, simplification, abstraction and transformation" (p. 35) (on conceptualization, see also [chap. 2.2 below](#)).

2) and then of grouping these data together in increasingly broad "conceptual elements" (*constructs*) in order to gradually achieve "conceptual/theoretical coherence" (p. 41); these concepts can then be linked together in a "theory", defined as a "conceptual framework" consisting of a description of key concepts (dimensions, factors, variables) and their relationships and interactions;

3) and finally, of presenting them in the form of matrices, graphs, diagrams and tables, so as to "draw conclusions and take action" (p. 36; quotations are back-translated from French into English).

This is not a linear process, but a recursive one: theorizing can lead back to conceptualizing, modeling to theorizing and conceptualizing, either to repeat it identically (this is called an "iteration loop"), or to modify it (this is called a "feedback loop").

The status that A.M. Huberman & M.B. Miles assign to this theory, namely that of being "simply a momentary version of the map of the territory explored by the researcher" (p. 54), corresponds exactly to that of a model. This "conceptual framework", with internal dynamics (*i.e.* processual relationships between key concepts: cf. [chap. 3.3](#) below), corresponds to a "systemic model" if it also presents external dynamics (*i.e.* inputs and outputs: cf. [chap. 3.2](#) above).

1.3 The system concept

In the evolution of ideas in the West, we've moved on in the last half-century, whether to understand reality or to act on it,

–from a way of apprehending a **static reality**, where the preferred form is *structure*, *i.e.* a set of elements with fixed relationships between them, independent of their environment;

–to a mode of apprehending a **dynamic reality**, where the preferred form is the *system*, *i.e.* a coherent set of elements in constant interaction, which gives it a certain stability, yet with an openness to its environment that enables it to evolve and adapt.

In all the Human Sciences, the influence of systems thinking means that we are now less interested in products than in processes, in states than in evolutions, in organizations than in networks, in any object in itself than in its relationships with its environment.

Living cells are often cited by epistemologists as typical examples of autonomous systems in constant relationship with their environment, from which they draw their nourishment and from which they eliminate their waste products. Some cells even have the ability to modify their internal conformation according to their environment, enabling them to perform different functions: this is the case with blood hemoglobin, which can capture oxygen in the lungs and release it elsewhere in the body's tissues, and perform the opposite operation with carbon dioxide. This so-called "allosteric" function of certain living elements (from the Greek ἄλλος, "other" and στερεός, "form") was analogously transposed to education by a French pedagogue, André Giordan, to designate a complex model of learning based on the capacity possessed by the cognitive system of any learner to diversify its modes of learning according to objects, activities and contexts: learning competence is a measure of the ability to switch from one learning mode to another, depending on the learning situation. He illustrates his "allosteric model" with three concrete examples:

To learn how to program a VCR, you can listen to a salesperson, imitate a friend, read the instructions, try it yourself or ask a specialist. When learning a scientific competence, you can watch a video, work in a group, research, develop and test hypotheses. For certain types of knowledge, such as in the field of physical and sports education, the learner will still have to practice, move forward by trial and error, dismantle an inadequate

*practice, question his or her own actions, or take a step back to imagine another way of doing things*¹². (1999)

All the elements mobilized in DLC research processes form a "system" in the sense that Bernard Walliser attributes to this concept in his 1977 work cited *above*:

The system concept was forged around three essential ideas:

-that of a whole in reciprocal relationship with an environment, these exchanges ensuring it a certain autonomy;

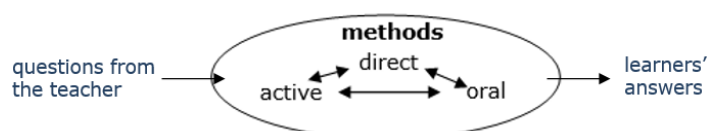
-that of a set of interacting subsystems, this interdependence ensuring a certain coherence;

-that of a whole that undergoes more or less profound changes over time, while retaining a certain coherence. (p. 11)

Here's a first example of a simple DLC system, that of questions-answers, more precisely oral questions from the teacher– oral answers from learners in a situation of teacher-learner interaction in class. a FFL didactician, Sophie Moirand, was astonished in a 1988 article (note 1 p. 234) at the strong persistence in practice despite the communicative approach in force, while this methodology should have led teachers to give priority to direct exchanges between learners in the classroom. This "systematic" use of the question-and-answer scheme by teachers is rationally explained by the fact that it is precisely a "system", and a robust and effective one, capable of simultaneously fulfilling multiple didactic functions. Applied to a text, it enables the teacher to stimulate language activity, encourage the re-use of language forms, explain and monitor comprehension, promote memorization and guide commentary (cf. my article "Méthode interrogative et commentaire de textes" ("Interrogative method and commentary on texts", [1989c](#), pp. 77-80). In my essay on modeling in DLC ([2022f](#)), I proposed representing it as follows¹³:

Figure 3

Model of the question-and-answer system according to Puren 2022f



This example allows me to introduce three notions that make up the notion of a system: "inputs", "outputs" and "reinputs". In this system, **the inputs** are provided by the teacher's questions, and **the outputs** by the learners' answers, the system itself being made up here of three interrelated elements in a simple combination: the students must process the question on the text in such a way as to answer it themselves (active method) orally (oral method), and directly in the foreign language (direct method)¹⁴.

¹² Noting that "all these practices are necessary for learning, [that] they are both complementary and conflicting", A. Giordan logically concludes that "constructivist models –based on the idea that students necessarily construct their knowledge– are too frustrating, too closed."

¹³ I propose in the following chapter 1.4 a more elaborate representation.

¹⁴ "Method" here has the meaning of "minimal unit of methodological coherence": the method is to methodology what the seme is to semantics and the phoneme to phonology (cf. [2011k](#), and [008](#) for the list of methods in DLC classified by opposite pairs).

A more complex example is the language system being learned, the interlanguage, which, according to Karl Vogel, author of a 1995 book entitled *L'interlangue, la langue de l'apprenant (Interlanguage, the learner's language)*, "must be conceived as an open system of which the user himself is an integral part" (p. 279)¹⁵. Anglo-Saxon didacticians distinguish between *input*, *intake* and *output* operations in the learning process:

- (1) *Input* is made up of the language elements to which a learner is exposed in his learning environment: these are therefore the inputs to the system.
- (2) *Intake* is the part of these elements which is effectively integrated into the learner's provisional language system in order to interact with the elements already present, thus causing the system as a whole to reorganize itself.
- (3) *Output* corresponds to the elements which leave the learning system, i.e. those which are reused in oral and written production: these are the outputs of the system.

But considering that interlanguage functions as a system leads us to add a fourth type of operation:

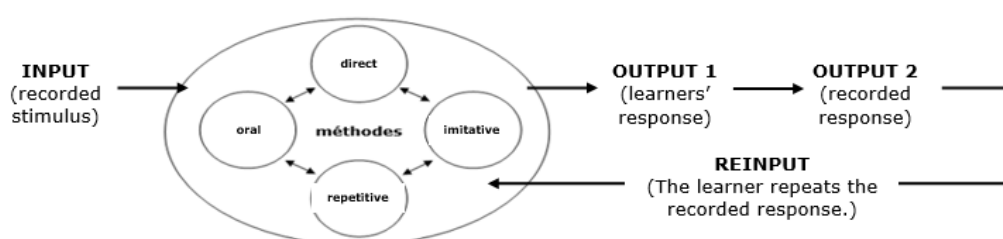
- (4) *Re-entry* corresponds to the learner's answer as corrected (or not) by the teacher and taken into account by the learner as an intake: empirically, we've known for a long time that this type of operation is indispensable to the learning process.

1.4 System modeling

Systemic models are the most complex of all the existing types of models possible in DLC because they represent the most complex realities. However, they can have different levels of complexity, and to demonstrate this, I'll start by comparing the structural exercise system with the question-and-answer system. I'd like to make it clear that I'm using the concepts of systems theory in an analogical way, in this case by adapting them to DLC activities.

The system of structural exercise as implemented in American audio-lingual methodology in the 1950s, and which spread to Europe in the following two decades, can be represented as follows:

Figure 4
Structural exercise system model



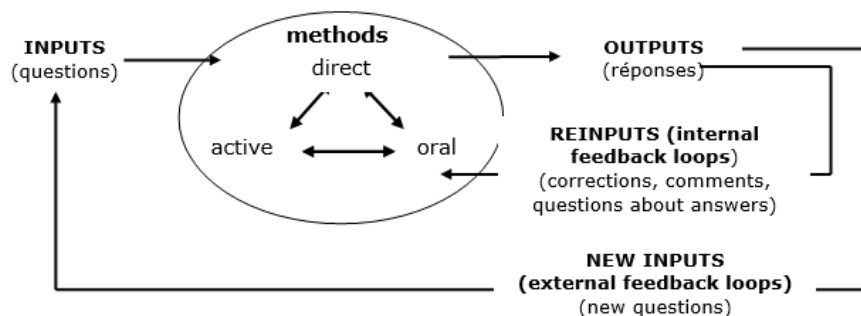
The system is made up of four elements, which are combined like those of the question-and-answer system: learners intensively repeat (repetitive method) oral models (oral and imitative methods) of a foreign language (direct method). It is implemented in "audio-active" laboratories, where each learner has his or her own two-track tape recorder on which he or she hears the stimulus, records his or her response, hears the correction, and repeats it identically. They can repeat this procedure at will, to automate their response and/or work on their pronunciation (cf. [1988a](#), chap. 4.1.3, pp. 196-205).

¹⁵ The involvement of the actor himself in the process of observation, analysis, interpretation and action is one of the defining components of complexity: cf. [046](#).

The document-based question-and-answer system in place in France since the beginning of the XXth century in school didactics enables far more complex processes, as it operates entirely in real time, in a collective environment, and within the framework of maximum implementation of the active method. It's a genuine system for questioning documents, which was developed within the official methodology from the 1920s to the 1960s, precisely called "active methodology"¹⁶. This system can be represented as follows:

Figure 5

Model of the document questioning system in active methodology



With a view to intensifying the active method, questions are often posed by the teacher on the basis of his or her own prior preparation of the document and its goals, but he or she also asks learners to pose their own questions (before class or in real time), and may even ask them, in groups, to prepare a complete questioning¹⁷. Learners' answers can be plural, giving rise to corrections, comments and questions on the part of both the teacher and the learners. For all students –if they are attentive... For all students –if they are attentive...– these public oral reactions generate internal feedback loops, or "**reinputs**", with the teacher often ensuring that they are at least for the student who has responded, by asking him or her to repeat the correct statement orally (as in the structural exercise) or to react himself this time to the comments and questions of his classmates. These reinputs, which can directly generate new outputs, correspond to the learning system's consideration of its outputs as they have been processed within its own environment, which in this case is the situation of collective oral commentary on a document in class.

As part of the whole system of questioning the documents, the answers already given call for new questions to **continue** the commentary (in the sense of "broadening" it, not "deepening" it). These are also recursive loops, but this time they are external feedback loops, which restart the whole questioning process (i.e., new questions about the document, i.e., new inputs), whereas the internal feedback loops aim to modify the answers already given. In the structural exercise, each stimulus does indeed produce a new input in the system, but these are not recursive loops, since they are pre-programmed in a linear fashion (this type of progression is known as "*step by step*").

¹⁶ For this reason, French school methodology is known as "méthodologie active". For a presentation of the many active techniques, see "La mise en œuvre de la méthode active. François Closset 1950" (006). For a historical presentation of this active methodology, cf. 1988a, part 3, with pp. 147-149 the presentation of the "valorization of the active method" in this methodology. For a detailed presentation of the typology of questions (and instructions) in this methodology, which can be found to a greater or lesser extent in all language textbooks from level B2 upwards, and even in the PIRLS and PISA assessments, cf. 041-en.

¹⁷ Cf. also 2006e, chap. 3, pp. 13-17, with p. 17 a series of concrete examples of training exercises for questioning documents (in this case, literary texts).

It's these two types of recursive loops that ensure, for the first –the inner loop –the deepening, and for the second– the outer loop –the progressive broadening of collective oral commentary. In this way, the classroom functions as a collective system that multiplies learning: the target-language productions of each learner during a sequence of oral exchanges in class, and their corrections, are likely to constitute new inputs, exits and reinputs for all the others in their own learning system, as well as in the teaching system, thus ensuring the most appropriate relationship possible between the two processes of teaching and learning.

As we saw above, systems theory also uses the concept of "iteration loops", which are identical repetitions of the same process within a system. These recursive loops can also be internal or external.

In structural exercises carried out in an audio-active laboratory (each learner has his own tape recorder with the recording of the exercises), an internal iteration loop is created when the learner repeats the same stimulus several times on the student track of his tape recorder to work on the pronunciation of his response until he considers it satisfactory in relation to the correction, which is automatically repeated each time on the master track. Structural exercises program their own external iteration loops by proposing stimuli that call for the same type of language response, as shown in the example below (I translate instructions into English):

Just listen. –Oui, j'ai un fils. " Vous avez un fils? "

Repeat: *Vous avez un fils?*

Look for the question.

1. Oui, j'ai une chambre.
2. Oui, j'ai une voiture.
3. Oui, j'ai une moto.
4. Oui, j'ai une fille.
5. Oui, j'ai un camion.
6. Oui, j'ai une chambre.

*Voix et images de France, Exercices pour le laboratoire de langues,
Livre du maître, Paris, Bruxelles-Montréal, CRÉDIF-Didier, 1967, 180 p.*

In the system of active questioning of documents, it seems to me that we can put forward the following considerations¹⁸:

- An internal iteration loop is performed when learners give different answers to the same question (from a teacher or a learner).
- When different corrections, comments or questions are proposed for the same answer, feedback and iteration are combined as internal loops.
- Feedback and iteration are combined as external loops when reactions to a question or answer, or lack of reaction, lead the teacher to ask the same question again, identically or, perhaps more frequently, by rephrasing it.

Finally, the most complex example of modeling that I can present is precisely that of the research system that is the subject of this essay (cf. [diagram 1](#)): it is highly complex because it endeavors to exhaustively cover the entire DLC research system for both didacticians and student-researchers, trainers and teachers, in terms of all its components, as well as all the attested variety of internal and external mechanisms. As it is itself the result of a complex modeling

¹⁸ I remind you that the aim here is to use the concepts of systemic theory in the context of didactic modeling, in an analogical way, therefore.

process, I shall use it in the remainder of this essay to illustrate both the general process of systemic modeling, and the specific workings of the DLC research system.

2. Research in DLC

In the first 2015 version of this essay ([2015a](#)), this chapter was devoted to a comparison between research in DLC and in Management Sciences. The various themes addressed here are the same, but they relate exclusively to DLC. I describe this research by means of four majors, or "reference", characteristics: the intervention project, the conceptualization operation, the engineering approach and the modeling tool.

2.1 *The reference project: intervention*

Over the course of his career, Robert Galisson was the French didactician who most insisted on what he called the "interventionist" dimension of DLC. In a 1990 article, he defined it as "a discipline of observation (i.e., of knowledge) and of intervention (i.e., of remediation and novation)" (p. 25). But he immediately added: "D/DLC¹⁹ is first and foremost a discipline of observation (i.e., fo *knowledge*) because, scientifically and deontologically, it is justified in intervening only... knowingly!" (note 64, p. 33)²⁰. This is why [diagram 1](#) is divided vertically into two parts: one, on the right, where the "logic of understanding" prevails (the main aim is to know reality); the other, on the left, where the "logic of intervention" prevails (the main aim is to act on this reality). In the first case, the "output" of the system is, for example, a linguistic analysis of the grammar rules proposed in a textbook or an analysis of classroom discourse during grammatical tasks; in the second, the grammar exercises proposed in the didactic units of a language textbook and its Grammar Summary (i.e. the Quick Grammar Guide at the end of the textbook)²¹.

DLC focuses on knowledge that is useful for action, *i.e.*, the researcher's knowledge that will enable teachers to improve their teaching process. This is the type of project that corresponds to "research-application" (e.g., the linguist or didactician is going to mobilize the analysis of discourse genres on materials intended for teaching on specific purposes) and to "research-production" (e.g., the researcher is going to develop a didactic sequence model adapted to the realization of mini-projects by learners): cf. these two types of research in [diagram 2](#).

Application", in "research-application" as presented in this [diagram 2](#), corresponds to the concept of "mobilization" in [diagram 1](#), in which I have preferred to reserve the notion of application for

¹⁹ Acronym for "Didactologie/Didactique des Langues-Cultures" ("Didactology/Didactics of Languages-Cultures"), the name that R. Galisson proposes in this article to designate the discipline. He later changed the name to "*Didactologie des Langues-Cultures*". For my part, I have adopted the expression "languages-cultures", but I have retained the traditional term "didactics" to designate the discipline as a whole, didactology corresponding, for me, to only one of its constituent perspectives, along with the methodological and didactic perspectives (cf. [DLC-DR1](#), first chapter of my course on "didactics of languages-cultures as a field of research", entitled "The three constituent perspectives of DLC").

²⁰ This article by Robert Galisson is the first in an issue of the journal *Études de Linguistique Appliquée*, in which he has grouped together, in reverse chronological order, ten of his own texts already published elsewhere, spanning the period from 1968 to 1990. The whole retraces the historical development of the discipline in France, as announced by the title of this issue, "*De la linguistique appliquée à la didactologie des langues-cultures*" ("From applied linguistics to the didactology of languages-cultures"). It is in this 1990 article that he proposes the most complete and accomplished model of his conception of the discipline, the "conceptual/matrix apparatus of reference for D/DLC" (p. 13): his model is constructed in the manner of the lexicologist he is, *i.e.*, in the mode of the repertoire (or "model-series", to use the expression I proposed for this type of model in my essay on modeling ([2022f](#), chap. 3.1.2, pp. 11-12)).

²¹ If a researcher uses a linguistic treatise or an article on a linguistic analysis model in his or her DLC research, this will constitute a "theoretical input" (cf. [chap. 3.3.1.5](#) below).

what is known as "applicationism" (methodological, technological or theoretical), so as to avoid confusion between two different aims based on different conceptions of DLC epistemology:

–*Applicationism* occurs when the linear process of application is deemed self-sufficient, because its effects are considered to be constantly and immediately useful for teaching and learning.

–*Mobilization* (praxeological or theoretical) occurs when the aim is to reinject the results of the process, after a new conceptualization, either into the praxeological subsystem (they feed back into praxeological modeling), or into the theoretical subsystem (they feed back into theorization): this is an internal recursive process, since the "field" is an integral part of the research system (cf. diagram 1).

But DLC isn't just about "knowledge useful **for** action": it's also about "knowledge **through** action"²², an expression that has different meanings depending on whether the action under consideration is that of (a) teachers, (b) student researchers or (c) teacher-researchers²³.

(a) The action considered is that of teachers

This is "**action research**", starting with the experiential knowledge of a group of teachers, and ending with the new knowledge they will produce for themselves through their own collective research action; even if a teacher-researcher or a group of teacher-researchers may participate in their research and exploit it for their own research work.

(b) The action considered is that of a student-researcher²⁴

When the researcher is also the teacher who intervenes as such in his or her own classroom research –a frequent case among students preparing their master's thesis or doctoral thesis, who often work on their own classrooms– his or her research is necessarily to a large extent, whether he or she likes it or not, a "**experimentation research**", a type of research in which knowledge **of** action merges with knowledge **for** action.

(c) The action considered is that of a teacher-researcher

This is the case in "**experimentation research**" and "**application research**", which emphasize the production of knowledge **through** the researcher's action in the field, even if experimentation or application may eventually be carried out in the classroom by other teachers, and these teachers may participate in the research.

But in DLC, even when the research is intended to be "**description research**", in its entirety or only in one or other of its phases (classroom observation, analysis of classroom interactions, analysis of learner productions, etc.), it cannot be limited to data collected by the researcher. It must integrate data gathered from teachers, and sometimes even from learners, if at least the researcher implements the comprehensive approach that I presented, in a 2003 manifesto, as the first of the seven fundamental approaches of a DLC that has reached maturity:

²² The idea of "knowledge through action" has a long tradition in pedagogy, beginning even before John Dewey's "*learning by doing*" in the 1930s. It has been taken up again and again since then (in Freinet pedagogy, for example), or more recently by Donald Schön (1983), with the concept of the "reflective practitioner", or by Jean-Marie Barbier (1996), with that of "action knowledge".

²³ For more details on the different types of research presented in points (a), (b) and (c) below, I refer to their representation in diagram 2 in the appendix to this essay, and to their comments in [2022h-en](#).

²⁴ I refer here to the "student-researcher" to distinguish him from the "*enseignant-chercheur*" ("teacher-researcher") in French universities, who is statutorily, as "*Maître de conférence*" or "*Professeur des universités*", a professional researcher.

1. The comprehensive approach (focus on the actors)

The expression "comprehensive approach" is borrowed from the opposition –well known to specialists in the field– between a "critical sociology" à la Bourdieu, in which the researcher proposes to reveal realities of which the majority of actors are not aware (which would allow a minority of them to use them to their advantage), and a "comprehensive sociology" such as that proposed by Max Weber, which focuses on the actors in their environment by valuing their awareness, their experience and their intentionality, that is to say their degree of real "understanding" (hence the name of this approach) of the games they have played, the stakes they are confronted with, the acts they carry out and the projects they construct. This comprehensive approach corresponds to the emergence of a comprehensive paradigm in the social sciences as a whole (to which the epistemology of the didactics of languages-cultures partly corresponds, since its object involves actors in an active relationship within an instituted framework), a paradigm which is based on a rehabilitation of the explicit and reflected part of action, as well as of the competence of the actors to analyze themselves, their environment and the actions that they carry out there. ([2003b-en](#), p. 3)

In other words, the DLC researcher's intervention cannot, *a priori*, ignore the knowledge and competences of those other players who are constantly in the field, and who are also seeking to improve teaching or learning practices: teachers and learners. The DLC researcher must both *gather* from those in the field, and *produce* for those in the field, knowledge useful for action.

2.2 The cognitive reference operation: conceptualizing field data

In [chapter 1.2](#) above, I presented the modeling method of A.M. Huberman & M.B. Miles (1991), from which I drew inspiration, method that starts with the conceptualization operation. [Diagram 1](#) shows the central part of this operation, based on field data.

I'm using "conceptualization" here in the restricted sense of what I call "first-level conceptualization" in my 1997 article ([1997b](#), p. 3): this involves inducing, from field data, *concepts*, *i.e.* "symbolic mental representations of classes of elements that enable [the] most economical and [the] most powerful intellectual manipulations" (*id.*, p. 2). I refer readers to this article for examples of first-level concepts, such as "linguistic form", "repetition" and "teaching-learning situation"²⁵ (pp. 2-3).

The term "field" refers to any concrete teaching-learning environment (on the concept of "field data", see [chap. 3.1.1](#), p. 19). It is not exactly "empirical reality", because the perception of this terrain is never naïve, but always constructed, both by the teacher and the researcher:

–Teachers perceive their work environment as a function of their teaching intentions and their methodological models, whether they are more or less conscious and more or less elaborate (on these methodological models, which may be "practical" or "praxeological", see [chap. 3.1.2](#) below).

–The researcher perceives the teaching-learning field not only in terms of his own methodological models –if he has teaching experience, and even more so if his research

²⁵ To designate what I call "situation" in this article, I now use the concept of "environment", which brings together two sets of field data: that over which the teacher has no control (the "situation" *stricto sensu*) and that which he or she intentionally constructs for learning (the "device"). These three concepts are the key concepts of the "semantic field of the environment in DLC" (title of document [030](#)).

has an immediate or mediated interventionist goal– but also in terms of his theoretical models and research project.

However they are collected, the researcher's "field data" will be no more "raw data" than the teachers' data, since he will at least have *selected* them, then *analyzed* and *interpreted*²⁶ them in the light of his research problem²⁷.

2.3 The reference approach: engineering

For a long time now, specialists in the educational sciences have been talking about teaching as "pedagogical engineering", and they have thus defined one of the main functions of the teacher as that of a designer of artificial learning devices²⁸. One of the great references in engineering epistemology is Herbert Simon²⁹, author of the 1969 famous book *The Sciences of the Artificial*³⁰. Herbert Simon has also long been one of my major epistemological references in what I call "the complex didactics of languages-cultures"³¹. I've already had occasion in another text³² to quote the following lines, in which he extends the notion of "professional designers" beyond what are commonly referred to as "engineers":

*Engineers are not the only professional designers. Everyone designs who devises courses of action aimed at changing existing situations into preferred ones. The intellectual activity that produces material artifacts is no different fundamentally from the one that prescribes remedies for a sick patient or the one that devises a new sales plan for a company or a social welfare policy for a state. Design, so construed, is the core of all professional training; it is the principal mark that distinguishes the professions from the sciences. Schools of engineering, as well as **schools of architecture, business, education, law, and medicine**, are all centrally concerned with the process of design.*

In view of the key role of design in professional activity, it is ironic that in this century the natural sciences almost drove the sciences of the artificial from professional school curricula, a development that peaked about two or three decades after the Second World War. Engineering schools gradually became schools of physics and mathematics; medical schools became schools of biological science; business schools became schools of finite mathematics. The use of adjectives like "applied" concealed, but did not change, the fact. It simply meant that in the professional schools those topics were selected from mathematics and the natural sciences for emphasis which were thought to be most nearly relevant to professional practice. It did not mean that design continued to be taught, as distinguished from analysis. (1969, p. 111, emphasis added)

Note in this quotation (cf. highlighted expression) that H.A. Simon quite rightly considers teachers to be "professional designers" too. In fact, to adapt the second paragraph of this

²⁶ I refer you to the passage on pp. 2-3 of [DLC-DR1](#) where I illustrate very concretely these different activities of observation, analysis and interpretation (then intervention) in DLC with "the example of a trainer carrying out a formative observation in the class of a beginner teacher".

²⁷ On the concept of a "research problematic", see chapter 1.2 (pp. 5-9) of document [DLC-MR4](#), where I present its various components, which may differ according to research supervisors and university traditions.

²⁸ It's easy to see how far we've come from the pedagogical thinking that the DLC was able to maintain for several decades, with the promoters of the communicative approach systematically favoring in their discourse "authentic" documents and classroom simulation of "authentic" communication situations...

²⁹ Winner of the Nobel Prize in Economic Sciences in 1978, Herbert A. Simon was awarded the "Turing Medal" (the "Nobel of Computing") in 1975 for his research into Artificial Intelligence and Cognitive Science.

³⁰ The author of the 1991 French version, Jean-Louis Lemoigne, translated the title as follows: "*Sciences des systèmes, sciences de l'artificiel*".

³¹ Cf. document [2024f-en](#), entirely devoted to H.A. Simon's contributions to the epistemology of DLC, and document [048](#), extended to include my other reference authors. On the concept of "complex didactics of languages-cultures", cf. my [2003b-en](#) manifesto, already mentioned above.

³² [DLC-DR4](#), chap. 2.4 « Environnement et ingénierie » ("Environment and engineering"), p. 13.

passage to a critique of DLC applicationism, we'd simply have to replace "engineering schools" with "university DLC training", and "physics and mathematics" with "linguistics and sociolinguistics"...

The term "engineer" can also be applied to researchers, whatever their specialization, since they are also designers of research systems. The notion of "project", central to both teaching and engineering –an engineer is essentially a project designer– is equally so in research (cf. the notion of "research project"). As far as DLC research in particular is concerned, I refer you to [Diagram 2](#) –where we can see that the project plays a decisive role in mediating between subject and object, and between the goal of comprehension and that of intervention– as well as to the corresponding developments in the original document from which this diagram is taken: [2022h-en](#).

2.4. The reference tool: modeling

What an engineer designs are models that must take into account the field data. For example, an engineer designs a bridge (which will inevitably be represented at some point by a model, now modelled on a computer) in such a way as to incorporate all the parameters of its environment and function: the nature of the terrain, including the river bed and banks, the width of the watercourse and its flow variations, the type of traffic expected, etc. This is exactly what a teacher does when he produces or modifies methodological models (see [chap. 3.1.2 below](#)) to adapt to his audience, his teaching conditions and his goals: these methodological models are, like the engineers' models, *artifacts*: didactic units, class sequences, teaching scenarios, instructional aids and other teaching-learning devices.

An expert teacher's "class preparation" is to the classroom sequence he or she will subsequently carry out, what a model is to the bridge the engineer has designed and whose construction he or she will follow. This "class preparation" corresponds neither to applied theories, nor to the actual practices he will carry out in his classroom, contrary to what this time-honored expression suggests. *An expert teacher doesn't prepare his classes, he prepares himself to teach them*: the gap between these two postures corresponds precisely to the difference between practice and model: To "prepare oneself to teach" is to *project oneself* into the class to come³³ in order to draw up a kind of "model", i.e. a preliminary representation of the whole, which will probably include –to use the metaphor of the journey this time–the final destination, a few milestones and stages, a few difficult passages with the different types of guidance and help available, perhaps a few differentiated routes... or even alternative destinations.

3. The research system model in DLC

DLC research works like a system:

– It comprises two subsystems:

–the praxeological subsystem, which operates primarily within an intervention logic: the aim is to modify reality, in this case to design actions on teaching-learning processes so as to improve them;

³³ The notion of a "project" is as fundamental in teaching and teaching-related research as it is in engineering. Concerning the research project, see chapter 3 entitled "*Définir son projet de recherche*" ("Defining your research project") in the course "*Méthodologie de la recherche en DLC*" ("Research methodology in DLC", [DLC-MR3](#)).

–and the theoretical sub-system, which operates primarily within a comprehension logic: the aim is to know reality, in this case the nature and functioning of teaching and learning processes, which also implies knowing the nature and functioning of the objects on which these processes focus – at least the target and source languages and cultures, in the case of DLC.

These two subsystems come under the two major paradigms of knowledge that Jean-Louis Le Moigne calls, respectively, "the knowledge-project paradigm" and "the knowledge-object paradigm" (1987, p. 7)³⁴. These paradigms modify themselves and their relationships over the course of collective time, with the evolution of the conception of the discipline and of research within the discipline; as well as over individual time, with the progress of research and the professional maturation of the researcher.

–It is made up of a set of components (chap. 3.1): field data, models and theories.

–It is a dynamic system: it has external dynamics (chap. 3.2) produced by inputs, outputs, reinputs and new inputs, as well as internal dynamics (chap. 3.3) with recursive processes of iteration and retroaction, and linear processes of six different types.

3.1 System components

These are field data, methodological models (practical and praxeological), as well as theories and theoretical models.

3.1.1 Field data

In my 1997 article entitled "*Concepts et conceptualisation en didactique des langues*" ("Concepts and conceptualization in language didactics"), I limited field data to "information of any kind concerning the language-culture teaching-learning process in all its phases and activities, which teachers [themselves], **on the sole basis of their professional experience**, can directly gather from their own practice or from the observation of colleagues" ([1997b](#), note 3, p. 2, emphasis in the text). This limitation does not seem legitimate to me in the case of the DLC research system, and I extend this concept here for the following two reasons:

–On the one hand, professional experience is constantly enriched, in the case of "reflective practitioners"³⁵, not only by the recursive modeling process mobilization → conceptualization on their own practices, but also by the contributions provided by the same process carried out by researchers in the other (theoretical) subsystem.

–On the other hand, these reflective practitioners can also take note of the field data collected by the researchers, and use them as the basis for their own conceptualization. When the researcher is at the same time the teacher who models from his or her own teaching field and mobilizes his or her models on this same field, as is often the case with young researchers working on their dissertations or theses, the overall research system is not made easier, contrary to what they might think, because it is more difficult to

³⁴ In the final bibliography, I've added references to two books by Le Moigne, *La théorie du système général. Théorie de la modélisation* (1977) and *La modélisation des systèmes complexes*, (1990), which, like the former, deal with both systems and their modeling. The centrality of "project" in [diagram 2](#) is explained by the importance this author attributes, alongside objectivity and subjectivity, to what he calls "projectivity" in his 2005 article (2005, p. 427, quoted in [2022h-en](#), p. 6).

³⁵ To use Donald Schön's (1983) famous expression, teachers build their professional knowledge through action and reflection in and on action.

maintain the necessary distinction between the two sub-systems and their complementary but different logics.

Field data can come from a number of sources, which are usually combined and then cross-referenced³⁶. He may have them produced or produce them himself specifically for his research by means of experiments, or collect them himself by means of classroom observations, analysis of learners' productions or written class preparations, etc.; he may also collect them from other teachers and learners by means of questionnaires, interviews, commentaries on video recordings of class sequences, etc., or by consulting published research works.

3.1.2 Methodological models

Among the wide variety of models proposed by Sinaceur (cf. [chap. 1.1](#) above), it is "a concrete sample of a particular operation" that best corresponds to the notion of "methodological model" in DLC. This notion will become clearer in the next two sub-chapters, which will deal successively with the two types of methodological models, "practical" and "praxeological". I refer readers to [Diagram 3](#), " Typology of didactic models in DLC " and its introductory article ([2020a](#)), which propose a typology of "didactic" models (*i.e.* model of the discipline "DLC"): the two sub-types mentioned above can be found under the heading of "methodological models".

Both can come in a wide range of sizes:

–small: these are *micro-methodological models*, the smallest being "methods" in the sense of "minimal units of methodological coherence" (cf. [2011k](#)); also of this type, for example, are certain limited³⁷ procedures or techniques, such as regressive correction of the intonation of a sentence³⁸; the teacher repeating a learner's sentence stopping just before the error to point out the point to be corrected; this or that type of exercise, or all the techniques used to implement methods: see the examples given for the active method, the repetitive method and the conceptualizing method in document [005](#);

–medium-sized: *meso-methodological models* such as a didactic unit model ([011](#)), a "documentary logic", or document exploitation mode ([2014g](#)), each of the different grammar work procedures ([010](#)); or, even larger in size, the global model-procedure for the correction of students' oral errors in real time in the classroom as schematized in [2022f](#) (pp. 21-22); and the standard model-procedure for language practice ([2016c-en](#), diagram p. 2)³⁹;

–large-sized: these are the *macro-methodological models* represented by the major historical methodologies: direct, active, audio-lingual and audiovisual, communicative approach, social action-oriented approach...

³⁶"Crossing data of diversified origins [...] is undoubtedly the fundamental method of DLC research" ([2022h-en](#), pp. 42-43), in which research methods must themselves be diverse and cross-referenced (*idem*, "Conclusion of second part", pp. 42-47).

³⁷ For definitions of "method", "process", "technique" and other terms in the field of DLC methods, see glossary [004](#);

³⁸ To preserve the intonation of a long sentence for beginners, have them repeat it, adding the different parts successively from the last: "rue Montmartre." → "6, rue Montmartre. → "to take her 6, Montmartre." → "She asks the cab to take her to 6, rue Montmartre.

³⁹ In some publications, I have called these meso-methodological models "objects", in reference to a computer programming technique. On their definition, cf. [2012f](#). For a list of currently available objects, cf. [2019g](#), p. 11.

3.1.2.1 Practical models

They are "closed" teaching models in the sense that they give rise to a simple "methodological application" (cf. *below* [chap. 3.3.2.1](#)), i.e. they are constantly reproduced identically in teaching practices. They may have started out as "methodological inputs" (cf. *below* [chap. 3.2.1.2](#)), or they may at one time have been praxeological models that have then, as it were, "frozen". Practical models are not bad in themselves: a whole part of teaching practice needs to be driven by practical models, because they can be automated: as such, they are indispensable to the teacher because they enable him to keep enough cognitive energy available to manage, by means of praxeological models, his real-time adaptation to the dynamics of the teaching-learning process in the classroom, which requires constant attention and is therefore very "consuming" from the cognitive point of view. As I wrote in a 1994 article on formative observation in DLC, these practical models are even indispensable to innovation, and thus, paradoxically, to the process of praxeologization:

[...] while it's legitimate to criticize the "routine" teacher, i.e. one who functions constantly on the basis of routines, we mustn't forget that these routines are nonetheless essential elements of professional mastery. And without them, innovation is impossible: you need to have a high degree of automatism about the usual professional problems to be able to devote energy to managing in real time the new problems that will arise in an experimental situation; in other words, you need to have sufficient mastery of the whole of your professional practice to take the risk of experimenting with partial modifications. ([1994d](#), p. 10).

For automated practical models to be compatible with methodological flexibility, they must, of necessity, be limited in size: a teacher who rigorously and exclusively applies an entire constituted methodology, whatever it may be, has very little room for maneuver when it comes to implementing the primary competence of any teacher, namely his or her ability to adapt to learners and the teaching-learning environment.

3.1.2.2 Praxeological models

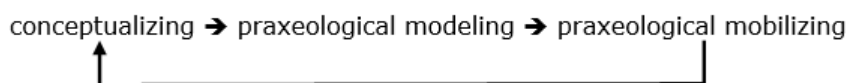
Unlike practical models, which are closed models that can only be applied, praxeological models are open models that teachers periodically recursively implement in the praxeological subsystem of the teacher research system (mobilization → conceptualization → modeling → mobilization. See [diagram 1](#)). It is these recursivities that enable teachers to constantly adapt their practices on the basis of reconceptualization of field data (cf. [chap. 2.2](#), above p. 16), and are therefore the driving force behind professional methodological reflection.

A teacher can mobilize praxeological models in his classroom practices according to three main types of processes, all reflexive since reflexivity is part of the very nature of this type of model:

a) He introduces methodological models into his practice as a function of his needs and intentions, observing their effects in real time and evaluating their results; in this first phase, he then carries out a "methodological application", but as an experiment, and therefore subjects it to conceptualization (cf. [diagram 1](#)). He can then, depending on his evaluation, either abandon it, adopt it definitively as it stands (it will then become a practical model for him), or integrate it into his praxeological models, where it will then enter, like other models of this type, into the following permanent recursive loop:

Figure 6

The recursive loop conceptualization - praxeological modeling - praxeological mobilization - conceptualization



b) He develops praxeological models directly from his professional practice.

c) He borrows praxeological models –which are methodological proposals that are open-ended because they refer to theoretical models, are confronted with experimental data and are conceptualized– by confronting them in turn with his own field experimentation data and conceptualization: the term "praxeological modelling" is better suited to these loans, because they are presented as examples of production rather than as finished products: the ambivalence of the term "modelling" –which can refer to both the process and the product– makes it possible to include precisely these two aspects.

The most active "reflective practitioners" are those who simultaneously and continuously carry out these three research processes (cf. fig. 6 above) on their own professional practice.

3.1.3 Theories and theoretical models

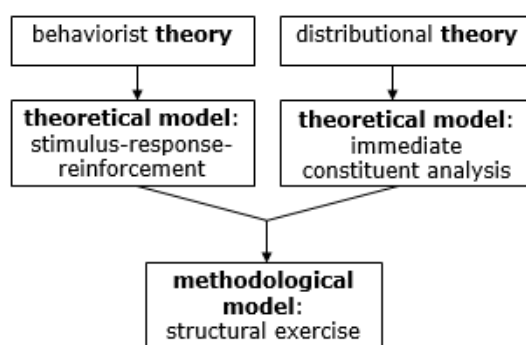
In this essay, I reserve the term "theories" for what are traditionally referred to in DLC as "reference disciplines", or "related disciplines", or "appendices disciplines". These include, traditionally, "Language Sciences", "Cognitive Sciences" and, particularly for school didactics, "Education Sciences". From an epistemological point of view, these sciences, like all sciences, even "Hard" ones, can only produce models, not theories. We can hardly consider J. Houssaye's "didactic triangle" as anything other than a model, and indeed that's how I presented it above in [chapter 1.1.2](#). But for the sake of terminological convenience, I reserve here the concept of "theories" for the conceptual frameworks of these extra-didactic disciplines, which, when imported as such by didacticians, will constitute "theoretical inputs" into their research system.

Regardless of this epistemological and terminological debate, the essential point here is to clearly contrast the aims of models in DLC, which is an intervention discipline, and those of theories in these ancillary sciences: with a model, we seek to **act on reality**, and its evaluation criterion is its relevance and effectiveness in the context of a theory; with a theory, we seek to **understand reality in itself**, and its evaluation criterion is its adequacy to this reality (cf. [015-en](#)). Linguists do not seek to modify the use of language, nor do cognitive scientists seek to modify the functioning of learners' brains. This is why, if they want to intervene in didactics, or if didacticians want to use their theories to intervene in DLC, it is first necessary to draw models from them: this is the operation of "theoretical modeling" (cf. the corresponding arrow in [diagram 1](#)).

In my article 2020, I present on page 4 the following historical example of the relationship between a distributional linguistic theory, a cognitive theory (behaviorism), and the corresponding theoretical models, which have been combined to generate a methodological model for DLC:

Figure 7

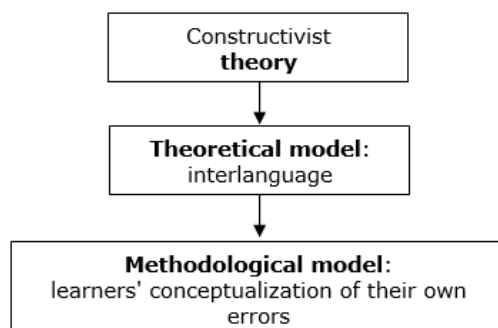
Example 1 of the relationship between theory –theoretical model - methodological model



Another example: Piaget's cognitive theory of learning is described as a system of active processing of information inputs based on two inverse internal mechanisms, assimilation and accommodation, both of which lead to an overall reorganization of knowledge, also seen as a system open to its environment. This theory is matched in education by a theoretical model of learning as the learner's construction of his or her own knowledge, and in DLC by the theoretical model of interlanguage. The methodological model generated in DLC by this theoretical model is the technique of conceptualization by learners of their own errors, with the learner's awareness of his or her interlanguage supposed, by further recourse to a rationalist postulate, to promote its evolution.

Figure 8

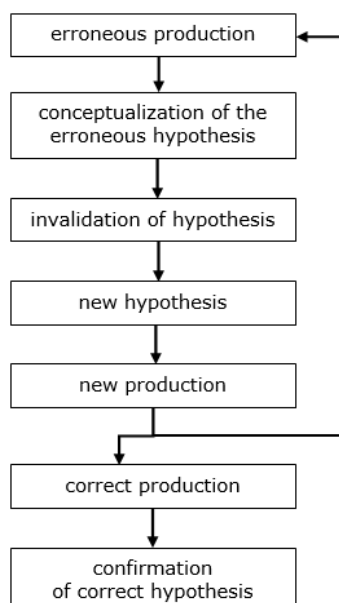
Example 2 of the relationship between theory –theoretical model - methodological model



This methodological model can be schematized as follows:

Figure 9

Methodological model corresponding to constructivist theory and its theoretical model of interlanguage



3.2 External dynamics

3.2.1 System inputs

As mentioned above, in systems theory, a "system" has "inputs", "outputs", "reinputs" and "new inputs". The terms "inputs", "reinputs" and "new inputs" correspond in DLC to informational elements coming from the system's environment.

As far as inputs are concerned, they are of different origins: in the order of their reading on [diagram 1](#), they are empirical, methodological, social technological and theoretical inputs.

3.2.1.1 Empirical inputs

Empirical inputs are both massive and permanent in the DLC research system, probably much more so than in other disciplines, because the problem of language teaching is constantly confronted with the existence of natural acquisition (that of the mother tongue and that obtained in a "language bath" situation) considered to be both much easier and more effective.

Historically, there are many traces of empirical DLC inputs. These include:

- the important role played by the "natural method", or "maternal method", in the first (and arguably greatest) methodological revolution, that of direct methodology at the beginning of the XXth century (cf. [1988a](#), 2nd part: "La méthodologie directe", chap. 2.1.8, "La méthode naturelle", pp. 75-78);
- the enduring weight of the immersion model (or "language bath" model) throughout this history;

–the role played in DLC by research into bilingualism, early learning and the cognitive mechanisms involved in mother-tongue acquisition.

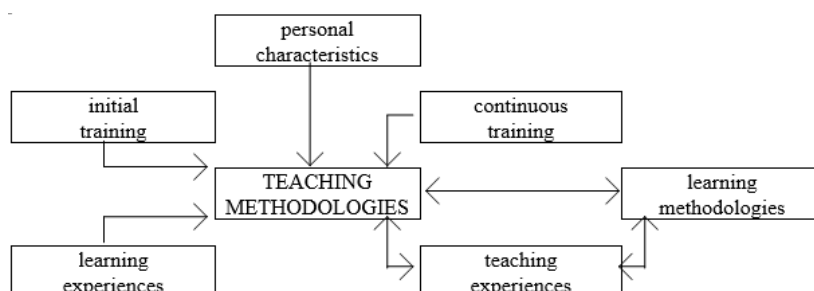
What we might call the "empirical postulate", *i.e.* the evidence that the secret of practical language learning lies in the practice of the foreign language itself, has consistently, right up to the present day, weighed heavily on DLC research, on conceptions of teaching-learning and on the mechanism for developing any new methodology (on this last point, cf. [2024a](#), chap. 3, pp. 8-9). This postulate corresponds to statements such as: "it is first by speaking the language that one learns to speak it", "it is first by writing that one learns to write it", "it is first by communicating that one learns to communicate"⁴⁰, and now, with the social action-oriented approach⁴¹, "it is first by acting in a foreign language in the classroom micro-society that one learns to act in a foreign language in the outside society". This postulate explains, in DLC, the importance of all activities that implement the principle of maximum homology between ends (the goals of social language practice) and means (the activities carried out in the classroom to achieve these goals). In the case of the social action-oriented approach, the goal of training a social actor mechanically reactivates the already well-known pedagogical orientation that makes maximum use of the homology between the external society and the classroom society, namely project pedagogy (cf. [2014b](#)).

3.2.1.2 Methodological inputs

For teachers, the methodological inputs are already based on their own past experiences and influenced by their personal characteristics, then through initial training, continuing education, their teaching experiences (necessarily highly modelled by the textbooks they use⁴²), their reading (including official instructions) and personal contacts with colleagues. In the [General introduction](#) to this essay, I cited a "practical theorizing session" ([1999h](#), pp. 28-30) on the different origins of personal teaching methodologies. I proposed (p. 33) the following:

Figure 10

The different inputs in the teacher's methodological system



These "origins" of personal teaching methodologies constitute as many methodological inputs into each teacher's methodological system. They can lead to two different results:

–They remain "practical models", *i.e.* they only give rise to an identical "methodological application" (see corresponding dotted arrow in [diagram 1](#)).

⁴⁰ Hence the importance of simulation in the communication approach, which ensures maximum homology between learning practice and language use.

⁴¹ I've published a large number of texts on this social action-oriented perspective, whose titles and summaries, along with download links, can be found in the corresponding bibliography section of my website: "[Bibliographies – Perspective actionnelle](#)".

⁴² These are probably the inputs that have the strongest effects, because they are permanent and pervasive, at least insofar as the textbooks are followed rigorously (which corresponds to levels 1 to 3 of a teacher's competence in using his or her textbook: cf. [2015e](#), pp. 2-4).

-They are regularly confronted with the field, and consequently they give rise to new conceptualizations, making them part of the dynamics of the praxeological subsystem.

The major challenge of initial teacher training is to implement training strategies that encourage the most rapid possible integration of methodological inputs into the praxeological system of future teachers: case studies illustrating the decisive importance of the environment, reflective accounts of observations of different classes, alternating periods of didactic courses with periods of personal practice, etc. One of the criteria for assessing the final dissertation must be precisely this ability to praxeologize methodological models.

"Inputs" also exist in the development processes of major historical methodologies. In my essay [2024a](#), I showed that they are built in opposition to earlier methodologies⁴³, but also that they can extend them (as is the case between audiovisual methodology and the communicative approach), and also that they all borrow eclectically from each other⁴⁴. In a recent essay ([2024a](#)), I proposed a "3M (Matrix - Models - Methodology)" model of "the mechanism of change, elaboration and adaptation of methodologies in DLC", in which "models" (pedagogical, linguistic, cognitive, cultural, methodological, epistemological and ideological) constitute so many inputs into the process of elaboration, and possibly later adaptation, of these methodologies, which can themselves be considered as systems.

Pedagogical and, more broadly, school cultures, which are another example of methodological inputs and are directly influenced by social cultures⁴⁵, can also be considered as social inputs (cf. [chap. 3.2.1.4](#) below), insofar as they are also part of the external environment of the teaching-learning-using process.

3.2.1.3 Technology inputs

I've already analyzed what I didn't yet call "technological inputs" in several articles, in particular [2009e](#). and, most recently, [2022c-en](#). They present the different ways in which, over the course of history, these inputs into the research system have been organized, and which are still the different options available today.

The most complete and detailed presentation is that of article [2009e](#), in which I define pp. 3-5 the "five different postulates concerning the mechanisms we consider to be at work in the functioning of the relationship between technological innovation and didactic innovation":

⁴³ Direct methodology was thus systematically opposed to traditional methodology ([1988a](#), chap. 2.2 "Les origines de la méthodologie directe" ("The origins of direct methodology") and chap. 2.1.5 "La rupture avec la méthodologie traditionnelle scolaire" ("The break with traditional school methodology"), p. 72). In a 2014 article, I explained why I had developed my version of the action perspective in the same way, in opposition to the communicative approach ([2014a-en](#), "Introduction", pp. 3-4.).

⁴⁴ This was the case with active methodology, the official methodology used in the teaching of modern foreign languages in schools in France from the 1920s to the 1960s, whose promoters set out to correct what they saw as the excesses of direct methodology by a partial return to certain approaches of traditional methodology (cf. [1988a](#), chap. 3.2 "Les principes de la méthodologie active" ("The principles of active methodology", pp. 148-153). This was also the case with FFL textbooks from the 1980s onwards, which abandoned the strong version of the communicative approach to return, in particular, to a more systematic teaching of grammar with "traditional" exercises in identification, conceptualization, application and practice (cf. [1994e](#), chap. 1.1.2 "Eclecticism and teaching materials", pp. 16-19).

⁴⁵ The level and frequency of use of the active method or the opposite "transmissive" method, for example (cf. [008](#)), will inevitably be very different in educational institutions in more egalitarian or more hierarchical societies.

-Technological determinism: *the potential of technological innovations is said to generate mechanical effects of didactic innovation.*

This postulate corresponds to a position we might call "technological applicationism". In a number of experimental reports, we get the impression that intervention in the field is mainly determined by the activities generated by the technology used.

-Social determinism: *Technological innovations will only develop and/or spread if they correspond to social demands, expectations and needs, in this case those of learners and teachers; what's more, these users will appropriate them by imposing their own uses, if need be by hijacking them in their own way and for their own benefit.*

If we start from this postulate, we'll consider that technological innovations correspond to a combination of technological and social inputs. This intervention strategy is certainly more interesting from a didactic point of view than the first, insofar as it necessarily leads to observing, analyzing and interpreting learners' behaviors, which then makes it possible, by conceptualizing the new data thus collected, to launch the recursive dynamics of the praxeological subsystem.

-Disciplinary determinism: *the demands, expectations and needs of the various disciplines (DLC, for example) would lead their specialists (didacticians, methodologists, textbook designers, inspectors, trainers and teachers of languages-cultures) to promote or use this or that technology in this or that way, to realize this or that potential.*

This postulate is the basis of a kind of "technological implicationism" which, like technological determinism, assumes the existence of "technological models" that can function directly as methodological models. As I point out in this article (p. 4), it was in part this postulate that served to justify the massive use of language laboratories in the 1960s-1970s.

-Convergence/divergence: *A historical "convergence" (we could also speak of "conjunction", "encounter", "coincidence" or "synergy") between technological potential on the one hand, and social and disciplinary demands, expectations and needs on the other, would have to occur for "sustainable innovation" to emerge, i.e. innovation that spreads widely and is sustained over time. If this conjunction did not take place, or worse, if there were divergence(s), no lasting and widespread relationship could be established between a didactic innovation and a technological innovation.*

This postulate, like that of social determinism, can be interpreted in my modeling of the DLC research system as a variant of the combination between didactic, social and technological inputs.

-The postulate of complexity: *This last postulate can be called "complex" because it includes all the previous ones, while considering that the corresponding mechanisms play out in a way that is as diverse and variable as it is random: the presence of the four previous types of mechanism would be constant, and depending on the case, it would be one or other of them that would impose itself, or combine (simultaneously) and/or articulate (chronologically) with one or more of the others.*

This postulate ties in with the idea, on which all my modeling of the DLC research system is based, that this system is complex in the sense that the processes that make it up are many and varied, and that they operate in highly variable ways.

Many specialists are critical of the way in which technological inputs into the research systems of school disciplines in general operate. Bruno Devauchelle, for example, considers that "experimentation-innovation is over-valued in relation to ordinary practices" (2015); and if we are to believe Jean-François Fiorina (2015), these experiments themselves would be under-exploited because of the rapid evolution of technologies: "the speed of evolution leaves little time for experimentation and taking a step back." If these observations are correct, it is unfortunately to be feared that technological inputs will not be able to feed the various processes of the praxeological subsystem, whose operation requires time, practice and collective reflection; not to mention the difficulty of linking praxeological and theoretical subsystems: how can ergonomics studies be mobilized when, in the space of a few years, classrooms have moved from desktops to TBIs, then to tablets and smartphones? There's a lot of talk about "digital environments", but sustainable innovation –the only kind of innovation that really interests educationalists, because it's the only kind that ensures the widespread adoption and sustainability of new methodological models– would certainly require different research environments.

The conclusion of my [2009e](#) article was precisely entitled "Some rules of action for sustainable innovation" (p. 17). I subsequently took them up in several publications, until I arrived, in a conference entitled "Convergences between the social action-oriented approach and digital tools" (Bilkent University, Ankara, conference in English on May 30, 2024, unpublished), at the following model (my translation):

1. Start from **didactic determinism model**⁴⁶. This points towards the Social Action-Oriented Approach (SAOA) and its reference pedagogy, project pedagogy, for two reasons: a) it's the didactic innovation of the moment in all disciplines (not just language), and b) it's the didactic configuration with which convergences are greatest with digital technologies.
2. Consider the convergences and divergences between didactic and technological innovations (**convergences-divergences model**).
3. Look for possible didactic innovations by exploiting the potential of technological innovations (**technological determinism model**).
4. Take account of the **social determinism model**: a) mobilize students right from the start of the transformation process, b) focus on their everyday use of digital technologies.
5. From the outset, create the conditions for sustainable transformation (i.e., widespread and long-lasting): this means **working on a manageable scale**, that of the institution (university, school...), ensuring strong and constant support from the institution, and mobilizing teachers from all disciplines.

Indeed, these are all steps that need to be taken to ensure that technological inputs can truly enter the recursive dynamics of the praxeological subsystem.

⁴⁶ From the moment we consider the various postulates not as mutually exclusive, but as combinable with each other, we can consider, from an epistemological point of view, that they function as "models".

3.2.1.4 Social inputs

These are the most important in terms of the evolution of the general research system. This is one of the main lessons I drew in the general conclusion of my *History of Methodologies*, where, in listing "the striking impressions I have brought back from this historical journey", I wrote that I had been particularly struck...

*... by the close and constant relationship between this DLVE⁴⁷ and **the economic, political and intellectual life of the country**, which means that the real driving force behind methodological change is not the internal evolution of the didactic discipline (in particular, as is often presented, the changes taking place in the reference theories, be they pedagogical, psychological, linguistic...), but rather the emergence of new social needs: the teaching of LVEs, and consequently reflection on this teaching, appear as eminently social practices, beyond the individualistic or technocratic illusions that its various actors may sometimes entertain. ([1988a](#), p. 263, emphasis added)*

These social inputs also constantly influence the effects that other inputs may have in any of the subsystems: at the end of the same book, I wrote that I had also been struck...

*... by the enormous and decisive influence of **teaching-learning situations**⁴⁸ on the destiny of each of the methodologies developed: inadequate teacher training, too few teaching hours per week, too many learners per class, too low a level of motivation and too much heterogeneity, among other things, were constantly felt by direct and audiovisual methodologists to be the most powerful brakes on innovation and the main culprits behind failures. Methodology has constantly fluctuated between, on the one hand, taking teaching-learning situations into account and developing methodologies that wanted to adapt to them from the outset (MT, MA)⁴⁹, and, on the other, building ambitious projects whose implementation would have required a radical change in existing situations (MD, MAV). We seem to be returning to a phase of prioritizing these situations, probably as a result of the development of LVE teaching for adults, where situations are extremely diverse, and also because of the massification of Secondary Education, which is increasingly becoming its primary reality. But whatever direction is chosen, these teaching-learning situations ultimately prove to be decisive, over which methodologists, course designers and teachers as such have no control (1988a, p. 261).*

My subsequent research to date has not altered this analysis, but on the contrary, has reinforced it by showing that these social inputs continue to operate in the same way, and just as powerfully. A few years ago, I introduced the concept of "didactic configuration" (cf. [029](#)), in which the function of the social goals of languages and cultures is decisive: it is in fact a significant change in one and/or other of these goals that triggers the general reconfiguration process that will ultimately lead to changes, in ministries, in curricula; in publishers, in textbooks; in classrooms, in learners' expectations and teaching practices. The latest evolution in didactic configurations, that which appears in the *Common European Framework of Reference of 2000* with the new goals of plurilingual and pluricultural competence and the training of a social actor, is no exception to the rule (cf. [2014a-en](#) and its bibliography). In the model for

⁴⁷ DLVE, "*Didactique des Langues Vivantes Étrangères*" ("Didactics of Modern Foreign Languages"). Further down : LVE, "*Langues Vivantes Étrangères*", "Modern Foreign Languages".

⁴⁸ I would now write "teaching-learning-using situation", precisely to take into account the importance of the intended social uses of L2 (cf. [2023 12 04](#)).

⁴⁹ MT = traditional methodology. MA = active methodology. In the rest of this quotation: MD = direct methodology. MAV = audiovisual methodology. LVE = modern foreign languages.

change, development and adaptation of methodologies in DLC that I published in 2024, the "3M (Matrix - Models - Methodology)" mechanism, it is the same mechanism that I propose:

A new methodology emerges as a result of a social change in the intended use goal and use situation of the L2, and a new matrix is formed with these two primary elements, to which are added the action of use and the corresponding language and cultural competences. The new methodology is then generated by applying a range of different models to this matrix: pedagogical, linguistic, cognitive, cultural, methodological, epistemological and ideological. (2024g-en, p. 2)

This is why I believe that the central problem of DLC, traditionally called "teaching-learning", should be called "**teaching-learning-using**": the main goal of an L2 class is to bring out a genuine use of the L2, and the main means used to achieve this is precisely this same use of the L2 (this is the principle of "end-means homology" presented in my blog post [2023 12 04](#), which I take up again in my article [2024g-en](#), and, at greater length, in the joint work Acar A. & Puren C. 2024 (to be published)).

3.2.1.5 Theoretical inputs

The theories external to DLC that enter its research-intervention system are treated in two main ways. Either they are used solely for rhetorical mobilization (cf. *below* [chap. 3.3.2.6](#)), or they are used to generate theoretical models which can then be entered into various linear or recursive search processes (cf. [diagram 1](#)).

It's not always easy, when looking at the history of methodologies, to weigh up what really comes from theoretical inputs. Let's take the example of the models for the design and management of cognitive teaching-learning processes that I summarized in document [016](#). The ideas I will present below⁵⁰ can certainly be discussed indefinitely, as the historical truth –if that concept really has any meaning in this case...– is now definitively impossible to reconstruct.

–*The models of reception and impregnation (or "immersion")* corresponded to empirical inputs. Neuroscience is likely to shed light on the neurological mechanisms at work in this natural acquisition that the immersion model seeks to reproduce, but this will not resolve the issue of the complex management of cognitive models to be implemented in formal learning, which will always have to remain varied and variable.

–*The activation model* –that of direct methodology, implemented mainly by means of the "interrogative method" (teacher's question → learners' response → teacher's correction: cf. above Figure 5, [chap. 1.4](#), p. 12): in fact, this interrogative pattern is never used in this intensive, systematic way anywhere other than in formal learning, even in natural learning support situations, such as by a mother with her child. It's probably a methodological model developed over the centuries by the processes at work in the praxeological subsystem: we find it already in the "Socratic method" used in Plato's dialogues, and we find it later in the Tridentine catechetical model of the XVIth century. This model was reactivated and reinforced by the emergence of "active methods" at the end of the XIXth century, themselves influenced by the theoretical research of the time on child psychology⁵¹. But it's hard to say to what extent. As this research is very rarely cited in the texts of the methodologists of the time, we can assume that it only corresponds to "rhetorical mobilization". What's more, to my knowledge, there has been no attempt to develop a corresponding theoretical model, even in François Closset's entire 1950 work on active methodology: the extract reproduced in document [006](#) is a good example

⁵⁰ See also [section 3.3.2.6](#) below.

⁵¹ Cf. [1988a](#), p. 78.

of the different techniques for implementing a praxeological model, that of the "active method").⁵²

-*The reaction model* does seem to correspond to a theoretical entry that can be identified and explicitly claimed by American audio-lingual methodologists –behaviourism– but I noted in my *Histoire des méthodologies* ([1988a](#)) that the preoccupation with building automatisms by means of intensive mono-structural exercises does not date back to audio-lingual methodology: this theoretical entry did give rise to theoretical application (the corresponding theoretical model, namely the Skinnerian stimulus-response-reinforcement schema, was put into practice as such in structural exercises using dual-track tape recorders), but it also partly functioned in the mode of rhetorical mobilization. It was largely in this same mode of rhetorical mobilization that structuro-globalism functioned in French audiovisual methodology, where, as I also noted in *Histoire des méthodologies*, it served as a kind of "antidote" to the anti-mentalist "virus" of behaviorism⁵³. For the reason given by S. Moirand in his 1988 article (cf. p. 10, above), that of the desire for legitimacy, methodologists have always tended to overemphasize theoretical references, i.e., to put it in the terminology I use here, to engage in rhetorical mobilization.

-*The interaction model* (that of the communicative approach) is of empirical origin, even if, as we have seen above, theoretical research on the "co-construction of subject and knowledge" has been rhetorically mobilized (cf. *below* [chap. 3.3.2.6](#)).

-*The construction model*, with its central postulate of interlanguage, provided scientific legitimacy for long-standing grammatical conceptualization activities⁵⁴, and thus fuelled rhetorical mobilization. But it has also given rise to a variant of the praxeological model of grammatical conceptualization by learners, namely learners' conceptualization of their own errors; and no longer, as previously, of model statements: See the model in Figure 9, p. 24, above. For the moment, I've seen references to socio-constructivism, even with its theoretical model of "group problem-solving", function only as a rhetorical mobilization: which is not to say that it can't, like the others, have an indirect but very concrete effect of reinforcing one or other praxeological model.

-*What about the "proaction" model*, which I put forward in the same document [016](#) as a new theoretical reference for the social action-oriented approach, or the cognitive theory of "mirror neurons" (cf. *below* p. 44)? Only the future of DLC will tell us whether they will one day enter a process other than the one to which they are currently limited, that of rhetorical mobilization...

3.2.1.6 *The historical example of inputs in the case of direct methodology*

In my *Histoire des méthodologies*, in the introduction to chapter 2.2 devoted to the origins of direct methodology ([1988a](#), pp. 65-81), I wrote the following:

When it comes to describing the "origins" of MD, the various chapters practically impose themselves on the historian. At the same time, however, it seems very difficult to classify and, above all, rank these various "origins" in a way that is not largely arbitrary. In this labyrinth of causes, sources and influences that have presided over the birth, life and posterity of the MD, I cautiously invite readers, beyond the path that I have to trace, to unwind their own Ariadne's thread (p. 65).

⁵² For a presentation of this method, see [005](#).

⁵³ For all these remarks on the reaction model, I refer to my [1988\(a\)](#) work, chap. 4.1.3, pp. 198-202 and chap. 4.2.3.2, pp. 231-234.

⁵⁴ They are already central to traditional "grammar-translation" methodology (cf. [1988a](#), Part I, pp. 16 ff.).

As I said earlier, in [chapter 3.2.1.5](#), it's not easy to weight what really comes from theoretical inputs. In fact, it's the weight of each type of input, and the weight of each type of input in relation to the other types of input, that is difficult to estimate *a posteriori* in methodological systems. I can now classify the ten "origins" of direct methodology that I identified in my *History of Methodologies* ([1988a](#)) according to the typology provided by the concepts in [Diagram 1](#) (the chapters numbered below are those from this 1988 work):

-1 empirical input:

- The natural method (chap. 2.1.8)

-4 methodological inputs

- The internal evolution of traditional methodology (chap. 2.1.4)
- Breaking with traditional school methodology (chap. 2.1.5)
- The German model (chap. 2.1.6)
- Precursors (chap. 2.1.7)

-3 social inputs

- New needs and goals (chap. 2.1.1)
- Political and educational context (chap. 2.1.2)
- Professionalizing the teaching profession (chap. 2.1.3)

-2 theoretical inputs

- The new psychology (chap. 2.1.9)
- Practical phonetics (chap. 2.1.10)

These numbers of different inputs for direct methodology have no general statistical value in DLC. At most, they show, if proof were needed, the complexity of the mechanisms at work during methodological (r)evolutions in this discipline; they also show –at least I hope they do– the interest and relevance of the systemic concepts used in this present theory of DLC research.

3.2.1.7 The example of "models" in "3M" (Matrix - Models - Methodology) modeling

Above, I've already had occasion to refer several times to the "3M" model (Matrix - Models - Methodology) that I proposed in my essay [2024g-en](#) (chap. 3, pp. 7-9). I've also talked about this in [chapter 3.2.1.2](#), above, where I specified that "pedagogical, linguistic, cognitive, cultural, methodological, epistemological and ideological models [there] constitute so many inputs into the process of elaboration, and possibly later adaptation, of these methodologies considered themselves as systems" (p. 26)⁵⁵.

A comparison between the inputs in the present text (2024i) and the models in the 2024g-en text leads to the following table:

⁵⁵ For a much more detailed presentation and analysis of these different models, see the forthcoming book Acar A. and Puren C. 2024.

Table 2

Comparison between "models" according to Puren 2024a and "inputs" according to Puren 2014i

Models (2024g-en)	Inputs (2024i)
[end-means homology]	empirical
methodological	methodological
technology	technology
ideological	social
pedagogical linguistic cognitive cultural epistemological	theoretical

I've classified as "theoretical inputs" all the models produced by disciples outside DLC, without getting into the tricky question of whether they produce theories *stricto sensu*, or just models, like DLC.

As I also made clear in my essay [2024g-en](#), certain models have close, even structural relationships with each other: pedagogical models, for example, always depend to some extent on social models and ideological models, and they in turn strongly influence methodological models; the pedagogical model of the social action-oriented approach/project pedagogy– is at once a pedagogical model, a methodological model and a social action model; the end-means homology, mentioned several times above, is an empirical principle, but its application constitutes a major pedagogical orientation in pedagogy, and its emphasis in DLC, as I do myself, strongly influences the conception one can have of the epistemology of this discipline.

But whatever the key concept used –"model" or "theory"– it is always the extreme complexity of the research system that imposes itself on analysis. Teachers, researchers and trainers cannot escape this complexity, but we can at least ask them to be aware of it, and to draw the necessary conclusions.

3.2.2 System outputs

In systems theory, every system has inputs and outputs. The "outputs" of the general system of DLC research can be produced by the praxeological subsystem –reports of practical experiments, class preparation sheets, textbooks, exercises of all kinds such as can be found in large number on the Internet, etc.– or by the theoretical subsystem –linguistic analysis of classroom exchanges or textbooks, proposals for practices based on this or that cognitive theory, etc. Comprehensive training programs should draw on all types of input and output.

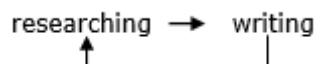
3.2.3. Reinputs and new inputs into the system

Figure 5 "Model of the document questioning system in active methodology" (p. 12) provides a good illustration of the difference between the two dynamics in which outputs can be taken. At the level of the global search system, the outputs of this system can generate reinputs (leading to a modification of searches in progress) or new inputs (leading to new searches): a conference will give a teacher the idea of experimenting with a new procedure; a training course will lead teachers to test a new methodology, or at least some of its components; the presentation of a new textbook will convince teachers to adopt it; a book or an article will give certain university researchers the idea of new research, or a reorientation of their current research; etc.

Research writing is also an example of both reinputs and new inputs. In the first chapter entitled "Research and research writing" of the online course "Research writing in DLC" (2021h-en, p. 1), I propose the figure below:
2021h-en

Figure 11

The recursive search-write-search loop



And I comment as follows:

[Research writing] is not only a "writing-product-of-research", i.e. the writing of a text that would collect the product of the research: what the researcher did, why, how, with what results and for what conclusions (which corresponds, in the above diagram, to the top arrow, from left to right). At the same time, it is a "writing-process-of-research" (bottom arrow, from right to left, in the above diagram): it is because one is in the process of writing one's "research work", or "research writing", that one is in a position to write a report. It is because one is writing one's "research paper" that one realizes that certain ideas are not yet clear, or that they are not relevant, or that it is impossible to validate them; or that they are not sufficiently hierarchical, linked, logically articulated to each other and the general problematic; or that those that have emerged from the experiments or the reading of new articles require that the problematization be reworked, or even that the research goals be modified; etc. (pp. 1-2)

It seems to me that we can distinguish in this passage between internal recursive loops or "reinputs" (from the beginning to "... in relation to the general problem"), and external recursive loops or "new inputs" (the rest of the passage).

3.3 Internal dynamics

These dynamics are created within and between the two sub-systems of the overall system by two types of processes: recursive (solid arrows in [diagram 1](#)) and linear (dotted arrows).

3.3.1 Recursive processes

In the modeling process they propose (cf. supra chap. 1.2, p. 8), A.M. Huberman & M.B. Miles cite, after the conceptualization of field data, two other types of successive operations, theorization (i.e. the construction of a "conceptual-theoretical coherence"), then modeling (i.e. the elaboration of "matrices, graphs, diagrams and tables").

In DLC, conceptualization (of field data) can follow either "theoretical mobilization" or "praxeological mobilization". We'll look at the two main types of recursive process that can take place from here, one in the theoretical subsystem with a priority comprehension logic, therefore, and the other in the praxeological subsystem, with a priority intervention logic. Following conceptualization, the choice between "theorizing" or "theoretical modeling" on the one hand, and "praxeological modeling" on the other, is what we might call an "epistemological bifurcation" within the overall system of DLC research.

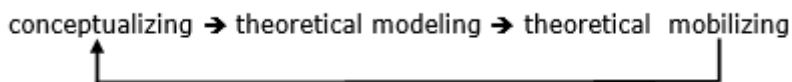
3.3.1. Recursive processes in the theoretical subsystem

The bifurcation at the exit from conceptualization to the theoretical subsystem takes place when the concepts become detached from their original field data, because the researcher begins to work on them both in themselves and in relation to each other, with the aim of achieving the

"conceptual coherence" spoken of by A.M. Huberman & M.B. Miles: having tested the relevance of his theoretical model in the field, the researcher then sets up the following recursive loop:

Figure 12

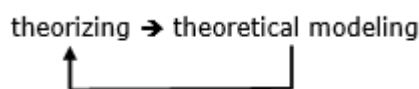
The recursive loop of conceptualizing - theoretical modeling - theoretical mobilizing - conceptualizing



It is possible that the feedback effects on theoretical models will lead the researcher to question the theories themselves, and a new recursive loop may be set in motion, which can be represented as follows:

Figure 13

The recursive loop of theorizing - theoretical modeling - theorizing



This loop may in turn lead the researcher to perform theoretical reinputs, *i.e.*, in concrete terms, to call upon new theoretical elements.

The theoretical subsystem has its own specific logic (that of adequacy to reality and that of internal coherence), and it may sometimes fail to introduce into the conceptualization of field data elements that can be reused in praxeological modeling. This is the case described by Dominique Bucheton and Élisabeth Bautier in a 1996 article entitled "Interactions: co-construction of subject and knowledge", in which they review all the theories available on this subject. They conclude quite honestly:

*Most of this research is cutting-edge and provides real knowledge, but **it focuses on the very functioning of exchanges in their linguistic and conversational dimensions.** Even if they are useful for understanding how the classroom works, or how the subjects of interaction construct what happens in it, that's still not enough. **Up to now**, this research has not focused on subjects in their individual and social specificity. For the time being, at **least**, they have not been of much help in improving learning situations, even if they have nevertheless shown that learners, even those in difficulty, that children, even the very young (Frédéric François), demonstrate possibilities for language exchange and discursive as well as referential elaboration, often unrecognized –and thus unused– as competences or knowledge by teachers. (emphasis added)*

In other words, the mobilization of theoretical models makes it possible to produce new data, but (cf. the first underlined passage) the bifurcation towards praxeological modeling fails to materialize. It is surprising that the authors criticize teachers for failing to capitalize on their students' discursive competences, while acknowledging that researchers themselves are unable to propose corresponding praxeological models... Note also the two underlined expressions in the rest of the quotation ("so far", "for the moment at least"): expressions of this type are systematically used by those who wish at all costs to protect their –somewhat scientific– faith in the obligatory effectiveness of all theoretical research in DLC. Yet history shows many

examples where the theoretical subsystem fails to rapidly provide reinputs into the praxeological system, and the corresponding theoretical research ends up being abandoned⁵⁶. One of the general conclusions I drew at the end of my *History of Methodologies* (1988a) was as follows:

I do not deny the reality of certain advances in reference theories, but I note that they have led more to the posing of new problems than to solutions to problems already posed, and that methodological "revolutions" have operated less as renewals than as shifts in the didactic problematic. (p. 264)

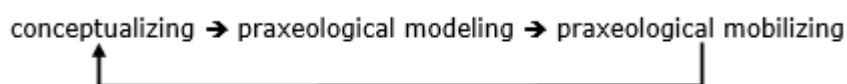
An example of this is research into the evolution of learners' errors during the course of their learning, from which some specialists thought in the 80s that they could generate ideal models of linguistic progression between such and such a source language and target language: this research project failed because of the complexity of the evolution of individual interlanguages (cf. *above* Vogel 1995, p. 11). Although a few lingering publications still appear on the subject, the original ambitious scientific project has been abandoned.

3.3.1.2 Recursive processes in the praxeological subsystem

Following a theoretical or praxeological mobilization, the bifurcation, at the end of the conceptualization, can take place towards the praxeological subsystem, in a logic of intervention, therefore. The aim is to process field data from a didactic perspective, as when specialists in discourse analysis study corpora of classroom language interactions so as to draw out information and proposals for the classroom (this was initially a theoretical mobilization); or when didacticians or teachers research the effects of different modes of implementation of "The standard language exercitation procedure" (2016c-en) depending on the students, the types of grammatical problems or the types of tasks prepared: this was then initially a praxeological mobilization, which, by definition, aims to seek the best possible match between praxeological models and the characteristics of the action environment⁵⁷. The recursive loop that can then be set up is as follows:

Figure 14

The recursive loop of conceptualization – praxeological modeling – praxeological mobilization – conceptualization



This recursive loop functions as an iteration loop when the conceptualization confirms the praxeological model implemented (which is thus mobilized again in identical fashion), and as a feedback loop when the model is modified. When the praxeological model is confirmed a large number of times –after several iteration loops, in other words– it is possible for it to become a practical model: it then leaves the recursive loop of conceptualization - praxeological modeling - praxeological mobilization - conceptualization, giving rise only to "methodological application".

⁵⁶ "There is no problem that resists indefinitely the absence of a solution"...: this thought is attributed by some historians to Henri Queuille., a French politician who was several times Minister and President of the Council under the III^e and IV^e Republics. It is highly relevant when we look at the history of DLC. As its field is made up of permanent issues, not problems (see again 023), change often consists in abandoning an issue that has been momentarily exhausted to take up an old one, in the best case by treating it with the new tools available.

⁵⁷The intervention logic in at the same time, by its very nature, a logic of adequacy, a teacher's primary skill being his or her ability to adapt.

3.3.2 The linear process

The second type of process that ensures the dynamics of the DLC research system are linear processes. They are represented in [Diagram 1](#) by the dotted arrows (see the legend at the bottom of this diagram). I will go through them one by one in the following six sub-chapters. I begin with three operations of the same epistemological orientation, applicationism, and then deal with two inverse operations between the same two elements of the system, theoretical models and praxeological models. All these operations, like those we have already analyzed, can be carried out both by teachers in their classrooms and by researchers in their didactic intervention proposals to teachers.

3.3.2.1 Methodological application

For a teacher, the methodological application consists of directly implementing a methodological model in his or her own practice just as he or she has borrowed it, and which has therefore made a "methodological input" " (cf. [chap. 3.2.1.2](#), above) into his teaching system as a "practical model" (cf. *below* [chap. 3.1.2.1](#), above). To take a computer metaphor, we could say that the teacher "copies and pastes" lines of code from a "methodological object" into his professional software (cf. [2012f](#) and [2019g](#)). It is possible for this practical model to be transformed into a praxeological model if it gives rise, after confrontation with the field, to conceptualization and then praxeological modeling. The practical models, *i.e.* the models that simply give rise to application, do not appear in the DLC research system simply because they do not give rise to a research approach on the part of the teacher.

In a recent article ([2022d-en](#), pp. 9-12), I proposed a typology of applicationisms in which I distinguished between two types of methodological applicationism. One, which I have called "methodological applicationism", concerns the major generalist methodologies – in France, since the beginning of the XXth century, these are the methodologies of grammar-translation, direct, active and audiovisual, the communicative approach and the social action-oriented approach. The other, "practical applicationism", "[can be seen] as a variant of methodological applicationism but, unlike the latter, it is not a set of practices determined by an overall coherence, but "*best practices*" that are more or less isolated and punctual" (p. 12). These practical models need to be tested by each teacher in his or her own field, because there are no absolute "best practices"⁵⁸. We can nevertheless understand that some of them, if they correspond to micro-models (cf. above [chap. 3.1.2](#) p. 20), can enrich teachers' stock of professional automatisms (cf. above [chap. 3.1.2.1](#)).

3.3.2.2 Technological application

Technological application occurs when teachers use and/or have their learners use technologies (a video projector, a computer, the web, a chatbot, etc.) exclusively within the epistemological framework of the "paradigm of technological determinism" as I presented it above in [chapter 3.2.1.3](#), p. 27, *i.e.* by considering that this technology will mechanically generate beneficial effects for learning. This is tantamount to confusing two very different notions:

–between **innovation**, which is immediately (and easily) made possible by technological application: innovation is based on experimentation with a new technology, it is localized and one-off, and the researcher(s) most often mobilize maximum resources in the most favorable environments possible.

⁵⁸ For a critique of what might be called a "best practice ideology", currently found in the recommendations of major international bodies such as UNESCO, the OECD, the Council of Europe and the European Commission, see [2016 01 05](#) and [2007a](#) point 4, p. 3.

–and **change**, which only occurs when the innovation becomes widespread and permanent among teachers⁵⁹.

However, change depends on multiple factors, so that in projects genuinely aiming for this generalization and perpetuation, it is necessary to implement an approach that takes into account all available paradigms, as I proposed in the "rules of action for sustainable innovation" also presented above in [chapter 3.2.1.3](#) (p. 28).

3.3.2.3 Theoretical application

Theoretical application is the process of implementing theoretical models directly in the classroom (cf. the corresponding arrow in [Diagram 1](#)). It is to theoretical applicationism, the best known in DLC, that French didacticists of languages-cultures generally think when they use this concept, which refers concretely to the applied linguistics and applied psychology of the 1960s, against which "*la didactique des langues*" (the "didactics of languages") imposed its name and its claim to autonomy in France in the early 1970s (cf. [043](#)).

One of the hallmarks of theoretical applicationism is the criticism that theoretical concepts of extra-didactic origin are degraded once they enter the DLC research system. I dealt with this issue at length in a 1997 article ([1997b](#), chap. 3 pp. 5-7), in which I quoted Richard Rorty's central idea of pragmatism, which is to "treat theory as an auxiliary to practice, rather than seeing practice as the product of a degradation of theory" (1995, p. 29). Now, I would be prepared to accept the idea that concepts coming from theoretical inputs do indeed degrade once they have been integrated into the DLC research system; but I would immediately point out that this is normal and positive: they degrade in exactly the same way as food must be degraded in order to be assimilated by an organism. The difference between a linguist's attitude towards the concepts of his theory and that of a didacticist towards the same concepts can be compared to the different views of the same basket of fruit held by a biochemist and a nutritionist.

The didacticists' battle against applicationism cannot be considered won these days, particularly as many sociolinguists seem to have adopted the positions of the linguists of the 60s. Among the many examples that regularly demonstrate the permanence of the applicationist temptation, here's an extract from the call for papers for a 2015 symposium: the research question thus drafted to define one of the symposium's axes is a veritable scientific delusion:

Why and how can cognitive psychology, cognitive linguistics, cognitive sociology, artificial intelligence, etc. provide methodological foundations for research into the DLC, in this case in the design of teaching approaches, textbook design, learning assessment methods, the question of learning aids in the context of new educational technologies, etc.?

French linguist and FFL didacticist Sophie Moirand has criticized this applicationism, while understanding it. In her 1979 book (I'll come back to her proposals for "pre-pedagogical analysis" in the next chapter), she writes:

The first danger would be to confuse it [the pre-pedagogical analysis carried out by the teacher preparing his lesson] with theoretical discourse analyses (or textual grammars), and to subordinate it to a single linguistic theory. We understand the legitimate desire of

⁵⁹ This structural contradiction generates one of the "laws" of DLC, namely that the more successful an experiment is, the less generalizable it is. This is one of the seven "scientific laws" I have identified in DLC over the course of my career: cf. [078](#).

teachers, when they retrain, to apply what they learn, and the (even more legitimate) desire of theorists to see their models applied. But the language classroom must not become a field of application for theories in the making: there are many other places where their validity can be tested (p. 91).

I, for one, am far less understanding, and would certainly not describe as "legitimate" the claims of linguists, sociolinguists, psycholinguists and other cognitivists to occupy a "meta-position" in relation to didacticians of languages-cultures. In any case, it's not up to them to grant themselves this legitimacy in the field of didactics, and I don't see why didacticians would grant it to them, in view of all the negative effects that theoretical applicationism has had and is still having on the content of French university training courses in the didactics of French as a foreign language, and on the management of the academic careers of genuine didactic researchers in languages-cultures.

The struggle against theoretical applicationism, which is still necessary today⁶⁰, should not obscure the fact that, as we have just seen, there has always been methodological applicationism and technological applicationism, whose effects are just as negative.

3.3.2.4 Theoretical implication

According to Denis Lehmann (1985), the concept of "linguistique impliquée" ("implicated linguistics" was proposed by Gisèle Khan, Rémy Porquier and René Vivès –FFL didacticians like himself– in a 1980 article⁶¹, to oppose the approach of "linguistique appliqué" ("applied linguistics"). D. Lehmann's article is entitled "La grammaire de texte: une linguistique impliquée" ("Text grammar: an implicated linguistics"), in which he defends the idea that the "mechanisms of textual organization" highlighted by this grammar "are likely to improve the conditions for teaching/learning reading and written expression" (p. 113). However, after taking the two "steps" he mentions below, he ends up taking a position that is not really different from that of applied linguistics, since he ends up considering that it is the whole of textual grammar that should be implemented from the outset for the teaching of written expression:

It's not much of a leap from listing those phenomena [highlighted by textual grammar] that a sentence grammar cannot account for, to designating them as the points at which textual organization is most clearly marked, and therefore as being probably, for those concerning the scriptural order, the objects on which pedagogical identification should focus with a view to learning to read. One more step and we have, with this list or any other, the already abundantly filled program of what should be included in a course aimed at acquiring the specifically linguistic components of textual competence, assuming that we deem it necessary to elaborate a linguistic content beforehand (p. 105).

We can therefore understand why this concept of "implicated linguistics" has not flourished in DLC, not even in French FFL didactics, where it first appeared: it may be thought that these linguist-didacticians only used it in reality to maintain between linguistics and DLC a close relationship controlled by linguistics, while abandoning the expression "applied linguistics", which had become "politically incorrect" in DLC since the early 1970s⁶².

⁶⁰ In 2009, I once again went to the front of the line at a conference for an audience of FFL teachers and didacticians (2009f). Even if the academic and institutional recognition of DLC seems to have progressed since the year of publication of the first version of this essay (2015), this recognition is not yet sufficiently strong and widespread for the denunciation of theoretical applicationism not yet to be topical [note September 2024].

⁶¹ G. Porquier & R. Vives R. (1980), "Didactique des langues et/ou linguistique appliquée. Le français langue étrangère", *Bulletin de l'A.F.L.A.*, no. 9. I have not been able to consult this 1980 article.

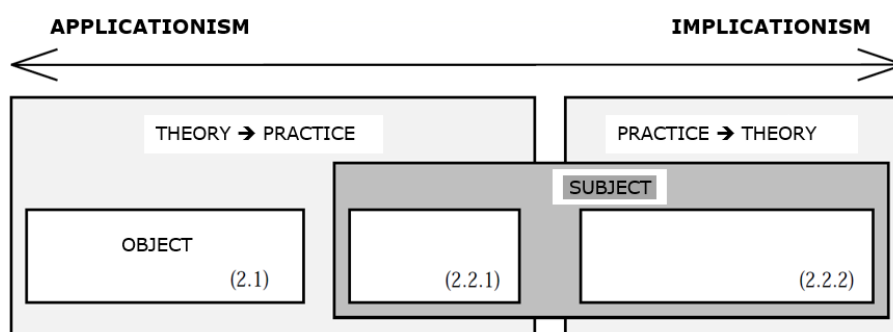
⁶² See document 003 for quotes from Denis Girard 1972 (p. 4) and Michel Dabène 1972 (p. 5).

Even so, it seems to me that "theoretical implication" is one of the processes that can be observed in the DLC research system, provided we conceive of it as a process initiated by teachers and didacticians, and carried out on an ad hoc basis, according to their needs for theoretical scaffolding. Modelled on the word "applicationism", I thus proposed, in a 1998 article, to reserve the term "implicationism" to designate the process by which these actors call on linguistics when they encounter a problem they can't solve themselves or by resorting to standard teaching grammar (1998c, p. 16). I would now say: "... a problem they can't solve themselves with the methodological models at their disposal".

In this same 1998 article, I also proposed a representation of the "fundamental modes of theory-practice relationship" in a model built on the dual basis of the sense of the relationship between theory and practice, and the opposition between object orientation and subject orientation (on this latter opposition, cf. 1998f-en), where applicationism and implicationism are found as the two extreme positions present:

Figure 15

Modeling fundamental modes of theory-practice relationships



I refer my readers to this article, merely copying below the passage needed to understand this scheme:

(1) *The meaning of the relationship between theory and practice*

(1.1) *We may decide to go from theory to practice. This is "applicationism" in the strict sense of the term, in which we consider that certain knowledge produced by external disciplines recognized as scientific can and must determine a priori the content and define the modes of intervention within the didactic field. Historically, in the case of FFL, these disciplines have been and still are linguistics and the "psychology of learning".*

(1.2) *On the other hand, we may decide to go from practice to theory. This is known as "implicationism", which involves considering that it is within the didactic field and a posteriori –according to the specific needs identified in didactic practices– that the content and modes of didactic intervention should be determined.*

(2) *The perspective we adopt to consider this theory-practice relationship*

(2.1) *This perspective can be object-oriented: the linguist and learning psychologist will draw on their knowledge (outside the didactic field) of the "language" object and/or the "cognitive acquisition/learning process" object to intervene directly and normatively with didactic subjects (learners, teachers and materials designers). This perspective is self-imposed in the one sense (1.1) above (theory → practice).*

(2.2) *This perspective can be the opposite of the subject type.*

–(2.2.1) *It can be crossed with theory to practice direction, as when linguists and learning psychologists describe and analyze the practices and productions of didactic subjects: this is the case in the analysis of textbooks, classroom discourse, learner errors, learning processes, evolution of interlanguages...*

–(2.2.2) *It is self-imposed if we adopt the practice to theory direction: it is then learners and teachers who theorize themselves on the basis of their own practices and productions before confronting their analyses with external theories; as in the "grammatical conceptualization exercises" proposed in FFL in the early 1970s, or in the "reasoned practice of language" proposed in the current French instructions for teaching English at school. (1998c, pp. 15-17)*

I came back a few years later, in my 2009 lecture quoted above in note page 39 (2009f), and modernized the idea with two conceptual borrowings: the principle of "emergence" in acoustics, and the principle of "subsidiarity" in the European Union (cf. p. 3). And I extend it to other disciplines that may also find themselves similarly "implicated" in DLC research, as can be seen from this diagram on page 5 of this article, reproduced below:

Table 3

Model of the emergence of reference disciplines in DLC subfields

Sub-domains of DLC domain			
educational	cognitive	cultural	language
philosophy	neurology	history, geography, economics, etc.	sociolinguistics
psychology	cognitive sciences	sociology	linguistics
pedagogy	psycholinguistics	cultural anthropology	grammar
didactics			
teaching-learning practices			



The vertical arrow indicates the various possible levels of recourse to disciplines outside the DLC: a teacher, in his or her practice, will be led to call on the didactician **only if** (principle of subsidiarity) **a question "emerges"** (principle of emergence: the question goes beyond his or her competencies); if the didactician doesn't have the answer (and only in this case: same principle of subsidiarity), he or she will call on specialists from other disciplines or their work, as needed.

Finally, in Dossier 7 of my [DLC-MR7](#) course, in chapter 5.2 (pp. 10-11), I represented three major possible conceptions of the theory-practice relationship in the form of three positions, corresponding to a strong conception, that of applicationism; a medium conception, corresponding to "implicationism" and "methodological applicationism"; and a weak conception, that of "pragmatism". And I clarified my personal position by reflecting on the origins of the "cognitive models" that have successively prevailed in DLC (cf. right here, [chapter 3.2.1.5](#) above).

3.3.2.5 Didactic transposition

The concept of "*transposition didactique*" ("didactic transposition") was launched by Yves Chevallard, a French mathematics didactician, in a 1985 book bearing that title, and has remained very present and active ever since, both in the didactics of the exact sciences, for

which it was originally conceived, and in the Educational Sciences, which still draw their primary inspiration from these disciplines. The subtitle of this book, *Du savoir savant au savoir enseigné (From scholar knowledge to learned knowledge)*, explains this concept: "didactic transposition" consists in adapting theoretical models to make them immediately⁶³ praxeological models (cf. the corresponding arrow between these two models in [diagram 1](#)).

This concept has never "taken" well (in DLC as we say of a graft that it hasn't "taken", that it hasn't succeeded), probably because knowledge about language, in DLC, is not an goal but a means, and an accessory means at that: metalinguistic knowledge is only a tool used temporarily in the identification, conceptualization and application phases of the grammar teaching-learning process (cf. [2016c-en](#)), but the final goal, "assimilation", is achieved precisely when learners spontaneously reuse grammatical forms without needing to mobilize this metalinguistic knowledge. Cultural knowledge, on the other hand, cannot be based on any operative cultural theory or models, and would in any case correspond only to the "metacultural component", which is only one of the five components of cultural competence (cf. [2011j](#))⁶⁴.

It seems to me that the "pre-pedagogical analysis" that S. Moirand proposed in FFL didactics in 1979, and which she had elaborated on the basis of the various "theoretical discourse analyses" or "textual grammars" available at the time, corresponded to a "didactic transposition" avant la lettre. She presented it as follows:

Any text intended for use in a language class requires prior analysis by the teacher. We'll call this "pre-pedagogical analysis", because it helps to prepare the pedagogical act and, unlike theoretical analysis, serves neither to construct nor to test a linguistic theory⁶⁵.

In the specific field of reading comprehension, pre-pedagogical analysis has two main goals:

–on the one hand, it provides the teacher with a means of investigating the workings of a text at different levels (during a lesson, he or she must be able to respond to learners' requests, which are not always predictable);

–on the other hand, it should enable the teacher to devise pedagogical strategies to help learners access the meaning(s) of a text (e.g. identification techniques, finding clues, verification tactics).

Pre-pedagogical analysis involves looking at the document from a number of different angles, in order to find the most effective pedagogical approach to the text. It must take into account the particularities of each group of learners, their motivations and their needs. For this reason, only examples (not models) of completed (and used) analysis sheets are given here. ([056](#), p. 74)⁶⁶

⁶³ "Immediately" in the etymological sense of the adverb, in this case, without passing through the *mediation* of the processual series theoretical mobilization → conceptualization of field data → praxeological modeling, with eventual bifurcation towards conceptualization → theorization → theoretical modeling. It's easy to understand why linguists in a hurry, or convinced *a priori* of the immediate and universal relevance and effectiveness of their models, would like to avoid this lengthy process... a process they can only partly master.

⁶⁴ Different cultural approaches can be identified in the history of DLC, but they depend not on cultural theories or models, but on different targeted cultural competences (cf. 019). There are different conceptions of culture in DLC (e.g. anthropological, socio-cultural, socio-historical, organizational, heritage...), but they correspond precisely to different approaches and not to theories *stricto sensu*.

⁶⁵ Here we find the "epistemological bifurcation" I mentioned earlier, p. 34.

⁶⁶ This document 056 reproduces, with the author's kind permission, the entire chapter of S. Moirand's book in which she illustrates her "pre-pedagogical analysis" using several examples of documents. This model aroused a great deal of interest at the time, and was used for a long time by many teachers. I myself drew inspiration from it to design the "*Explorar*" tasks proposed on certain documents of each didactic unit in the upper-cycle Spanish textbooks I designed and supervised in the 1990s. Cf. chap. 3, pp. 8-9, in the

It is explicitly to the concept of "didactic transposition", specifically to "the didactic transposition of theoretical concepts on text genres and text analysis", that Luiza Guimarães-Santos refers in a 2012 article, where she proposes, based on the "theoretical presuppositions of socio-discursive interactionism presented by Bronckart", a "didactic model of a genre [that] consists of detailing the characteristics of its teachable conditions" (p. 1). And she concludes, "Through our didactic model, we want to show that the use of textual genre concepts can contribute to the implementation of the social action-oriented approach for teaching and learning the French language." (p. 10)

Sophie Moirand warned of one of the dangers of her pre-pedagogical analysis: "The first danger would be to confuse it with theoretical analyses of discourse (or textual grammars) and subordinate it to a single linguistic theory." (p. 91). For this reason, his "Grid for pre-pedagogical analysis" (pp. 86-88) explicitly drew on three different "approaches": "sociolinguistic", "linguistic" and "logical-syntactic". But when didactic transposition is merely a transposition of a theoretical model derived from a single theory (as proposed by Luiza Guimarães-Santos), and the intention is to implement it directly in the teaching-learning field (as has been very common in recent decades in French as a mother tongue), it is little more than a theoretical application (cf. above [chap. 3.3.2.3](#)). When reading proposals for didactic transposition in FFL and French as a mother tongue, I often thought of this very pertinent remark by Frank Marchand, author of an FFL textbook in 1920 (*Méthode Marchand. La famille Dupond*, Imp. J. De Mersch, 1920): "Grammar being the art of lifting the difficulties of a language, the lever must not be heavier than the burden." (quoted in [1998f-en](#), note 10 p. 5).

3.3.2.6 Rhetorical mobilization

It is to be distinguished from theoretical mobilization, which we discussed in the chapter on recursive processes ([chap. 3.3.1](#)). "Rhetorical mobilization" occurs when methodologists and didacticians cite theories in their discourse with the aim of legitimizing didactic proposals by this reference alone.

Linguistics, sociolinguistics and the "psychology of learning" (renamed "cognitive theories") have traditionally been referred to as "reference theories" in the didactics of FFL. These theories have sometimes fed into the processes of the theoretical subsystem, but they have sometimes been diverted in part towards this process of "rhetorical mobilization" (cf. the corresponding arrow in [Diagram 1](#)), their appellation of "reference theories" then taking on its full meaning. In my *Histoire des méthodologies*, I noted this phenomenon on several occasions, and I take it up again in the general conclusion of this book, using the case of French audiovisual methodology as an example:

References to MAO⁶⁷ and to the principles of American Applied Linguistics are certainly numerous in French didactic discourse between 1960 and 1975; and to this day, the history of American MAO is much better known to French didacticians than that of French MD. But such references seem to me to have been used very often as a scientific guarantee of prestige in an a posteriori rationalization of conceptions and practices largely inherited from French history: the phenomenon seems to me particularly evident, for example, in the attempt by certain French theorists to assign to the image in AVM the role played by the stimulus in behaviorist psychology, when in fact it merely systematizes

preface to the Pedagogical Guide, at address [062](#) on my website, and the examples of tasks to be found in the two complete units, nos. 5 and 7, of the textbook for senior classes.

⁶⁷ MAO = audio-lingual methodology. MD = direct methodology. AVM = audiovisual methodology.

the two main functions already assigned to images in MD, where they were intuitive procedures for explaining the lexicon or presenting the situation. (1988a, p. 210)

This is also what happened –another example– with the references that certain didacticians promoting the communicative approach made to the socioconstructivist theory of interaction as the co-construction of meaning, whereas in textbooks, and in classroom communication practices, this interaction was generally limited to simple exchanges of information. There's a good deal of rhetorical mobilization at work in D. Bucheton and É. Bautier's quote, above p. 35.

The term "rhetorical mobilization" is not at all pejorative in my mind. On the one hand, because didactic discourse cannot really demonstrate, it strives to show and convince: these theoretical references constitute arguments⁶⁸. On the other hand, the theories referred to in this way may later enter the theoretical subsystem, with the development of theoretical models that can be mobilized in teaching-learning, and then praxeological models.

This may well be the case (we must hope) for "action linguistics", which, for want of praxeological models for the moment, is mobilized in didactic discourse only rhetorically, as Jean-Jacques Richer honestly acknowledges in these lines published in 2011:

*[...] Actional linguistics, whose research program considers "speech as a language act sanctioned not only by conditions of truth, but by conditions of legitimacy and effectiveness, i.e. as an action" (Durand and Filliettaz, 2009: 18), is still in its infancy. It needs to refine its concepts, validate its hypotheses by multiplying its fields of research, and, if it can currently only provide the **action-oriented approach** with punctual data that is too fragmentary to be able to conceive of an "operational competence" (to use Roulet and Filliettaz's expression) that would articulate language and physical action and add to the other components of **communicative language competence**, at the very least, it should serve as an imperative reminder to language educators of the need to "go beyond a logocentric conception of interaction" (Filliettaz, Bronckart, 2005:8). (Richer 2011, pp. 111-112)⁶⁹.*

For the action-oriented approach, too, I myself referred, albeit even more rhetorically, to the cognitive theory of "mirror neurons", which seems to validate at the cognitive level the hypothesis of a close relationship between perception and action ([2009b-en](#), p. 21 and note 24, p. 21). We can put forward the hypothesis that the close relationship between language and action, amply documented in linguistic observations in professional environments, also exists at the cognitive level.

Reading the work of student researchers often reveals that the theories they refer to are not really integrated into their research system, but are merely used for rhetorical purposes. This phenomenon is inevitable, and massive, when their supervisor requires them to write –or when they force themselves to write– an initial 'theoretical' section devoted to an exhaustive review of the available literature, which is thus disconnected from the presentation of their research process, their research itself and its results.

⁶⁸ But these arguments still need to be convincing...

⁶⁹ Emphasis added: "action-oriented approach" and "communicative language competence" are expressions used by the authors of the *Common European Framework of Reference for Languages* (CEFR, COE 2001).

General conclusion

In this essay, I set out to develop a theorization of research processes in my discipline, using the conceptual framework of systemics, and the result is a model of the "DLC research system" in which, if they want to be active, all the players involved in this discipline are involved, consciously or unconsciously, from educational managers to classroom teachers, via curriculum authors, textbook designers, didacticians and trainers.

This system is complex –it comprises many elements linked together by many processes, and it maintains multiple relationships of different types with an environment that is also complex, as required by systems theory– which was developed precisely to account for the functioning of complex systems –and as required by the nature of DLC, which is "complex didactics" (cf. my [2003b-en](#) manifesto).

So as not to conclude this essay with ideas that are too general because they are intended for all those involved in DLC, I shall address myself solely to student researchers, *i.e.* those in the process of writing their master's thesis or doctoral dissertation, which is the audience I primarily target in most of my work, and particularly on my website www.christianpuren.com.

It is the number of inputs, as well as the number and length of processes internal to the two systems and linking the two search subsystems, that determine the quality –and therefore also the complexity...– of a DLC research:

–Linear processes (dotted arrows in [diagram 1](#)) are those with the most limited formative effectiveness: in any case, no university research should be limited to just one or other of these types of process.

–There is certainly a balance to be found –an "optimal regime", I'd be tempted to say, comparing this system to a engine– between a large number of external inputs, which enrich the research system but can hinder its internal functioning (the engine then "stalls"...), and an insufficient number of external inputs to sufficiently feed the functioning of this system (we then "run out of fuel"...). A total absence of specialized "literature review" is unacceptable in university research, but if my long experience as a mechanic in student-research repair shops is anything to go by, a large number of problems in the functioning of the research process stem from engines flooded by too massive a flow of theoretical inputs before the car has even begun to run in the field...

And let's use the metaphor one last time: as much as the mechanics of the engine, its power supply and operating mode, the important thing is to know the desired destination, and why you want to get there: the *research project* occupies the central place in all research (he is at the center or [diagram 2](#)), it is at the same time the origin, the means and the end, and it is on this that the evaluation of student-researchers' research is primarily focused. That's why it's essential, in the general introduction to a dissertation or thesis, to present its motives and motivations and aims, and to systematically repeat them in the general conclusion: I recall this principle in the chapter of my research methodology course in which I deal with the relationship between these two parts. It's chapter 6, entitled "*Boucler sa recherche: de l'introduction générale à la conclusion Générale*" ("Concluding your research: from the general introduction to the general conclusion" ([DLC-MR6](#))).

It makes sense to apply to oneself the demands one makes of others, and so I'll end by "wrapping up" myself the research I've carried out to develop this general theory of DLC research, by recalling verbatim below the goals I announced in the [General introduction](#):

The aim of this essay is to provide readers with the most comprehensive modeling possible of the DLC research system, so that they can exploit for themselves the various functions that models can perform, and which I present in detail in [chapter 1.1.3](#): the cognitive function (they will have a better overall perception of the configuration and operation of this system), the pedagogical function (they will have a better understanding of this system, and the way they personally conceive research), the heuristic function (the model will suggest new ideas) and the decision-making function (the model will give them the desire to embark on new personal or collective research).

The various functions listed above seem to me to provide my readers with a good evaluation grid for my essay, an evaluation that it's up to them alone to carry out on the basis of the "product" that this model constitutes. The interest of models lies in what they can contribute, not only once they have been produced, but also, and even more importantly, during the development process: I think I've benefited from these different functions myself when writing this essay.

Given the epistemological nature of the discipline, a theorization of DLC research can really only be a model; and a "general theory of research in DLC", as announced in the title of this in DLC essay, can only be a "global model of research in DLC, like the one proposed in [diagram 1](#). I have already quoted several times in my work the lines below from Pierre Lévy's 1990 book *Les technologies de l'intelligence. L'avenir de la pensée à l'ère informatique*⁷⁰, so relevant do they seem to me. In it, he explains why modeling is becoming essential, and not only in DLC, at the expense of theorizing as it is still conceived by many in the so-called "hard" or "exact" sciences:

In the civilization of writing, the text, the book, the theory remained, on the horizon of knowledge, possible poles of identification. Behind the critical activity, there was still a stability, a possible uniqueness of the true theory, of the right explanation. Today, it is becoming increasingly difficult for a subject to envisage even partial identification with a theory. [...] Theories, with their standard of truth and the critical activity that accompanies them, are giving way to models, with their standard of efficiency and the judgment of appropriateness that presides over their evaluation. The model is no longer laid down on paper, that inert support, but runs on a computer. In this way, models are constantly rectified and improved as simulations are carried out. [...] From now on [...] we'll be dealing with models of varying degrees of relevance, obtained and simulated more or less quickly, and increasingly independently of any horizon of truth to which we might adhere in the long term. If there are fewer and fewer contradictions, it's because the claim to truth is diminishing. We no longer criticize, we debug." (pp. 136-137)

At a time when digital innovations are exploding –in 2015, when the first version of this essay was published, for example, conversational systems based on language models were not yet available to everyone– Pierre Lévy's reflections, which date back more than thirty years, seem to me even more relevant than they were then. I invite my readers not only to apply to my model the function that B. Walliser, in his 2007 article, calls "praxeological function", by "deliberately subject[ing] it to a 'contextualization' that leads to its adaptation to certain environments and problems" (Walliser 2007, p. 9), but, if they felt this model needs to be

⁷⁰ *Intelligence technologies. The future of thinking in the computer age*. With a doctorate in economics, Pierre Lévy is also a philosopher, sociologist and researcher in information and communication sciences: the combination of these different disciplines in his "epistemological profile" makes his ideas particularly stimulating for DLC thinking.

corrected, to "debug" it, and even, if they feel it can't be, to develop their own competing model of the DLC research system.

Bibliography

Note: *The bibliography is presented in the same way as in the French version.*

ACAR Ahmet & PUREN Christian. 2024 (to be published). *The Social Action-Oriented Approach in Language Teaching: From Finalities and Objectives to Practice*. Lady Stephenson Library, Newcastle upon Tyne, NE6 2PA, UK, Cambridge Scholars Publishing.

BALLÉ Michaël. 2002. « La loi du moindre effort mental », *Sciences Humaines*, n° 128, juin, p. 36-39.

BARBIER Jean-Marie (dir.). 1996. « Introduction », p. 1-17 in: BARBIER J.-M. (dir.), *Savoirs théoriques et savoirs d'action*. Paris: PUF, 305 p.

BUCHETON Dominique, BAUTIER Élisabeth. 1996. « Interactions: co-construction du sujet et des savoirs ». *Le français aujourd'hui*, n° 113, mars 1996, p. 24-32.

CHEVALLARD Yves. 1985. *La transposition didactique: du savoir savant au savoir enseigné*. Grenoble: La Pensée Sauvage, 126 p.

COE 2001. COUNCIL OF EUROPE, *Common European Framework of Reference for Languages: learning, teaching, assessment* (CEFR), Strasbourg, Language Policy Unit, 260 p. Last edition in November 2023: <https://rm.coe.int/1680459f97>.

DABÈNE Michèle. 1972. « Le CRÉDIF en 1972 », *Le Français dans le Monde* n° 92, pp. 8-13.

DAVID Albert. 2000. « La recherche-intervention, un cadre général pour les sciences de gestion? », Actes de la Conférence Internationale de management stratégique, Montpellier, mai 2000. www.strategie-aims.com/conferences/14-ixeme-conference-de-l-aims/communications/2502-la-recherche-intervention-un-cadre-general-pour-les-sciences-de-gestion/download. (dernière consultation 10 07 2024)

DEVAUCHELLE Bruno. 2015. « Une place pour l'usage ordinaire du numérique? » Billet en date du 13 février 2015. (dernière consultation 10 07 2024) www.cafepedagogique.net/lexpresso/Pages/2015/02/13022015Article635594112260756592.aspx.

FIORINA Jean-François. 2015. « L'école 3.0 racontée en 20 tweets! » <https://blog.educpros.fr/fiorina/2015/02/26/lecole-3-0-racontee-en-20-tweets/> (dernière consultation 10 07 2024)

GALISSION Robert. 1990. « Où va la didactique du français langue étrangère? », *Études de linguistique appliquée* n° 79, juil.-sept., Paris: Didier Érudition, pp. 9-52.

GIORDAN André. 1999. « EPS interroge un didacticien », *Revue EPS* [Éducation Physique et Sportive] n° 279, octobre.

GIRARD Denis. 1972. *Linguistique appliquée et didactique des langues*. Paris: Armand Colin-Longman, 168 p.

- GUIMARÃES-SANTOS Luiza. 2012. « Perspective actionnelle et genres textuels: le modèle didactique dans l'enseignement du français langue étrangère », *Synergies Canada*, n° 5. <https://journal.lib.uoguelph.ca/index.php/synergies/article/view/1686>, 16 p. (dernière consultation 10 07 2024).
- HUBERMAN A. Michael, MILES Matthew B. 1991, *Analyse des données qualitatives*, trad. fr. Bruxelles, De Boeck-Wesmael S.A., 480 p.
- LEHMANN Denis. 1985. « La grammaire de texte: une linguistique impliquée? », *Langue française* n°1/1985, pp. 100-114. www.persee.fr/web/revues/home/prescript/article/lfr_0023-8368_1985_num_68_1_6357 (dernière consultation 10 07 2024).
- LE MOIGNE Jean-Louis. 1977. *La théorie du système général. Théorie de la modélisation*. Éd. 1994, publication 2006 « Collection « Les classiques du réseau Intelligence de la complexité » (www.mcxapc.org), 338 p. www.intelligence-complexite.org/inserts/ouvrages/0609tsqtm.pdf (dernière consultation 10 07 2024).
- 1987. « Qu'est-ce qu'un modèle? », *Confrontations psychiatriques*, numéro spécial « Les modèles expérimentaux et la clinique ». (dernière consultation 10 07 2024) <http://archive.mcxapc.org/docs/ateliers/lemoign2.pdf>.
- 1990, *La modélisation des systèmes complexes*, Paris: Dunod, 1990, 178 p.
- 2005. « Les enjeux éthiques de la didactique des langues et des cultures n'appellent-ils pas un Nouveau discours sur la méthode des études de notre temps? », *ÉLA revue de didactologie des langues-cultures et de lexiculturologie*, n° 140, oct.-déc. 2005, pp. 421-433.
- MOIRAND Sophie. 1979. *Situations d'écrit. Compréhension, production en langue étrangère*, Paris, CLE international (coll. « Didactique des langues étrangères »), 176 p. Chap. 1.5., pp. 74-91. www.christianpuren.com/bibliothèque-de-travail/056/ (avec l'aimable autorisation de l'auteure).
- 1988. *Une histoire de discours... Une analyse des discours de la revue Le Français dans le Monde, 1961-1981*. [thèse de doctorat] Paris: Hachette, 802 p.
- MORIN Edgar. 1986. *La Méthode 3. La connaissance de la connaissance*, Paris, Seuil, 256 p.
- MUCCHIELLI Alex. 2006. « Deux modèles constructivistes pour le diagnostic des communications organisationnelles », *Communication et organisation*, n° 30, 2006, pp. 12-46. <https://journals.openedition.org/communicationorganisation/3442> (dernière consultation 06/03/2020).
- POPPER Karl. 1935. *La logique de la découverte scientifique*, Paris: Payot. [1^e édition allemande 1935, 1^e édition anglaise 1959, 1^e éd. française 1973].
- PUREN Christian (All links valid until 21 07 2024)**
- Reminder:** All references of the year + letter type (e.g.: 2015a) or simple three-digit number (e.g. 023) in clickable links (e.g.: [2015a](#), [023](#)) without author specification refer here

to my own publications. Codes with "-en" at the end indicate texts in English (e.g. "2024a-en"). The others indicate French texts (e.g. "2022f").

- DLC-DR3. « La perspective didactique 1/4. Modèles, théories et paradigmes ». Cours en ligne « La didactique des langues-cultures comme domaine de recherche », Dossier n° 3. www.christianpuren.com/cours-la-dlc-comme-domaine-de-recherche/dossier-n-3-la-perspective-didactique-1-4/.
- DLC-DR4. « La perspective didactique 2/3: Objectifs et environnements ». Cours en ligne « La didactique des langues-cultures comme domaine de recherche », Dossier n° 4. www.christianpuren.com/cours-la-dlc-comme-domaine-de-recherche/dossier-n-4-la-perspective-didactique-2-4/.
- DLC-MR3. « Définir son projet de recherche ». Cours « Méthodologie de la recherche en DLC », Chapitre 3. www.christianpuren.com/cours-méthodologie-de-la-recherche-en-dlc/chapitre-3-définir-son-projet-de-recherche/.
- DLC-MR4. « Élaborer sa problématique de recherche ». Cours en ligne « Méthodologie de la recherche en didactique des langues-cultures », Chapitre 5. www.christianpuren.com/cours-méthodologie-de-la-recherche-en-dlc/chapitre-4-élaborer-sa-problématique-de-recherche/.
- DLC-MR6. « "Boucler" sa recherche (de l'introduction à la conclusion générales) ». Cours en ligne « Méthodologie de la recherche en didactique des langues-cultures », Chapitre 6. <https://www.christianpuren.com/cours-m%C3%A9thodologie-de-la-recherche-en-dlc/chapitre-6-boucler-sa-recherche/>.
- DLC-RER1. « Recherche et écriture de la recherche ». Cours en ligne « L'écriture de la recherche en didactique des langues-cultures », Chapitre 1. <https://www.christianpuren.com/cours-écriture-de-la-recherche-en-dlc/chapitre-1-recherche-et-%C3%A9criture-de-la-recherche/>.
- 002. Les trois perspectives constitutives de la didactique des langues-cultures ». <https://www.christianpuren.com/biblioth%C3%A8que-de-travail/002/>.
- 003. « Compilation de citations concernant la conception de la didactique des langues-cultures ». <https://www.christianpuren.com/biblioth%C3%A8que-de-travail/003/>.
- 004. « Le champ sémantique de "méthode" ». www.christianpuren.com/bibliothèque-de-travail/004/.
- 005. « Trois exemples de méthodes ». www.christianpuren.com/bibliothèque-de-travail/005/.
- 006. « "La mise en œuvre de la méthode active". François CLOSSET 1950 ». www.christianpuren.com/bibliothèque-de-travail/006/.
- 008. « Tableau des oppositions méthodologiques fondamentales ». www.christianpuren.com/bibliothèque-de-travail/008/.
- 010. « Les quatre procédures historiques d'enseignement-apprentissage grammatical. www.christianpuren.com/bibliothèque-de-travail/010/.
- 011. « Schéma de l'unité didactique audiovisuelle première génération ». <https://www.christianpuren.com/biblioth%C3%A8que-de-travail/011/>.
- 014. « Modélisation et modèles (B. WALLISER). www.christianpuren.com/bibliothèque-de-travail/014/.
- 015-en. "Scientific theories versus didactic models (according E. Morin and R. Rorty)". <https://www.christianpuren.com/biblioth%C3%A8que-de-travail/015-en/>.
- 016. « Évolution historique des modèles cognitifs d'enseignement-apprentissage des langues », www.christianpuren.com/bibliothèque-de-travail/016/.

- 019. « Approches culturelles disponibles en didactique des langues-cultures », <https://www.christianpuren.com/biblioth%C3%A8que-de-travail/019/>.
- 023. « Problème versus problématique ». www.christianpuren.com/biblioth%C3%A8que-de-travail/023/.
- 029. « Évolution historique des configurations didactiques (modèle) ». www.christianpuren.com/biblioth%C3%A8que-de-travail/029/.
- 030. « Le champ sémantique de l'environnement en didactique des langues-cultures », www.christianpuren.com/biblioth%C3%A8que-de-travail/030/.
- 041-en. "Didactic treatment of the authentic document in language and culture class. Task analysis model". <https://www.christianpuren.com/biblioth%C3%A8que-de-travail/041-en/>.
- 043. « L'émergence du concept de didactique des langues" en France ». www.christianpuren.com/biblioth%C3%A8que-de-travail/043/.
- 046. 'Les composantes de la complexité'. www.christianpuren.com/biblioth%C3%A8que-de-travail/046/.
- 048. « Les quatre références épistémologiques d'une didactique complexe des langues-cultures ». www.christianpuren.com/biblioth%C3%A8que-de-travail/048/.
- 056. Sophie MOIRAND, *Situations d'écrit. Compréhension, production en langue étrangère*. Paris: CLE international, 1979, 176 p. Chap. 1.5 « L'analyse pré-pédagogique des textes », pp. 74-91. www.christianpuren.com/biblioth%C3%A8que-de-travail/056/ (chapitre mis en ligne sur mon site en mars 2015 avec l'aimable autorisation de l'auteure).
- 078. « Les sept lois "scientifiques" de la didactique des langues-cultures ». <https://www.christianpuren.com/biblioth%C3%A8que-de-travail/078/>.
- 1988a. *Histoire des méthodologies de l'enseignement des langues*. 3^e éd., décembre 2012, 302 p. www.christianpuren.com/mes-travaux/1988a/.
- 1989c. « Méthode interrogative et commentaire de textes: de la perspective historique à la prospective », *Les Langues modernes* n° 2, 1989, pp. 76-92. <https://www.christianpuren.com/mes-travaux/1989c/>. Cité ici à partir du format papier original disponible sur le site Gallica de la Bibliothèque Nationale de France (BNF): <https://gallica.bnf.fr/ark:/12148/bpt6k9691038h/f3.item>.
- 1994d. « Psychopédagogie et didactique des langues. À propos d'observation formative des pratiques de classe ». *Revue Française de Pédagogie*, n° 108, juil.-août-sept., 1994, pp. 13-24. Paris: INRP. <https://www.researchgate.net/publication/251041744> or www.christianpuren.com/mes-travaux/1994d/.
- 1994e. *La didactique des langues à la croisée des méthodes. Essai sur l'éclectisme*. 3^e édition électronique www.christianpuren.com, octobre 2013. www.christianpuren.com/mes-travaux/1994e/.
- 1995a-en. "The problematic of learner-centered approach in the school context". English translation (June 2024) of "La problématique de la centration sur l'apprenant en contexte scolaire", *Études de Linguistique Appliquée* no. 100, oct.-déc. 1995, pp. 129-149. <https://www.researchgate.net/publication/381461612> or [https://www.christianpuren.com/mes-travaux/1995a-en/](http://www.christianpuren.com/mes-travaux/1995a-en/).
- 1997b. « Concepts et conceptualisation en didactique des langues: pour une épistémologie disciplinaire ». *Études de Linguistique Appliquée* n° 105, janv.-mars 1997, pp. 111-

125. Paris, Didier-Érudition. <https://www.researchgate.net/publication/39279553> or www.christianpuren.com/mes-travaux/1997b/.
- 1998c. « Didactique scolaire des langues vivantes étrangères en France et didactique française du français langue étrangère », *Études de Linguistique Appliquée* n° 111, juil.-sept. 1998, pp. 359-383. www.christianpuren.com/mes-travaux/1998c/.
- 1998f-en. "Object perspective and subject perspective in didactics of languages-cultures". <https://www.researchgate.net/publication/381957155> or <https://www.christianpuren.com/mes-travaux/1998f-en/>. English translation (July, 2024) of French original version "Perspective objet et perspective sujet en didactique des langues-cultures", *ÉLA revue de didactologie des langues-cultures* n° 109, janvier-mars 1998. Paris : Klincksieck, pp. 9-37. <http://www.aplv-languesmodernes.org/spip.php?article1169> or www.christianpuren.com/mes-travaux/1998f-en/.
- 1999h. « Comment théoriser sa pratique? (la formation des questions) », chap. 2. pp. 20-33 in: GALISSON Robert & PUREN Christian, *La formation en questions*, Paris: CLE international, 128 p. www.christianpuren.com/mes-travaux/1999h/.
- 2003b-en. "For a complex didactics of languages and cultures". www.researchgate.net/publication/353841296 or <https://www.christianpuren.com/mes-travaux/2003b-en/>. English translation (August 2021) of "Pour une didactique comparée des langues-cultures", *Études de Linguistique Appliquée* n° 129, janvier-mars 2003, pp. 121-129. <https://www.cairn.info/journal-ela-2003-1-page-121.htm> or <https://www.christianpuren.com/mes-travaux/2003b/>.
- 2006e. « Explication de textes et perspective actionnelle: la littérature entre le dire scolaire et le faire social ». <https://www.christianpuren.com/mes-travaux/2006e/>.
- 2007a. « Quelques conclusions personnelles sur les Conclusions du Conseil sur l'indicateur européen des compétences linguistiques de 2006 ». www.aplv-languesmodernes.org/spip.php?article437 ou www.christianpuren.com/mes-travaux/2007a/.
- 2009b-en. "Variations on the theme of social action in didactics of foreign languages and cultures". www.researchgate.net/publication/351194660 or <https://www.christianpuren.com/mes-travaux/2009b-en/>. English translation from "Variations sur le thème de l'agir social en didactique des langues-cultures", long version of "Conclusion-synthèse : variations sur la perspective de l'agir social en didactique des langues-cultures étrangères", pp. 154-167 in : Évelyne ROSEN (coord.), *La perspective actionnelle et l'approche par les tâches en classe de langue. Le Français dans le Monde*, numéro spécial 45 « Recherches et applications », janvier, 192 p. French long versions : <https://www.aplv-languesmodernes.org/spip.php?article1888> or <https://www.christianpuren.com/mes-travaux/2009/>.
- 2009e. « Nouvelle perspective actionnelle et (nouvelles) technologies éducatives: quelles convergences... et quelles divergences? » [Conférence donnée au Colloque Cyber-Langues 2009 à Reims le 25 août 2009]. www.christianpuren.com/mes-travaux/2009e/.
- 2009f. « La didactique des langues-cultures en France entre maturité disciplinaire et dépendances multiples », pp. 213-226 in: Véronique Braun Dahlet (coord.), *Ciências da linguagem e didática das linguas*. Actes du Colloque international « Sciences du langage et didactique des langues: 30 ans de coopération franco-brésilienne », Université de São Paulo, Brésil, 19-21 octobre 2009. Sao Paul: Humanitas/Fapesp, 2011, 392 p. www.christianpuren.com/mes-travaux/2009f/.

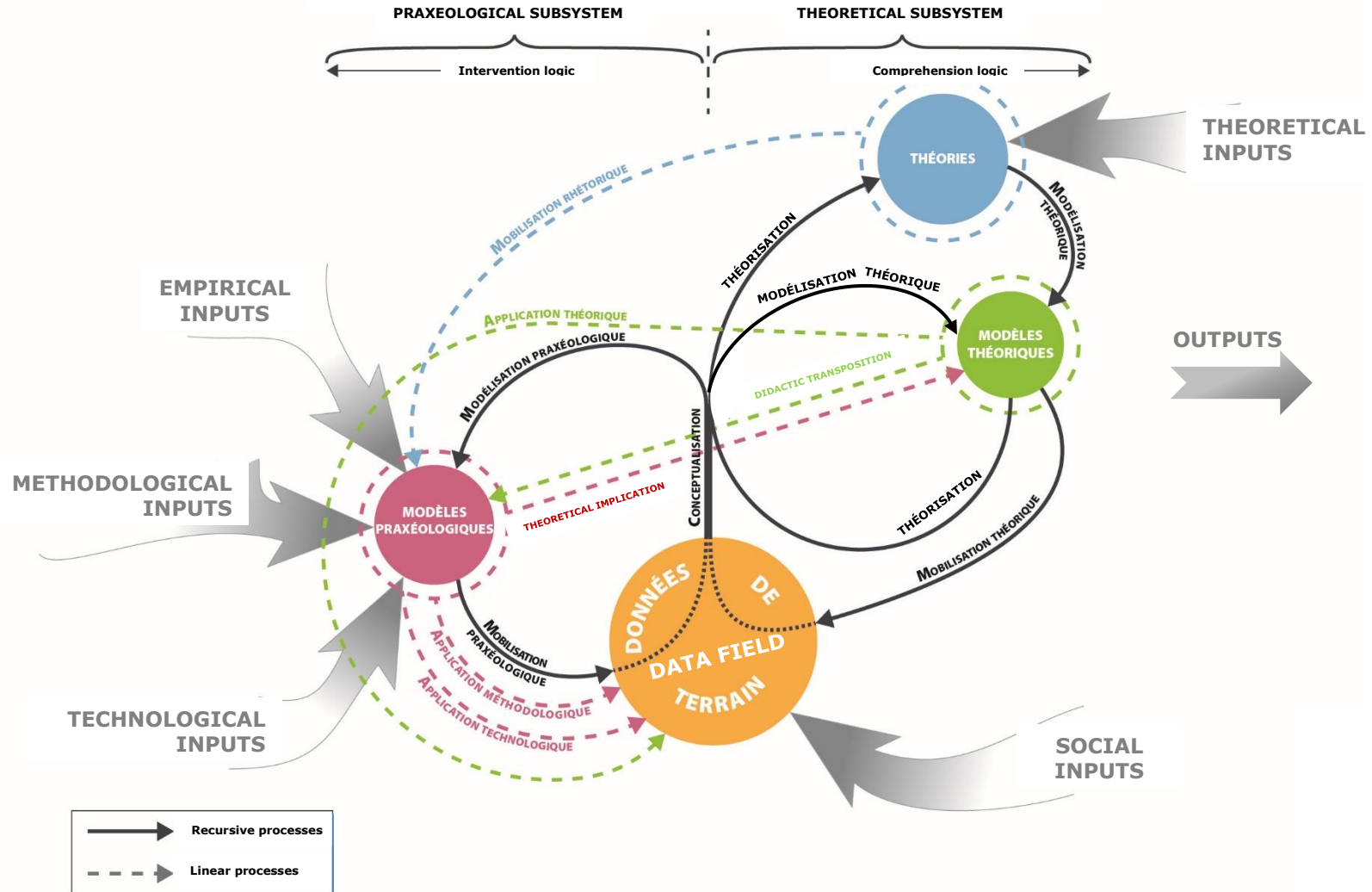
- 2011-04-05. « Les "représentations", un concept de plus en plus fumigène ». Billet de blog en date du 4 mai 2011. www.christianpuren.com/2011/05/04/les-representations-un-concept-de-plus-en-plus-fumigene/.
- 2011j. « Modèle complexe de la compétence culturelle (composantes historiques trans-, méta-, inter-, pluri-, co-culturelles): exemples de validation et d'application actuelles ». <https://www.researchgate.net/publication/364928535> or www.christianpuren.com/mes-travaux/2011j/.
- 2011k. « La "méthode", outil de base de l'analyse didactique », pp. 283-306 in: BLANCHET Philippe & CHARDENET Patrick (dir.), *Méthodes de recherche en didactique des langues et cultures*, Paris: AUF-EAC, 2011, 509 p. Sur le site de l'éditeur: <https://eac.ac/books/9782813000484>. Republication sur christianpuren.com: [https://www.christianpuren.com/mes-travaux/2011k/](http://www.christianpuren.com/mes-travaux/2011k/)
- 2012f. « Configurations didactiques, constructions méthodologiques et objets didactiques en didactique des langues-cultures: perspective historique et situation actuelle ». www.christianpuren.com/mes-travaux/2012f/. Version remaniée et augmentée d'un article paru en mai 2012 dans revue du GFEN *Dialogue* n° 144, « Éducation et politique: histoire ancienne, enjeux d'avenir » (n.p.). <https://gfen.asso.fr/wp-content/uploads/2024/02/144-supplement-en-ligne.pdf>.
- 2014a-en. "Communicative approach and social action-oriented approach, two genetically opposed and complementary methodological organisms". <https://www.researchgate.net/publication/349829905> or [https://www.christianpuren.com/mes-travaux/2014a-en/](http://www.christianpuren.com/mes-travaux/2014a-en/). English translation from "Approche communicative et perspective actionnelle, deux organismes méthodologiques génétiquement opposés... et complémentaires". [https://www.christianpuren.com/mes-travaux/2014a/](http://www.christianpuren.com/mes-travaux/2014a/).
- 2014b. « La pédagogie de projet dans la mise en œuvre de la perspective actionnelle ». Dossier de travail des journées de formation « (Se) former à la pédagogie de projet », Institut français de Fès, 8-10 avril 2013. Compilation des documents supports préparés pour les enseignants stagiaires, 39 p. www.christianpuren.com/mes-travaux/2014b/.
- 2014g. « Textes littéraires et logiques documentaires en didactique des langues-cultures ». www.christianpuren.com/mes-travaux/2014g/.
- 2016c-en. "The standard language exercisation procedure". <https://www.researchgate.net/publication/365565266> or [https://www.christianpuren.com/mes-travaux/2016c-en/](http://www.christianpuren.com/mes-travaux/2016c-en/). English translation from « La procédure standard d'exercisation en langue ». [https://www.christianpuren.com/mes-travaux/2016c/](http://www.christianpuren.com/mes-travaux/2016c/).
- 2016 01 05. « À propos des "bonnes pratiques" ». Billet de blot en date du 5 janvier 2016. www.christianpuren.com/2016/01/05/a-propos-des-bonnes-pratiques/.
- 2019b. L'outil médiation en didactique des langues-cultures: balisage notionnel et profilage conceptuel. 1^e éd. électronique décembre 2019, 122 p. www.christianpuren.com/mes-travaux/2019b/.
- 2020a. « Le système des modèles en didactique des langues-cultures : modèles pratiques, praxéologiques, théoriques, didactologiques ». www.christianpuren.com/mes-travaux/2020a/.
- 2022c-en. "Didactic and technological innovation in language and culture didactics: historical approach and current problems". <https://www.researchgate.net/publication/361930433> or [https://www.christianpuren.com/mes-travaux/2022c-en/](http://www.christianpuren.com/mes-travaux/2022c-en/). English translation from

"Innovation didactique et innovation technologique en didactique des langues-cultures : approche historique", *Recherche et pratiques pédagogiques en langues de spécialité*, Vol. 41 N°1 | 2022. <http://journals.openedition.org/apliut/9708>.

- 2022d-en. "Felix dubitatio! Uncertainty and complexity in didactics of languages and cultures". <https://www.researchgate.net/publication/361650533> or <https://www.christianpuren.com/mes-travaux/2022d-en/>. English translation from "Felix dubitatio ! Incertitude et complexité en didactique des langues-cultures", *EDL. Études en Didactique des Langues* n° 37, mai 2021, pp. 51-68. <https://www.christianpuren.com/mes-travaux/2022d/>.
- 2022f. *Modélisation, types généraux et types didactiques de modèles en didactique complexe des langues-cultures. Essai*, 44 p. www.christianpuren.com/mes-travaux/2022f/.
- 2022h-en. "Methods and types of research in didactics of languages-cultures". English version of "Mettre en œuvre ses méthodes de recherche" ("Implementing research methods"), Part 5 of online course "Méthodologie de la recherche en didactique des langues-cultures" "Methodology of research in didactics of languages-cultures". <https://www.researchgate.net/publication/365316991> or <https://www.christianpuren.com/mes-travaux/2022h-en/>.
- 2023 12 04. « La didactique des langues-cultures, ou la problématique de l'enseignement-apprentissage-usage ». Billet de blog en date du 4 décembre 2023. <https://www.christianpuren.com/2023/12/04/la-didactique-des-langues-cultures-ou-la-probl%C3%A9matique-de-l-enseignement-apprentissage-usage/>.
- 2024f-en. "Herbert Alexander Simon, a central epistemological reference point for a complex Didactics of Languages-Cultures (DLC)". <https://www.researchgate.net/publication/382046744>. or <https://www.christianpuren.com/mes-travaux/2024f/>. English translation from "Herbert Alexander Simon, une référence épistémologique centrale de la Didactique Complexe des Langues-Cultures (DLC)". <https://www.researchgate.net/publication/381003007>. or <https://www.christianpuren.com/mes-travaux/2024f/>.
- 2024g-en. "The mechanism of change, development and adaptation of the methodologies in didactics of languages-cultures: the "3M" Model (Matrix - Models - Methodology)". <https://www.researchgate.net/publication/381155045> or <https://www.christianpuren.com/mes-travaux/2024g-en/>.
- PUREN Christian, SÁNCHEZ Fátima. 2001. « L'organisation d'un parcours d'autonomie guidée en enseignement-apprentissage grammatical: comparaison entre un dispositif papier (manuel) et un dispositif informatique (site Internet) ». *Études de Linguistique Appliquée* n° 122, avril-juin, pp. 211-228. Paris: Klincksieck. www.christianpuren.com/mes-travaux/2001i/.
- RICHER Jean-Jacques. 2011. *La didactique des langues interrogée par les compétences*. Bruxelles: E.M.E. & InterCommunications, 194 p.
- RORTY Richard. 1995. *L'espoir au lieu du savoir. Introduction au pragmatisme*. Trad. fr. Paris, Albin Michel (coll. « Bibliothèque internationale de philosophie »), 158 p.
- SARREMEJANE Philippe. 2001. *Histoire des didactiques disciplinaires 1960-1995. Savoir et Formation*, Paris: L'Harmattan, 480 p.

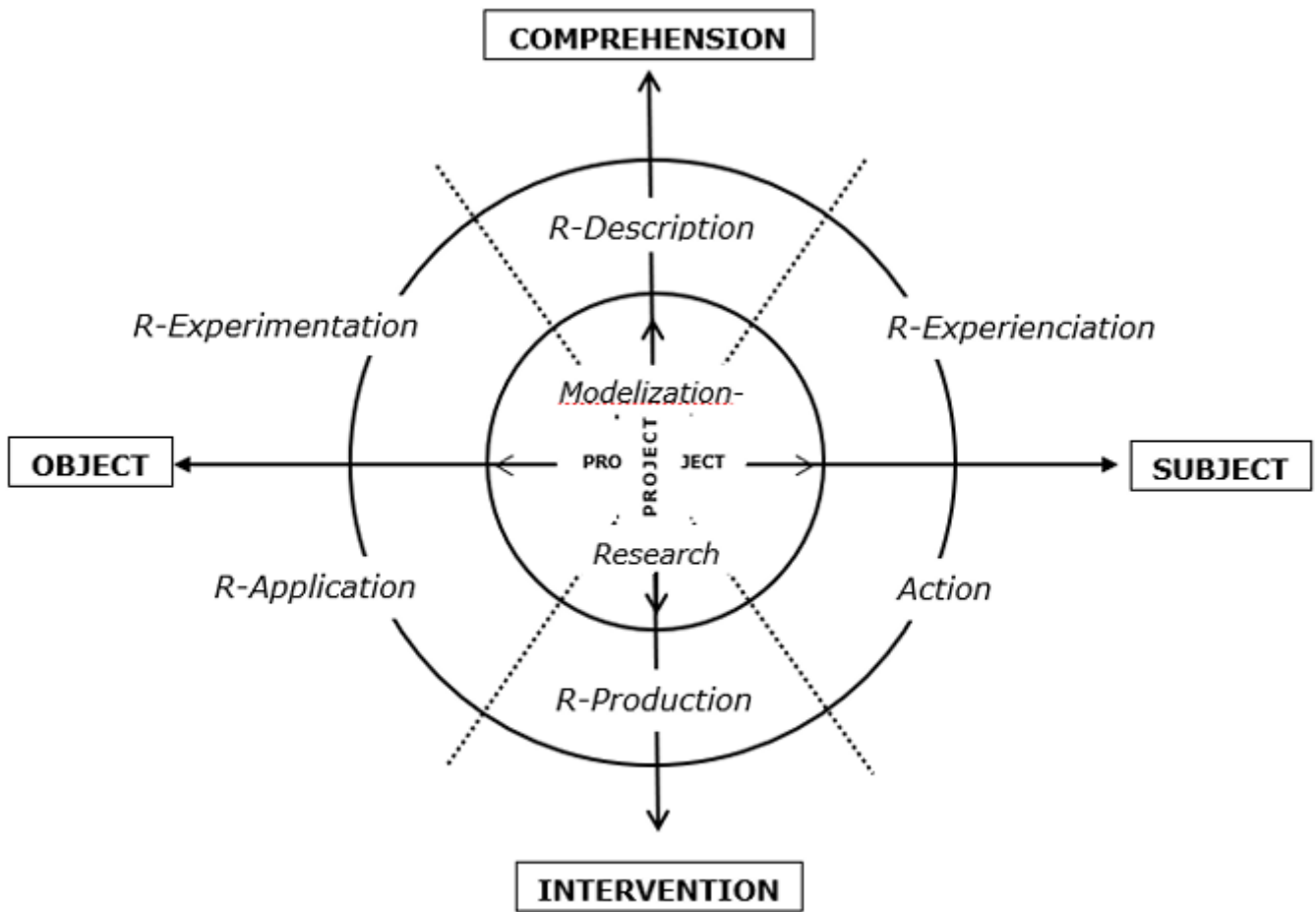
- VOGEL Klaus. 1995. *L'interlangue, la langue de l'apprenant*. Trad. française Toulouse: Presses Universitaires du Mirail, 323 p.
- SCHÖN Donald. 1983. *Le praticien réflexif. À la recherche du savoir caché dans l'agir professionnel*. Montréal, Les Éditions Logiques, 1994 [1^e éd. 1983], 418 p.
- SIMON Herbert A. 1969. *Sciences des systèmes, sciences de l'artificiel*. Traduit de l'anglais par J.-L. Lemoigne, Paris: Dunod, 1991, 230 p. Première éd. originale *The sciences of the artificial*, Cambridge: The Massachusetts Institute of Technology, 1969. Troisième éd. anglaise disponible en ligne, 1996 (dernière consultation 12 07 2024): https://monoskop.org/images/9/9c/Simon_Herbert_A_The_Sciences_of_the_Artificial_3rd_ed.pdf.
- VARENNE Franck. 2022. « Comparer les modèles à l'aide du vecteur caractéristique: fonction, nature, principe et usage des modèles », *Natures Sciences Sociétés*, volume 30, n° 1, pp. 93-102. <https://doi.org/10.1051/nss/2022014> (dernière consultation 10 07 2024).
- VOGEL Klaus. 1995. *L'interlangue, la langue de l'apprenant*,. Traduit de l'allemand par J.-M. Brohée et J.-P. Confais, Toulouse: Presses Universitaires du Mirail, 323 p.
- WALLISER Bernard. 1977. *Systèmes et modèles. Introduction critique à l'analyse des systèmes. Essai*. Paris: Seuil, 1977, 256 p.
- 2007. « Les fonctions des modèles économiques », p. 285-302 in: LEROUX Alain & LIVET Pierre (dir.), *Leçons de philosophie économique*, t. II.: *Science économique et philosophie des sciences*. Paris: Economica. www.researchgate.net/publication/242190760 (dernière consultation 10 07 2024).

Appendix 1: Diagram 1, "The general system of DLC research"



Note: Diagram partially translated into English.

Appendix 2: Diagram 2, "The different types of DLC research"



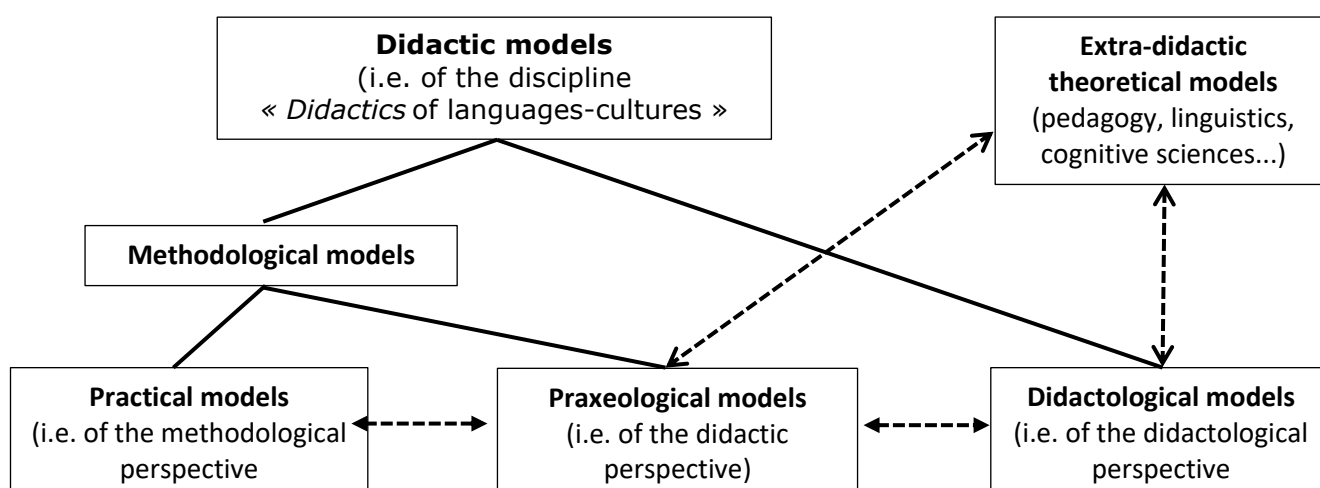
R = Research

Source: [2022h-en](#). "Methods and types of research in didactics of languages-cultures", p. 3.

Appendix 3: Diagram 3, "Typology of didactic models in DLC"

This schema (here translated into English) was presented and commented on in a French article entitled "Le système des modèles en didactique des langues-cultures : modèles pratiques, praxéologiques, théoriques, didactologiques" ("Typology of didactic models in didactics of languages-cultures: practical, praxeological, theoretical and didactological models" ([2020a](#)).

It includes the type of model belonging to the third constitutive perspective of DLC, the "didactological perspective". On the three constituent perspectives of DLC, including this didactological perspective, cf. [002](#), with a personal bibliography (references to my main articles using this typology).



_____ : semantic relations

----- : dynamic relations

List of figures and tables

- Figure 1 - *"Didactic triangle" model by J. Houssaye (1988) - p. 6.*
- Figure 2 - *Expanded diagram in DLC of J. Houssaye's "didactic triangle" (1988) - p. 7.*
- Figure 3 - *Model of the question-and-answer system according to Puren 2022f - p. 10.*
- Figure 4 - *Structural exercise system model - p. 11.*
- Figure 5 - *Complex model of the question-and-answer system (with reinputs and recursive loops) - p. 12.*
- Figure 6 - *The recursive loop conceptualization - praxeological modeling - praxeological mobilization - conceptualization - p. 22.*
- Figure 7 - *Example 1 of the relationship between theory - theoretical model - methodological model - p. 23.*
- Figure 8 - *Example 2 of the relationship between theory - theoretical model - methodological model - p. 23.*
- Figure 9 - *Methodological model corresponding to constructivist theory and its theoretical model of interlanguage - p. 24.*
- Figure 10 - *The different inputs in the teacher's methodological system - p. 25.*
- Figure 11 - *The recursive loop search - write - search - p. 34.*
- Figure 12 - *The recursive loop of conceptualizing - theoretical modeling - theoretical mobilizing - conceptualizing - p. 3534.*
- Figure 13 - *The recursive loop of theorizing - theoretical modeling - theorizing - p. 35.*
- Figure 14 - *The recursive loop of conceptualization - praxeological modeling - praxeological mobilization - conceptualization - p. 36.*
- Figure 15. - *Modeling the fundamental modes of the theory-practice relationship - p. 40.*
- Table 1 - *Comparison of model functions according to Varenne 2022 and Walliser 1977 - p. 8.*
- Table 2 - *Comparison between "inputs" according to Puren 2014h and "models" according to Puren 2024a - p. 33.*
- Table 3 - *Model of the emergence of reference disciplines in DLC subfields - p. 4141.*

This essay proposes a general theory of research in didactics of languages-cultures (DLC) in the form of an overall model of research processes in this discipline - valid for both university researchers and teachers - developed within the framework of systems theory, whose concepts are used here analogously in the field of DLC. It presents a synthesis of 50 years' research experience and 20 years' experience as a research supervisor (master's theses and doctoral dissertations) in this discipline. The overall system of DLC research proposed here comprises two sub-systems: the praxeological sub-system, with praxeological models; the theoretical sub-system, with theories and theoretical models, both of which share the processing of field data. These two subsystems each operate according to their own internal logic, but through the same recursive processes (conceptualization, modeling, mobilization), as well as several specific linear processes (theoretical, methodological and technological applications, didactic transposition, theoretical implication, rhetorical mobilization). Recursive processes (*i.e.*, provided by "recursive loops") ensure the coherence and stability of each subsystem through iteration and feedback, while the conceptualization of field data provides the interface between the two subsystems. Like any system, the global DLC research system modeled in this way receives "*inputs*" -of five types in the case of: empirical, methodological, technological, social and theoretical- and produces "*outputs*" -books, articles, exchanges between researchers at meetings, textbooks, practical information sheets, etc.- likely to provoke a change in the system. These are likely to provoke "*reinputs*" and "*new inputs*", as when exchanges between researchers or the analysis of textbooks leads to the evolution of thinking in the discipline and of intervention tools. This model was developed with DLC student-researchers in mind, in order to offer them a global vision of research activities and to help them design their own research work. It complements a model of research types already presented elsewhere and reproduced here as an appendix.