Hana Hirzalla
University of Paris
Rémy Porquier
University of Paris

Where is the cat in relation to the window?
The expression of spatial relations in French and Arabic
first and second language

Translated from French by Hana Hirzalla

Introduction

The present cross-linguistic cross-sectional[1] study analyses the expression and the development of spatial relations in French and Arabic first language (L1) and second language (L2). The productions are elicited by four successive spatial configurations which present two protagonists: animate (a cat) and inanimate (a window).

The spatial relation between these two entities relies on two variables : locative and orientational. In the two first configurations, the *cat* is 'in front of' the *window*, and in the two others, it is 'behind' the *window*. The intrinsic orientation of the *cat* changes as well : in the first and the third configuration it looks in the direction of the exterior space, and in the second and the fourth, in the direction of the interior space (see appendices where the four configurations are grouped over one page; in the procedure of data collection, each configuration is presented on one page).

The objective of this study is to compare the expression of spatial relations:
1. in French and Jordanian Arabic L1 by children of 4, 7 and 10 years; this comparison aims to explore the interplay between cognitive and linguistic factors,
2. in French L2 by Arabic adult learners and in modern standard Arabic L2 by French adult learners; in both L2, learners represent two acquisitional levels: postbasic and advanced,
3. and in the two acquisitional process: L1 and L2.

This triple comparison pays particular attention to the <u>strategies</u> that informants develop in the description of separate spatial configurations which represent in fact a referential continuity. The main point here is not how each image is described, but how the total description is organised, and both location and orientation are expressed in a task where discursive constraints are imposed in an indirect, implicit way.

Our analysis takes into consideration :
1. the interaction between conceptual complexity and language specificities
2. and the articulation of part/whole

These two parameters are investigated in close relation with the constraints imposed by the task. In the analysis of the productions in L2, the influence of L1 is also considered.

---

[1] Contrary to a 'real' longitudinal methodology which collects the productions of the same informants over time, cross-sectional methodology makes things easier and consists in collecting the productions of different informants which represent different ages (or levels). Both types are usually referred to as 'developmental'.

The results of this study can be summarised in four points:
1. A similar developmental process in French and Arabic L1
2. Different developmental sequences in L1 and in L2 despite some apparent similarities; in L1, the development implies principally the progressive comprehension of the complexity of the task, whereas in L2 it involves the linguistic means used to ensure the discursive cohesion
3. The influence of L1 on the expression of spatial reference in L2 (conceptual functional constraint)
4. The impact of the methodology (the adopted configurations and the given instruction) on the conceptualisation and the linguistic realisation of the task in both L1 and L2

1. The expression of spatial relations

Spatial location relates at least two entities: the one to be localised and the one which serves as a point of reference. A spatial relation implies essentially the notion of *region*. We will use here the terms of *Theme* (Th) for the first entity, and of *Relatum* (Rel) for the second one (terminology of ESF[2] project). Consequently, in *the cat is in front of the window*, the referent *cat* is the Th, localised in the region of the Rel *window*.

This type of location is called *static* since the Th is motionless. When the Th is in motion, spatial location can be divided into two categories (cf. Talmy, 1975, 1983, 1985):
1. *dynamic location*: the Th moves in the region of the Rel without going beyond its boundaries (for example *the cat runs in the house*),
2. *change of location*: the Th goes beyond the boundaries of the region of the Rel (for example *the cat goes out of the house*).

Since space is usually evoked by its double structure : topological and projective dimensional, two types of spatial relations are distinguished: (1) topological which concerns the inclusion/exclusion and the neighbourhood, (2) projective which is ordered by the three axes: vertical, sagittal and lateral. The expression of the two latest depends on the orientation of the speaker or the addressee, and implies an *origo* (Bühler, 1934). The origo can be the speaker or the addressee (deictic spatial relation), or the Rel itself (intrinsic spatial relation).

1.2 The expression of spatial reference in L1 and in L2

The expression of spatial reference is frequently investigated in the studies devoted to L1 or to L2 acquisition (and in those which address the two processes). In L1 acquisition, the expression of space was first analysed by Piaget. The particularity of the methodology of Piaget is that it relies on a qualitative systematic approach which considers child language in its own characteristics and manifestations without comparing it with adult language. This methodology has inspired a large number of the researches which have studied the emergence and the development of language, and was rewarding for verifying the hypothesis advanced in the second part of the last century.

---

[2] The project of European Science Foundation has studied the acquisition of second language by adult learners (cf. Perdue, 1993).

Actually, during the 1950s the idea of the essential role of *innate predispositions* in L1 acquisition, claimed by Chomsky, has changed the point of view about how language is learned, and has shown the limits of behaviourism. This new idea, interpreted in terms of *universal grammar* by Chomsky, and its confrontation with the notion of *cognitive functional basis* proposed by Piaget, has created a large controversy about the interaction between cognitive and linguistic factors.

The study of this interaction has oriented researchers towards a cross-linguistic developmental methodology. The main objective was to verify if children of different languages develop the same (or similar) concepts, or if they develop different concepts according to the language they are acquiring. As the domain of space represents the perfect coincidence between vision, cognition and linguistic expression, several studies were conceived to compare the expression of this category across different ages in different languages (cf. Slobin,1973, 1985 ; Johnston and Slobin, 1979 ; Boweman, 1985; Choi and Bowerman, 1991; Bowerman and Choi, 1994).

The results of analysing the interaction of linguistic/non linguistic factors has revived the old debate of linguistic determinism of Whorf *vs*. linguistic relativity of Boas, defended also by the theory of Piaget. The first perspective claims that concepts develop through the language (this position was followed by the researches of Bowerman 1985; Choi and Bowerman, 1991; Bowerman and Choi, 1994); the second argues that conceptual construction is closely related to the cognitive development (this position was defended by Slobin 1973, 1985 ; Johnston and Slobin 1979).

In L2 acquisition, the expression of spatial reference has been studied in order to trace the progressive construction of the *interlanguage* (cf. Selinker, 1972) by adult learners. The investigation of L2 acquisition, which has developed since the 1970s, has considerably evolved thanks to the change of the approach previously adopted. The studies of Corder (1967) and of Selinker (1972) have actually led to considering interlanguage as a system in its own right and to analysing it in a qualitative point of view. This approach has shown the limits of *errors analysis*, inspired by the *contrastive hypothesis* of Lado (1957), which is based on a systematic comparison with the norms of L2. The new point of view gives a new explanation for 'errors', and explores the productions in their cognitive/interactive dimension.

The interlanguage approach, called also *learner variety* (cf. Perdue, 1993), has developed through empirical studies, especially the ESF project which adopted a cross-linguistic longitudinal perspective. The studies that constitute this project which have analysed the expression of space (cf. for example, Carroll and Becker, 1993 ; Becker and Carroll, 1997), and others which have studied diverse domains, have come to the conclusion that (1) interlanguage is systematic in its organisation and development (2) three developmental sequences, called *learner varieties*, can be identified: *prebasic*, *basic* and *postbasic* (cf. Klein and Perdue, 1997). The evolution across these varieties is governed by an acquisitional logic which involves communicational, individual and cross-linguistic factors (3) the internal structure of the utterance and of the discourse in each acquisitional variety implies semantic and pragmatic organisational principles.

Unlike the contrastive hypothesis which attributes to L1 the origin of a mechanical transfer determined by the similarities/divergences of the structures of L1/L2, in the learner variety approach, L1 is seen as a cognitive perceptual basis. In the case of spatial reference, the anterior conceptual/linguistic spatial frame can have an impact on the expression of space in L2 especially in advanced stages. Several researches (cf. for example, Carroll and von

Stutterheim 1997 ; Carroll, et al., 2000, Lambert et al., 2003) have concluded that despite good mastery of utterance grammar, at the discourse level learners employ organisational schemas which are specific to their L1 and adapt them to formal means acquired in L2. The complexity of the acquisitional task at advanced levels was explained in terms of *conceptual re-elaboration* (Giacobbe, 1992) or *thinking for speaking* (Slobin, 1991, 1996). In this same perspective, we have analysed the phenomena of transfer in the spatial discourse produced in French L2 by Arabic learners, and shown that a 'conceptual functional' constraint represents the most determining principle in the organisation of the advanced variety (cf. Hirzalla, 2005, 2007).

2. Methodology

The four configurations proposed in this study were especially conceived by Rémy Porquier for the subject of our investigation, and present thereby a specific guided task (cf. Porquier, 2004). In general, such type of prestructured task controls and orients the productions towards the expression of the linguistic constructions that the research aims to study. In our case, the objective is to analyse the expression of spatial relations, especially on the sagittal axis. Our task consists actually in describing orally the four images which represent a referential continuity between two protagonists : a *cat* and a *window*, related by two variables: locative (the spatial position of the *cat* relative to the *window*) and orientational (the intrinsic orientation of the *cat*).

In the procedure of data collection, each informant is asked to look at the four images (presented in four pages) before giving him the instruction « where is the cat in relation to the window ? ». The time of observation should allow taking into consideration the two determinant variables and the referential continuity.

Given that the expression of space depends crucially on contextual information, our methodology is based on a context of non mutual knowledge between the speaker and the addressee, and encourages thereby informants to use locative expressions rather than deictics. With each informant, the researcher/addressee takes the four configurations out of an envelop, and insists that the informatn does not know them. He also keeps far enough away during the description/tape-recording. The problematic of the influence of shared visual context on the productions of children in L1, especially at 4 years, was regularly underlined (cf. Hickmann, 2000) and verified (cf. Hirzalla, 2005, 2008).

The informants who have described the four images are: children of 4, 7 and 10 years in French and Jordanian Arabic L1; adult French learners of modern standard Arabic L2 and adult Arabic learners of French L2. The two levels of mastery in both L2 are postbasic and advanced.

3. Informational structure of the descriptive utterance and referential process

Our instruction *Where is the cat in relation to the window* ? requires the informant explicitly to relate the two entities *cat* and *window*. Unlike a 'free' task of picture description, where the informant has the choice in what Rel can localise a Th, the instruction of this task defines in advance a perspective of spatial description.

According to the model of the *quaestio* proposed by Klein et von Stutterheim (1991) in the intention of analysing the discourse construction, the informational structure of an utterance can be divided into *topic* and *focus*. The topic is the set of alternatives already presupposed

by the instruction whereas the focus is the specification of one of these alternatives. As for the global structure of the discourse, the *quaestio* traces the development of information in one referential domain (space, entities, time, process and modality) across the utterances. In our task, as in all the tasks of spatial description, the two referential domains implied are space and entities. The development of information, called *referential movement*, can take different forms, introduction, maintaining, reintroduction, or change.

The distribution of the information across the topic and the focus represents a special case in the task of cat/window. The instruction establishes the basic schema

> Th   +   locative expression + Rel
> *The cat*   a region relative to *window*

which defines a set of possibilities. The specification of each possibility depends mainly on the locative expression used. In each utterance, a locative expression delimits a region which belongs to the entity *window* (the two possible regions are: *in front of* and *behind*). Thus, the variability does not rely on the *window* itself but on the region relative to it. Consequently, 'the cat' is the topic whereas 'where in relation to the window' is the focus. What is particular here is that the two components represent already known information as they are introduced in the instruction (the *window* is known but its region is to be specified). This point confirms that the distinction topic/focus does not coincide always with the contrast known/new information.

In a 'normal' task of picture description, the distribution of the information across the topic/focus is different. The instruction is usually 'describe the picture to someone who will listen to your description and draw the scene'. Informants who realise such task have, as we mentioned above, total freedom in relating a Th to a Rel in each utterance. Thereby, the information relative respectively to topic/focus are not already explicitly introduced in the instruction.

Besides, unlike the cat/window task, the duo topic/focus is not constant in the description of all the spatial configurations, rather it is defined in an utterance, and changes in the next

> Ex. In front of the shop there is a woman
>   Rel (topic)   Th (focus)
>   Behind her there is a tree
>   Rel (topic)   Th (focus)

This does not mean that the Rel is always introduced in topic, and the Th in focus. Actually if the informant reintroduce an already localised Th to precise its position, the Th will represent the topic, and the Rel the focus

> Ex. In front of the shop there is a woman
>   Rel (topic)   Th (focus)
>   She is   near to a tree
>   Th (topic) Rel (focus)

In the cat/window task, descriptive utterances can have different informational schemas and therefore different syntactic structures. The informant can make explicit both the topic and

the focus. To mark the referential maintenance relative to the Th *cat*, he/she can use a definite NP or an anaphoric pronoun [3]

> The cat is in front of the window
> topic   focus

> It   is   behind the window
> topic   focus

He/she can also make explicit only the information of the focus and keep implicit the expression of the topic, i.e., employ ellipsis

> ∅   behind the window
> topic   focus

But contrary to the referential maintenance of the Th which can be realised by different forms, the maintenance of the Rel can be realised only by a definite NP. Descriptive utterances such as

> The cat is in front of/behind it

> The cat is in front of/behind ∅

are not acceptable. The constraint in the first case can be explained by the fact that the Rel is inanimate. It would be possible to mark the maintenance by a pronominal process if the Rel was an animate or a human referent. In the second case, the constraint is strictly discursive. The use of the items which mark the contrast between successive configurations could allow the omission of the Rel in the two languages concerned in this study. In English, this seems to be difficult especially if the informant uses the expression *in front of* which is transitive. In French and Arabic, the expressions which encode the two relations on the sagittal axis can function transitively and intransitively.

Although the four images are separated and the instruction does not orient explicitly towards a discursive construction, referential continuity is imposed and represents the most important criterion of analysis. On the one hand, the instruction mentions explicitly the two referents *cat* and *window* that will be maintained in all the descriptive utterances (especially the *cat*, which is the main protagonist in the four images and will be maintained either explicitly or implicitly; as for the referent *window*, our analysis shows that it is not always used as Rel, the informants actually use the concept of inclusion/exclusion to localise the Th). On the other hand, the variability in the four configurations creates clearly the referential continuity in the domain of entities (the *cat* is constant in the four images), and the referential rupture in the domain of space (the region which belongs to the Rel changes).

The complexity of this task is based principally on the two variables, and not on the multiplicity of the Th or of the Rel as in the picture description. Therefore, the referential movement can be defined in function of (1) the maintenance/change of the Rel : *window* or interior/exterior space and (2) taken as a whole, the two informational components: locative (L) and orientational (O).

---

[3] Only in French. In Arabic, a referential maintenance by an anaphoric pronoun is not easily used in this type of construction.

In each utterance, the referential domain of entities which relates Th/Rel can be:

> Maintenance of Th / maintenance or change of Rel
> the cat, it, ∅   *window*   or inside/outside

As for the two informational components, they can be expressed by the following schemas:

1. In the 1st configuration: maintenance in L relative to the instruction, and introduction in O (the instruction says nothing about the intrinsic orientation of the Th).
2. In the 2nd : maintenance in L, change in O.
3. In the 3rd: change in L, change in O,
4. In the 4th : maintenance in L, change in O.

As we mentioned in the introduction, what is important in the analysis of the productions is not how each configuration is described, rather how informants construct a cohesive unity in a verbal task which imposes discursive constraints in an indirect way. The focalisation on the double constraint : locative (L) and orientational (O) will lead to tracing the distribution of the strategies across the four successive configurations.

4. Analysis of spatial location in L1 and in L2

4.1 The productions in French and Arabic L1

At 4 years, French and Arabic-speaking children produce simple utterances which express only the location of the *cat* and omit its intrinsic orientation. This descriptive strategy, which follows literally the given instruction, can be schematised as L→L→L→L (location in the four images), and does not make the distinction neither between the first and the second image, nor between the third and the fourth

> (1) FL1[4] 4 Christine 1 : il est devant   la   fenêtre
>   it is   in front of the window
>   2 : il est devant   la fenêtre
>   it is in front of   the window
> (2) AL1 4 Shatha   3 : barra   a-shwbbak
>   outside the window
>   4 : barra   a-shwbbak
>   outside the window

Although the schema L→L→L→L reflects a similar (simplified) conceptual structure elaborated at this age, the linguistic realisation of L differs in function of the specificities of the two languages. On the one hand, the simple utterances produced in both languages do not have the same syntactic structure. In French, they all begin with the anaphoric pronoun *il* (personal pronoun used to refer to the third person human/non human, animate/non animate; equivalent to *it* in English) followed by the copula and a PP. In Arabic, simple utterances can begin by a definite NP which encodes the Th followed by a PP which encodes the locative

---

[4] FL1 = French first language ; AL1 = Arabic first language. In each example the age of the informant will be added, then his name and the number of the described configuration. As for L2, F/AL2 (PB or AD) = French/Arabic second language (postbasic or advanced level) followed by the name of the information, then by the number of the described configuration.

information, or can be composed only by PP (pronominal referential maintenance is constrained, and the copula is not present in affirmative present constructions).

On the other hand, Arabic-speaking children associate the locative expression *barra* 'outside' to the Rel *a-shwbbak* 'window', this gives the equivalent of *outside the window*, used in 8/20 of the utterances that describe the third and the fourth image. This locative expression encodes the concept of exclusion and can be used transitively or intransitively. The way children use it underlines that the Th *cat* is in contact with the Rel *window*, and replaces the expression *wara* 'behind'. As for the concept of inclusion, the expression *jwwa* 'inside' can not be used, and it is not, to replace *uddam* 'in front off' since it expresses a relation of inclusion that implies a three dimensional Rel. In French, the expressions which encode the concept of inclusion/exclusion can not substitute those used in the expression of the sagittal axis. French-speaking children use only the expressions *devant/derrière* equivalents to *in front off/behind* associated to the *window*. Despite this difference, in both languages the *cat* is always localised relative to the *window*.

At 7 years, the majority of the descriptions take into consideration the two constraints of the task (in 60% in French and in 70% in Arabic). Children produce in both languages complex utterances which express the position of the referent *cat* and its intrinsic orientation. This strategy can be defined as DS (double strategy = L+O), and can be schematised as DS→DS→DS→DS.

> (3) FL1 7 Dominique 3 : il est derrière la fenêtre   et   il regarde à l'extérieur
> it is behind the window and it looks to the outside
> 4 : il est toujours derrière la fenêtre   et il   regarde à 'intérieur
> it is   still   behind the window and it looks to the inside

> (4) AL1 7 Samer   1 : ilbisse jwwa albait   btitalla   barra
> the cat inside the house looks   outside
> 2 : ilbisse lissa   jwwa   btitalla la   jwwa
> the cat still   inside   looks   to inside

Although this schema predominates, L→L→L→L is still present in 20% in both languages. As for the other descriptions, DS→L→DS→DS represents 20% in French, and DS→DS→L→L 10% in Arabic.

In the two latest schemas, L is used once or twice in a set of four, but its position is arbitrary. It occurs actually in the second, third or the fourth image. These three configurations are the moments of the locative or the orientational change or both. By using L, the intrinsic orientation of the *cat* is not expressed.

As shown in examples 3 and 4, children mark the referential continuity; in other examples, they use, but less frequently, some adverbs of contrast. In French, *toujours* 'still' is attested in 13 utterances, and *mais* 'but' in 6. In Arabic, *lissa* 'still' is used in 12 utterances, and *bass* 'but' in 8.

The use of such items is determined by the schema of strategies. The equivalent to *still* and the equivalent to *but* appear always in the second and the fourth utterance in all the attested the schemas. In L→L→L→L, only the equivalent of *still* is employed since an utterance expresses only the position of the Th (see examples 5 and 6)

(5) FL1 7 Jean François 1: il est devant   la fenêtre
                                  it is in front of the window
                          2: il est <u>toujours</u> devant   la fenêtre
                              it is <u>still</u>   in front of the window

(6) AL1 7 Maha   3 : wara   a-shwbbak
                            behind the window
                        4: <u>lissa</u> wara   a-shwbbak
                            <u>still</u> behind the window

Furthermore, the two types of referential operations do not appear together in the same
utterance; children in both languages focalise either on the continuity or on the change in
each configuration, but never on the two aspects (see examples 7-10 which make part of
DS→DS→DS→DS schema)

(7) FL1 7 Florence 3: il est derrière la fenêtre   et   il regarde à   l'extérieur
                        it is behind the window and it looks   towards the outside
                    4: il est <u>toujours</u> derrière la fenêtre   il regarde à   l'intérieur
                        it is <u>still</u>   behind   the window   it looks toward the inside

(8) FL1 7 Stephanie 1: il est à l'intérieur et   regarde à   l'extérieur
                        it is in the inside and looks towards the outside
                      2: il est à l'intérieur <u>mais</u> il regarde à l'intérieur
                        it is in the inside <u>but</u> it looks towards the inside

(9) AL1 7 Alia 3: wara a-shwbbak btitalla barra
                    behind the window looks outside
                4: <u>lissa</u> wara a-shwbbak btittalla jwwa
                    <u>still</u> behind the window looks inside

(10) AL1 7 Mohammad 1: ilbisse uddam a-shwbbak btittalla barra
                            the cat in front of the window looks outside
                        2: uddam   a-shwbbak   <u>bass</u> btittalla jwwa
                          in front of the window <u>but</u>   looks   inside

The relation between descriptive strategy and the linguistic realisation of referential
continuity/change in the productions in both languages is summarised in the two following
tables. In order to make more salient the distribution of the items which express these two
operations for English readers, we present their translation equivalents in English; real items
attested in the productions are added bellow the table (this will be the case in all the tables
which relate descriptive strategy to linguistic realisation of the referential continuity/change,
namely tables1, 2, 5, 6, 9, 10, 11 and 12). On the other hand, DS (double strategy) is analysed
in its two components = L (location) and O (orientation).

Table 1 Referential continuity/change in the descriptive schemas of children of
**   7 years in French L1**

Schemas	Referential continuity/change
DS→DS→DS→DS	L+ O→ still L+ O → L+ O → L + but O
	L+ O →L+ but O → L+ O → still L+ O

L→L→L→L	L → still L → L → still L
DS→L→DS→DS	L + O → still L → L + O → still L + O

(In the productions, the attested items are *toujours* which is the translation
equivalent to *still*; *mais* equivalent to *but*)

**Table 2 Referential continuity/change in the descriptive schemas of children of
7 years in Arabic L1**

Schemas	Referential continuity/change
DS→DS→DS→DS	L+ O→ still L+ O → L+ O → L + but O
	L+ O →L+ but O → L+ O → still L+ O
L→L→L→L	L → still L → L → still L
DS→DS→L→L	L+O → still L + O → L → L

(In the productions, *lissa* is equivalent to *still*; *but* to *bass*)

Unlike the productions at 4 years which adopt exclusively the *window* as Rel, the concept of inclusion/exclusion is encoded in the productions at 7 years. This can be explained by the adopted strategies. The expression of the intrinsic orientation of the *cat* is obligatorily realised relative to the interior/exterior space, and not to the *window* (unless if the informant produces an utterance like *its back is against the window* to stress the frontal orientation of the *cat*).

However, the inclusion/exclusion concept is not reserved only to the description of the orientation of the *cat*, it intervenes also in the description of its location. The schemas of strategy show that in French the location is expressed in all the utterances since L represents 10/40 utterances and DS (L+O) 30/40.

The following two tables present the relation strategy/Rel in French and in Arabic

**Table 3 Strategy/Rel in the descriptions of French-speaking
children of 7 years**

Strategy	L	O	DS (L+O)	
Number	10/40		30/40	
			L = 30/40	O= 30/40
Rel	Window 6/10		Window 14/30	
	Int./ext. space 10/40		Int./ext. space 16/30	Int./ext. space 30/30

In Arabic also 10/40 represent the strategy L, and 30/40 the DS (L+O)

**Table 4 Strategy/Rel in the descriptions of Arabic-speaking
children of 7 years**

Strategy	L	O	DS (L+O)	
Number	10/40		30/40	
			L = 30/40	O= 30/40
Rel	Window 8/10 Int./ext. space 10/40		Window 10/30 Int./ext. space 20/30	Int./ext. space 30/30

By using the DS in the majority of their descriptions, children of 7 years produce complex utterances. As we already mentioned, they focalise on the referential continuity by using *toujours/lissa* 'still', and less frequently on the contrast. French-speaking children begin almost always their utterances by *il* (it) as shown in the examples 5, 8 and 8 above; Arabic-speaking use a definite NP to refer to the *cat* (example 10), and more frequently keep the referent implicit (examples 6 and 9).

At 10 years, the schema DS→DS→DS→DS represents 40% of the descriptions in French and in Arabic, but the effective evolution is obvious in two specific aspects. Firstly, the descriptive strategy which expresses only the locative information (L) plays a major role in marking the referential continuity, and consequently the discursive cohesion. At this age actually, in French as in Arabic, 60% of the descriptions are organised by two couples of utterance. In the majority of cases, the first utterance of a duo contains the locative information, and the second, both locative and orientational. This schema takes the distribution L→DS→L→DS (40% in French, 50% in Arabic)

> (11) FL1 10 Ludovic 3 : il est <u>derrière la fenêtre</u>
>   it is   behind the window
>   4 : <u>toujours derrière la fenêtre</u> <u>mais il regarde vers l'intérieur</u>
>   still   behind the window but it looks to the inside
> (12) AL1 10 Lyan 3 : <u>aade   barra</u>
>   sitting   outside
>   4 : <u>aade   barra</u>   wa   <u>btittalla   labarra</u>
>   sitting   outside and   looks   toward the outside

Less frequently, the first utterance of a duo contains the DS and the second, the orientational information (O); this organisation gives the schema DS→O→DS→O (20% in French, 10% in Arabic). Therefore, a minimal utterance that represents L or O strategy is integrated in a complex complementary structure which describes a pair of configurations, and builds in this way a strong cohesive relation with the precedent or the next.

In one description in Arabic, organised episodes become more interdependent. In the next two utterances, the second can be interpreted only in relation with the precedent

> (13) AL1 10 Samar 1 : ilbisse   jwwa
>   the cat inside
>   2 : <u>nafs   ilishi</u>   wa   btittalla lajwwa
>   same   the thing   and   looks   to the inside

The other criterion of evolution at 10 years is that children use an *explicit deictic perspective* (cf. Hill, 1991) in 6 utterances in French and in 7 utterances in Arabic. They mark in this way their own virtual position relatively to the spatial configurations under description. This perspective establishes a triple spatial relation: Th, Rel and the speaker as observer.

> (14) FL1 10 Marie 4 : il est toujours l'extérieur mais <u>il regarde vers moi</u>
>   it is   still   in the outside but it looks towards me

> (15) AL1 10 Fadi 2 : ilbisse   jwwa   <u>btittalla   alena</u>
>   the cat   inside   looks   towards us

In comparison with the descriptions produced at 7 years, O strategy (orientation) represents two particularities. As we already mentioned, the expression of the intrinsic orientation is always inserted in the DS at 7 years; there is no utterance which contains only this information. At 10 years, O can be integrated in DS, but it also makes part of an organised episode in the schema DS→O→DS→O at 10 years.

The other difference concerns the way this strategy is realised. At 7 years, the intrinsic orientation of the Th *cat* is expressed always by where it looks (for example *the cat is inside and it looks outside*). At 10 years, the orientation is expressed by this strategy, but in 3 utterances in French which represent the DS, children describe the frontal direction of the *cat* relative to the *window* (they produce *il est dos à la fenêtre* for which the translation equivalent is *its back is against the window* which means implicitly that it looks towards the interior space).

Furthermore, in comparison with the productions at 7 years, the number of the items which express the referential continuity diminishes at 10 years. *Toujours/lissa* 'still' is registered only 5 times in French and 6 times in Arabic, *mais/bass* 'but' is attested in 6 utterances in French and in 6 in Arabic. Children use in addition *maintenant/halla* 'now' to mark the contrast in 10 utterances in French and in 11 in Arabic.

This quantitative and qualitative difference can be explained by the way children realise the task. The strategy of organised episodes does not determine only the number of the items which intervene in building the discursive unity, but also their distribution in the utterances.

The diminishing of the number of *toujours/lissa* 'still' is motivated by the schemas L→DS→L→DS and DS→O→DS→O. This adverb appears in the second and the fourth utterance which represents the DS, and can be associated to *mais/bass* 'but' as in examples 11 above, and 16 and 19 below. It can also be replaced by *maintenant/halla* 'now' which can be associated to *mais/bass* 'but' as in the example 17 which represents the schema L→DS→L→DS; *maintenant/halla* can be used alone in the second or the fourth utterance which makes part of the schema DS→O→DS→O (examples 18 and 20 below).

    (16) FL1 10 Line 1: il est à l'intérieur   et   il regarde à   l'extérieur
                 it is in the inside and it looks towards the outside
              2: il est toujours à l'intérieur mais il regarde à l'intérieur
                 it is   still   in the inside but   it looks   towards the inside

    (17) FL1 10 Mathilde 3: il est derrière la fenêtre
                   it is   behind the window
              4: il est derrière la fenêtre   mais maintenant il regarde à l'intérieur
                it is behind the window but   now   it looks towards the inside

    (18) FL1 10 Thomas 1: il est à l'intérieur et il   regarde à l'extérieur
                 it is in the inside and it looks towards the outside
            2: maintenant il regarde   à l'intérieur
               now   it looks   towards the inside

(19) AL1 10 Salim 3: wara a-shwbbak btittalla   labarra
　　　　　　　　　　derrière la fenêtre looks towards the outside
　　　　　　　4: lissa wara a-shwbbak bass btittalla lajwwa
　　　　　　　　　　still behind the window but looks   towards the inside

(20) AL1 10 Maryam 1: aade jwwa btittalla jwwa
　　　　　　　　　　sitting inside looks inside
　　　　　　　2: halla btittalla barra
　　　　　　　　　now   looks outside

The two following tables summarise the distribution of the items which ensure referential continuity and change across the different strategies in French and in Arabic

Table 5 Referential continuity/change in the descriptive schemas of children of 10 years in French L1

Schema	Referential continuity/change
L→DS→L→DS	L → still L + but(now) O → L → now L + but O
DS→O→DS→O	L + O → now O → L + O → now O
DS→DS→DS→DS	L+ O → still/now L + but O → L + O → still/now L + but O

(still = *toujours*, but = *mais* and now = *maintenant* in the productions)

Table 6 Referential continuity/change in the descriptive schemas of children of 10 years in Arabic L1

Schema	Referential continuity/change
L→DS→L→DS	L → still L + but O → L → now L + but O
DS→O→DS→O	L + O → now O → L + O → now O
DS→DS→DS→DS	L+ O → still L + but O → L+ O → still/now L + but/now O

(still = *lissa*, but = *bass* and now = *halla* in the productions)

As shown in these both tables and in the examples 18 and 20, the use of *maintenant/halla* 'now' in the schema DS→O→DS→O ensures an implicit maintenance to L by expressing the change in O. This strategy relies mainly on the referential change. In other words, when the informant produces *now it looks outside*, he expresses two types of information: explicitly, the change relative to the precedent image (in the precedent image *it looks inside*), and implicitly that the location is still the same.

As in the descriptions at 7 years, the inclusion/exclusion concept is not only used in describing the orientation of the *cat*, it serves also in the location. The next two tables relate the type of Rel to the adopted strategy in French and in Arabic

Table 7 Strategy/Rel in the descriptions of French-speaking children of 10 years

Strategy	L	O	DS (L+O)	
Number	8/40	4/40	28/40	
			L = 28/40	O= 28/40

14

Rel	Window 2/8 Int./ext. space 6/8	Int./ext. space 4/4	Window 10/28 Int./ext. space 18/28	Window 3/28 Int./ext. space 19/28 Deictic pers. 6/28

Table 8 Strategy/Rel in the descriptions of French-speaking children at 10 years

Strategy	L	O	DS (L+O)	
Number	10/40	2/40	28/40	
			L = 28/40	O= 28/40
Rel	Window 4/10 Int./ext. space 6/10	Int./ext. space 2/2	Window 10/28 Int./ext. space 18/28	Int./ext. space 28/28 Deictic pers. 7/28

As in all the productions, utterance structure is constrained by language specificities. In addition to referential maintenance that differs in the two concerned languages, Arabic children of 10 years produce regularly the active participle equivalent to *sitting* in the head of their utterances.

4.2 The productions in French and Arabic L2

4.2.1 French L2

At postbasic level, the descriptions are equally divided between organised episodes which take the schema: DS→O→DS→O (50%) and the double strategy employed in describing the four images : DS→DS→DS→DS (50%). At advanced level, DS→DS→DS→DS is attested in 30% of the totality; as for organised episodes, they have the two distributions: DS→O→DS→O (40%) and L→DS→L→DS (30%).

Although organised episodes are present in both levels, they take two distributions in the productions of advanced learners, and only one distribution at postbasic level. However, what is more important is the way learners of these two levels build their organised episodes, and consequently mark the discursive cohesion.

Postbasic learners employ the expressions (*in the) second/third/fourth picture* in the head of 19 utterances which describe the second, third and the fourth picture, but never the first (see examples 21 and 22). In the description of the second and the fourth configuration, these expressions are preceded by *mais* 'but' 12 times, used to express the change of orientation. The temporal adverb *puis* 'then' occurs 6 times in the third or the fourth utterance (examples 23 and 24)

(21) FL2 PB Walid 3 : troisième photo   derrière   la fenêtre   regarde extérieur
                        third   picture   behind   the window   looks   outside
                4 : mais quatrième photo regarde intérieur
                     but fourth   picture looks   inside

(22) FL2 PB Rania 1 : devant la fenêtre   regarde à l'extérieur
                      in front of the window   looks towards the outside
                2 : dans la deuxième photo regarde à   l'intérieur
                    in the second picture   looks towards the inside

(23) FL2 PB Randa 1 : devant   la fenêtre   regarde à l'extérieur
                       in front of the window looks to the outside
                2 : puis regarde à l'intérieur
                    then looks to the inside

(24) FL2 PB Fayez 3: puis derrière la fenêtre   regarde à l'extérieur
                     then behind the window looks to the outside
                4: mais quatrième photo regarde à l'intérieur
                   but   fourth   picture looks to the inside

Advanced learners mark also systematically the referential continuity/contrast, but use other items. In their descriptions, *maintenant* 'now' is counted 9 times, *mais* 'but' 8 times, *toujours* 'still' 10 times and *ici* 'here' 6 times. In the schema DS→DS→DS→DS, *toujours* (now) is almost always associated to *mais* 'but' especially in the second and the fourth utterance (example 25). In the schema DS→O→DS→O, learners use frequently *maintenant* 'now' or *ici* 'here' in the second, third and fourth utterance (examples 26 and 27). In some utterances, these adverbs appear with *mais* 'but' as in the example 27 bellow

(25) FL2 AD Wafa   1 : à l'intérieur le regard vers   l'extérieur
                          inside   the look toward the outside
                2 : toujours à l'intérieur mais le   regard vers   l'intérieur
                     still   in the inside but the look towards   the inside

(26) FL2 AD Sami 1 : à l'intérieur
                      in the inside
                2 : maintenant à l'intérieur et regarde   dedans
                     now   in the inside and looks   inside

(27) FL2 AD Sabal 3 : maintenant à   l'extérieur
                       now   in the exterior
                4 : toujours à l'extérieur   mais ici il   regarde à l'intérieur
                     still   in the exterior but now it looks to the interior

What is particular in the descriptions is that learners of both levels make explicit also the relation between the second and the third configuration. This point is not attested in the organised episodes produced at 10 years in French and Arabic L1. Children relate actually the first to the second picture, and the third to the fourth, but never these two sets. Adult learners, on the contrary, do not divide the four images into two sets, but consider them as a whole. Consequently, in the head of the third utterance, postbasic learners use (*dans la)/mais*

troisième photo '(in the)/but third picture' or *puis* 'then'; advanced learners use *maintenant* 'now' or *ici* 'here'.

Another similarity between the two acquisitional levels concerns the adopted perspective of spatial description. In 5 utterances of postbasic level and in 4 of advanced, learners establish, as the children of 10 years in L1, an explicit deictic perspective

      (28) FL2 PB Nahla 2 : mais deuxième photo <u>regarde à moi</u>
                      but   second picture looks at me
      (29) FL2 AD Samar 4 : il est à l'extérieur mais il <u>regarde vers nous</u>
                      it is in the exterior but it   looks towards us

The distribution of the adverbs of continuity/change are distributed across the descriptive strategy as follow

Table 9 Referential continuity/change in the descriptive schemas of postbasic
learners in French L2

Schema	Referential continuity/change
DS→DS→DS→DS	L+O → (in the)2nd picture L+ (but)O → (in the) 3rd picture/then L+O → (in the) 4th picture L + but O
DS→O→DS→O	L+O → (in the) 2nd picture L+ (but)O → (in the) 3rd picture/then L+O → (in the) 4th picture L + but O

((in the) 2nd /3rd /4th picture = (*dans le*) 2ème /3ème /4ème photo, but = *mais*, and then = *puis* in the productions)

Table 10 Referential continuity/change in the descriptive schemas of advanced
learners in French L2

Schema	Referential continuity/change
DS→DS→DS→DS	L+O→still L + but O→ now L → still L + but O
DS→O→DS→O	L+O → now/here O → now/here L + O → now/here O
L→DS→L→DS	L + still L+ but O → here/now L + still L + but O

(in the productions, still = *toujours*, but = *mais*, now = *maintenant*, and here = *ici*)

As for the type of Rel, both groups localise frequently the *cat* relative to the interior/exterior space. The next table relates the type of Rel to the adopted strategy

Table11 Strategy/Rel in the descriptions of Arabic learners
of French L2

Postbasic	L	O	DS (L+O)	
Number		10/40	30/40	
			L = 30/40	O= 30/40
Rel			Window 8/30	
		Int./ext. space 10/10	Int./ext. space 22/30	Int./ext. space 25/30
				Deictic pers. 5/30
Advanced	**L**	**O**	**DS (L+O)**	
Number	6/40	8/40	26/40	

			L= 26	O = 26
Rel	Window 3/6		Window 10/26	Window 6/26
	Int./ext. space 3/6	Int./ext. space 8/8	Int./ext. 16/26	Int./ext. space 16/26
				Deictic pers. 4/26

Another important difference between the productions of the two groups concerns the way learners make explicit the orientational information. As shown in the last column of the table, orientational information at postbasic level is always expressed by where the *cat* looks, and consequently in function of the interior/exterior space (example 30); at advanced level, it is expressed frequently in the same way (example 31), but in 6 utterances by describing the frontal orientation relative to the *window* (example 32)

> (30) FL2 PB Suha 2 : le chat devant   la fenêtre   et le   regard vers l'extérieur
>   the cat in front of the window and the look towards outside

> (31) FL2 AD Sana 3 : maintenant à l'intérieur mais il regarde à l'intérieur
>   now   at the interior and it looks towards the inside

> (32) FL2 AD Nahel 2 : toujours il est à l'intérieur son dos   vers   la fenêtre
>   still   it is   inside   its back against the window

As we already mentioned, learners mark explicitly the relation between the four configurations. When learners of postbasic level produce the schema DS → DS → DS → DS, their complex utterances begin by the equivalent of *(in the) second/third/fourth*, frequently associated to *mais* 'but', or by *puis* 'then'. These expressions occur also in the organised episodes which take the schema DS → O → DS → O (a simple utterance here is integrated in the previous).

At advanced level, a complex utterance which describes the second, third or the fourth image in the schema DS → DS → DS → DS begins with *toujours* 'still' and contains *mais* 'but'. A third utterance of this schema can begin by *maintenant* 'now'. In organised episodes, simple utterances are integrated either in the previous in the schema DS→O→DS→O, and begins by *ici* 'here' or *maintenant* 'now', or in the next in the schema L→DS→L→DS; the third utterance of this schema begins also by *ici* 'here' or *maintenant* 'now'.

The impact of Arabic L1 appears in utterance structure and in locative expressions. Referential maintenance follows actually the constraints imposed in Arabic. It is realised in 75% of the productions at postbasic level by a definite NP (*the cat*) or by an implicit maintenance. At advanced level, these two anaphoric means are attested only in 35% of the utterances; learners frequently use the pronoun equivalent to *it* to refer to the *cat* in 65%.

On the other hand, in the second clause which represents the orientational information of a complex utterance (DS), postbasic learners express in 80% of their productions the subject of the verb (in Arabic, it is encoded in the verbal morphology). This type of functional transfer is attested in only 22.5% of the utterances at advanced level.

As for the referential organisation of locative expressions: transitive vs. intransitive, the influence of Arabic L1 takes the form of idiosyncratic PP, especially in the expression of inclusion/exclusion concept. In the examples 33, 34 and 35 below, the expressions *dehors* 'outside' and *dedans* 'inside' are used transitively. In French, they are intransitive.

> (33) FL1 PB Nasser 3 : troisième photo derrière la fenêtre et regarde <u>dehors de la maison</u>
> third   picture   behind the window and looks outside of the house

> (34) FLE PB Omar 2: puis devant   la fenêtre et regarde <u>dedans la maison</u>
> then in front of the window and looks inside the house

> (35) FL1 AD Layla 4 : il est à l'extérieur et il regarde <u>dedans la maison</u>
> it is at the outside and it looks inside the house

At postbasic level, the transitive use of these expressions is counted 10 times; at advanced level, learners still employ transitively these expressions in 8 utterances.

4.2.2 Arabic L2

Postbasic and advanced learners of Arabic L2 adopt both organised episodes and continuous DS in their descriptions. At postbasic level, organised episodes are either DS-O-DS-O (40%) or L-DS-L-DS (20%); 40% of the productions represent the schema DS-DS-DS-DS. At advanced level, DS-DS-DS-DS is attested in 30%. Organised episodes are represented also by the two distributions: DS-O-DS-O (30%) or
L-DS-L-DS (40%).

In both acquisitionnal levels, learners use systematically the items which express the continuity/contrast to relate successive configurations. At postbasic level, *alaan* 'now' is registered 12 times, *aidan* 'also' 4 times, *laken* 'but' 7 times, and *huna* 'here' 6 times.

These items appear in the second, third and fourth utterance according to some constraints. In all the schemas, the third utterance begins by either *alaan* 'now' or *huna* 'here' since these adverbs mark a total rupture (locative and orientational) with the precedent configuration (example 36); in some cases, the third utterance contains also *laken* 'but' if the strategy is DS (example 37).

In DS→DS→DS→DS and L→DS→L→DS schemas, *aidan* 'also) and *laken* 'but) are used almost always together in the description of the second or the fourth configuration (example 38 and 39).

> (36) AL2 PB Johnny 3: <u>hwna</u> hwa khalf alnaf<u>i</u>da   huwa yan<u>d</u>wr alkharej
> here   it   behind the window it looks   outside

> (37) AL2 PB Daniel 3 : <u>alaan</u> hwa fi alkharej laken hwa yan<u>d</u>wr   kharej
> now   it   outside   but   it   looks   outside

> 4 : <u>alaan</u> hwa yan<u>d</u>wr dajkel
> now it   looks   inside

(38) AL2 PB Bernadette 3 : <u>hwna</u> huwa fi alkharej   wa yan<u>d</u>or   ila   kharej
                                   here it   in the exterior and looks towards exterior
                      4 : <u>aidan</u> fi alkharej   <u>laken</u> yan<u>d</u>wr ila aldakhel
                             also in the exterior but   looks towards the inside

(39) AL2 PB Anne 1 : hwa amam alnafi<u>d</u>a
                          it   in front of the window
                    2 : <u>aidan</u> amam   alnafi<u>d</u>a   <u>laken</u> yan<u>d</u>wr ila   aldakhel
                       also   in front of the window   but looks towards the inside

As shown in the latest example which represents the schema L→DS→L→DS, the second and the fourth utterance can contain both *aidan* 'also' which ensures the referential maintenance in the domain of location, and *laken* 'but' which occurs in the head of the second clause and serves in marking the contrast in the domain of the orientation. In other cases belonging to the same schema, only *laken* 'but' is used as in the next example

(40) AL2 PB Marie 1 : hwa amam   alnafi<u>d</u>a
                         it   in front of the window
                  2: hwa amam alnafi<u>d</u>a   <u>laken</u> hwa yan<u>d</u>wr ila dajhel
                  it   in front of the window but   it   looks   towards inside

When *laken* 'but' is used alone, it marks implicitly the relation with the precedent utterance in the domain of orientation. It underlines that the direction where the cat looks now is not the same in the precedent configuration.

On the other hand, the third utterance of the schema DS→O→DS→O can contain both *alaan* 'now' and *laken* 'but' as in the example 37 above and the following example

(41) AL2 PB Patrice 2 : hwna hwa yan<u>d</u>wr dakhel
                         here   it   looks   outside
                  3 : <u>alaan</u> hwa fi alkharej <u>laken</u> hwa yan<u>d</u>wr ila   alkharej
                      now it   in the inside but   it   looks   towards the outside

In the third utterance which represents the DS, the location, kept implicit in the second utterance (O), is made explicit thanks to *alaan* 'now'. This adverb stress that contrary to the precedent configuration, the *cat* is now outside (it was not before). As for *laken* 'but', it marks explicitly the change of orientation relative to the second utterance.

At advanced level, the same items are attested and distributed according to the same constraints: *alaan* 'now' appears 9 times, *aidan* 'also' 5 times, *laken* 'but' 5 times and *huna* 'here' in 8 utterances. In the second, third or fourth utterance of the schema DS→O→DS→O, *alaan* 'now' is used (examples 42 and 43); *laken* 'but' appears in the second or the fourth utterance which make part of the schemas DS→DS→DS→DS or L→DS→L→DS (example 44). In their third utterances, learners use frequently *huna* 'here' to stress the change of location relative to the precedent utterance. The contrast can also be expressed by *alaan* 'now'/*aidan* 'still' associated to *laken* 'but' in the second or the fourth utterance of the schema L→DS→L→DS; the use of *laken* 'but' ensures an implicit relation in the domain of the orientation with the precedent utterance (example 45)

(42) AL2 AD Evelyne 1 : alkitta   amam   alnafi<u>d</u>a yan<u>d</u>wr alkharej
                        the cat in front of the window looks the outside
                    2 : alaan yan<u>d</u>wr ila   aldakhel
                        now looks towards the inside

(43) AL2 AD Laure 3 : alaan   alkitta khalf   alnafi<u>d</u>a   wa yan<u>d</u>wr ila kharej
                        now   the cat behind the window and looks   towards outside
                    4 : alaan yan<u>d</u>wr ila   dakhel
                        now looks   towards inside

(44) AL2 AD Philippe 1: hwa fi aldakhel
                        it   in the inside
                    2: fi dakhel   laken hwa yan<u>d</u>wr ila   alkharej
                       in inside but it   looks towards the outside

(45) AL2 AD Mina   3: <u>hwna</u> hwa fi kharej
                       here it in outside
                    4: aidan fi kharej   <u>laken</u> hwa alaan yan<u>d</u>wr ila   dakhel
                       also in   inside   but it   now looks towards inside

In 8 utterances of postbasic level and 10 of advanced level, learners use, as in French L2, an explicit deictic perspective.

(46) AL2 PB Eric 2 : amam   alnafi<u>d</u>a laken hwa yan<u>d</u>wr   <u>ilai</u>
                      in front of the window but   it   looks   towards me

(47) AL2 AD Véronique 2 : alkitta amam alnafi<u>d</u>a laken hwa yan<u>d</u>wr   <u>ila hwna</u>
                          the cat in front of the window but it   looks towards here

In the two following tables, the linguistic realisation of the referential continuity/change is related to the schema of the adopted strategy in both levels

Table 12 Referential continuity/change in the descriptive schemas of postbasic learners in Arabic L2

Schema	Referential continuity/change
DS→DS→DS→DS	L+O→ now/also L + but O → now/here L + O + now L but O
DS→O→DS→ O	L+O → here/now O → here/now L + (but) O → here/now O
L →DS→ L→ DS	L + also L + but O → here/now L + also L + but O

(now = alaan, also = aidan, but = laken, here = huna)

Table 13 Referential continuity/change in the descriptive schemas of advanced learners in Arabic L2

Schema	Referential continuity/change
DS→DS→DS→DS	L+O → also L + but O → here/now L + O → here L + but O
DS→O→DS→O	L+O→here/now + O→ here/now L+ (but) O → here/now O
L→DS→L→DS	L → L + but O → here/now/also L + but O → here/now O

(now = alaan, also = aidan, but = laken, here = hwna)

On the other hand, both levels express the orientational information by where the *cat* looks, and never by its frontal direction. Consequently, the orientation is always defined in function of the interior/exterior space. The concept of inclusion/exclusion plays an essential role also in localising the *cat* in the majority of utterances. The next table presents the relation of Rel/strategy

Table 14 Strategy/Rel in the descriptions of French learners of Arabic L2

Postbasic	L	O	DS (L+O)	
Number	4/40	8/40	28/40	
			L = 28/40	O=28/40
Rel	Window ¾ Int./ext. ¼	Int./ext. space 8/8	Window 12/28 Int./ext. space 16/28	Int./ext. space 20/28 Deictic pers. 8/28
Advanced	**L**	**O**	**DS (L+O)**	
Number	8/40	6/40	26/40	
			L= 26	O = 26
Rel	Window 4/4 Int./ext. space 4/4	Int./ext. space 6/6	Window 13/26 Int./ext. 13/26	Int./ext. space 16/26 Deictic pers. 10/26

The influence of L1 is obvious in the referential maintenance, the subject of the verbal construction, the intransitivity of the verb *yan̠dwr* 'look' and the SN *alkharej* 'the exterior'. Learners, especially at postbasic level, refer to the Th *cat* by the pronoun *hwa* 'it' in the majority of their utterances. Advanced learners use this pronoun less frequently (only in 30% of their utterances). As for the subject of the second clause of complex constructions, in almost all the utterances which represents the DS, learners of both levels use *hwa* to refer to the *cat*.

> (48) ALE PB Patrice 3 : alaan hwa fi alkharej laken <u>hwa</u> yandwr   ila   alkharej
> now it   in the inside but   it   looks   towards the outside

> (49) ALE AD Philippe 2 : alkitta amam alnafi̠da wa   <u>hwa</u> yan̠dwr alkharej
> the cat in front of the window and <u>it</u> looks the outside

The verb *yan̠dwr* 'look' is regularly employed as transitive; the equivalent in French *regarder* functions both transitively and intransitively. On the other hand, the SN *alkharej* 'the exterior' is used systematically as a PP to replace the locative expression *dehors* 'equivalent to *outside*'.

In sum, the idiosyncratic means produced in French L2 and in Arabic L2 can be explained by the differences between these two languages. The transfer implies the organisational principles of L1 and their adaptation to the items of L2.

5. Conclusions

As we already mentioned, the realisation of the task *cat/window* implies two constraints:
1. The first constraint is explicitly formulated by the instruction, and should lead to relating these two entities; this instruction imposes actually a defined perspective of spatial description.
2. The second constraint is implicit; it is imposed by the four spatial configurations and should lead to making explicit the intrinsic orientation of the *cat*.

The interaction between these two constraints determines the continuous/discursive character of the task. Although the instruction demands to express the spatial relation between the *cat* and the *window*, the informant can use the concept of inclusion/exclusion in his description. In this way, he/she does not follow literally the instruction, but defines the position of the *cat* relative to the interior/exterior space. In both cases: Rel = *window* or Rel = the interior/exterior space, the entity *window* plays a primordial role; it localises the Th in the first case and establishes the division of space into inside/outside in the second.

However, the inclusion/exclusion concept does not represent only the result of escaping the instruction, it is also imposed by the nature of the task itself. Actually, the orientational component can not be expressed relative to the *window*, but only to the interior/exterior space, unless of course if the informant produces the translation equivalent of *its back is against the window* which defines implicitly where the *cat* looks by making explicit its intrinsic orientation.

The observed evolution in L1 and in L2 is analysed in function of the two mentioned constraints and takes into consideration two types of interaction :
1. the conceptual complexity and the language specificities (in L2, the interplay between L1 and L2 is also considered) ;
2. the organisation of part/whole.

The analysis of developmental sequences in L1 shows that at 4 years of age informants pay attention only to the constraint imposed by the given instruction. In French and in Arabic, they produce minimal descriptive utterances which express only the position of the *cat* relative to the *window*. The only schema attested at this age in both languages is L→L→L→L, realised by utterances that do not contain any item which ensures the referential continuity.

In the schema L→L→L→L, each image is described separately without being related to the others. This schema represents a descriptive perspective which is defined strictly in relation to the instruction, and does not change according to the variability of the orientation of the Th in the four configurations.

The similar simplified conceptual structure elaborated by children of this age in both languages is translated by simple utterances. It takes however different syntactic structure which involves the specificities of the language and its constraints. The observed differences concern mainly how children mark the referential continuity relative to the Th *cat*, and the

use of the expression *barra* 'outside' in Arabic to delimit the region of the Rel *window* 'outside the window'; the type of combination is not possible in French.

At 7 years, French and Arabic children conceptualise the task in its double constraint. They take into consideration the two variables in the majority of their productions. The discursive unity is built in this case thanks to using the DS in the description of the four configurations; the schema DS→DS→DS→DS is attested actually in 70% in French and in 60% in Arabic. But although it predominates, L→L→L→L is still registered in 20% in both languages, DS→L→DS→DS in 20 % in French, and DS→DS→L→L in 10% in Arabic.

As for the descriptions produced at 10 years, our analysis shows a significant evolution which does not rely on the schema DS→DS→DS→DS but on organised episodes constructed by a couple of utterance: L→DS→L→DS (40% in French and 50% in Arabic), and DS→O→DS→O (20% in French and 10% in Arabic).

The next table summarises the characteristics of the descriptions produced in the three ages in French and Arabic L1

Table 15 Characteristics of the descriptions in French and Arabic L1

Language/age	Schemas of strategy	Descriptive perspective	Discursive unity built by
French 4 years	L-L-L-L (100%)	*Partial*	
Arabic 4 years	L-L-L-L (100%)	Partial	
French 7 years	DS-DS-DS-DS (60%)	Total	- 13 *toujours* (still)
	L-L-L -L (20%)	Partial	- 6 *mais* (but)
	DS-L -DS-DS (20%)	Non organised	
Arabic 7 years	DS-DS-DS-DS (70%)	Total	- 12 *lissa* (still)
	L-L-L-L (10%)	Partial	- 8 *bass* (but)
	DS-DS-L-L (20%)	Non organised	
French 10 years	DS-DS-DS-DS (40%)	Total	- 5 *toujours* (still)
	L-DS-L-DS (40%)	Discursive	- 16 *mais* (but)
	DS-O-DS-O (20%)	Discursive	- 10 *maintenant* (now)
Arabic 10 years	DS-DS-DS-DS (40%)	Total	- 6 *lissa* (still)
	L-DS-L-DS (50%)	Discursive	- 6 *bass* (but)
	DS-O-DS-O (10%)	Discursive	- 11 *halla* (now)

As shown in the table, the evolution across the three ages in both languages implies over all the adopted descriptive strategy. The way children conceptualise the task determines how they describe the four configuration. The evolution can be seen as the following schema

Partial descriptive →→→ Total descriptive   →→→ Discursive descriptive
strategy   strategy   strategy in the majority
                                                                              of the descriptions
L→L→L→L   DS→DS→DS→DS   Organised episodes:
                                                                          L→DS→L→DS
                                                                          DS→O→DS→O

Thus, at 4 years, the descriptions can be interpreted as four answers to four separate
questions: 'where is the cat in relation to the window in the first configuration ?', 'where is
the cat in relation to the window in the second configuration ?', 'where is the cat in relation to
the window in the third configuration ?' and 'where is the cat in relation to the window in the
fourth configuration ?', or as 'where is the cat in relation to the window in each configuration
separately?". This conceptual structure represents the partial perspective/strategy
L→L→L→L which takes the form of simple utterances that express only the location of the
cat.

At 7 years, children in both languages seem to understand the task in its double constraint.
They actually make explicit both locative and orientational information in the majority of
their descriptions. This total perspective DS→DS→DS→DS leads to producing complex
utterances. What is particular in the productions of this age is that children focalise on the
referential continuity more than referential change, and that they do not consider these two
criteria at the same time; their utterances make explicit either the continuity or the change,
but never both. Furthermore, the partial strategy L persists in their descriptions; it appears
either in the schema L→L→L→L or partially in DS→DS→L→L and DS→L→DS→DS.

In their DS→DS→DS→DS, children of this age express in a complete and an over-explicit
way the discursive character of the task. This total perspective relies on a mobile point of
reference. The description of L and of O in the second configuration depends on the first one,
the description of the third depends on the second, and of the fourth, on the third. Conversely,
in their L→L→L→L, children adopt a partial (only locative) perspective. As for the schemas
where L appears only once or twice, children represent a non organised way of description;
the use of L in a set of DS interrupts the referential relation (especially in the orientational
component) with the precedent configuration.

The evolution at 10 years is not characterised by the disappearance of L, but rather by the
organised episodes which relate the second to the first configuration, and the fourth to the
third. This discursive perspective/strategy takes the two distributions L→DS→L→DS and
DS→O→DS→O. It creates an equilibrium between what is linguistically expressed and what
can be inferred. In these schemas, the items that ensure the referential continuity/change play
also an important role, but what builds effectively the discursive continuity is the organised
episodes themselves. Besides, our analysis shows that the adopted descriptive strategies do
not determine only the items which express the referential continuity/change but also their
distribution.

Developmental sequences show also that the inclusion/exclusion concept is used
progressively across the three concerned ages. At 4 years in both languages, only the entity
window is referred to as Rel, whereas at 7 and 10 years, the interior/exterior space intervene
not only in the description of the intrinsic orientation of the *cat* but also in its location.

As for the descriptions in French and Arabic L2, the analysis points out that learners articulate the majority of their descriptions around the organised episodes in postbasic and in advanced level. Consequently, the development between the two acquisitional levels in each L2 can not be defined according to this criterion, rather by the linguistic structure and the means used to ensure the discursive cohesion.

In other words, what makes the difference between the descriptions of the two levels in both L2 is above all the linguistic structure which implies the interaction between L1 and L2, and leads to the production of idiosyncratic means. Thus, the descriptions do not develop by an evolving elaborated conceptual structure, rather by the linguistic realisation of a complex conceptual structure, or more precisely by the linguistic means used in order to reinforce the discursive cohesion. The characteristics of the descriptions in each L2 are presented in the two following tables

Table 16 The characterises of the descriptions in French L2

Acquisitional level	Schemas of strategy	Descriptive perspective	Discursive unity built by
Postbasic	DS-DS-DS-DS (50%) DS-O-DS-O (40%) L-DS-L-DS (10%)	*Total* Discursive *Discursive*	- 19 (in the) 2nd /3rd / 4th picture - 12 *mais* (but) - 8 *puis* (then
Advanced	DS-DS-DS-DS (30%) DS-O-DS-O (40%) L-DS-L-DS (30%)	Total Discursive Discursive	- 10 toujours (still) - 8 mais (but) - 9 maintenant (now) - 6 ici (here)

Table 17 The characterises of the descriptions in Arabic L2

Acquisitional level	Schemas of strategy	Descriptive perspective	Discursive unity built by
Postbasic	DS-DS-DS-DS (40%) DS-O-DS-O (40%) L-DS-L-DS (20%)	Total Discursive Discursive	- 4 aidan (still) - 7 laken (but) - 12 alaan (now) - 6 hwna (here)
Advanced	DS-DS-DS-DS (30%) DS-O-DS-O (30%) L-DS-L-DS (40%)	Total Discursive Discursive	- 5 aidan (still) - 5 laken (but) - 9 alaan (now) - 8 hwna (here)

As shown in these two tables, the evolution in both L2 does not rely on the passage from one schema to another as in L1 where children conceptualise progressively the double constraint of the task. The conceptual maturity of adult learners leads to the consideration of the constraints in both levels of mastery of L2.

However, developmental process in L1 and L2 show some similarities between descriptive strategies adopted by L2 learners and children of 10 years. These similarities concern mainly

the organised episodes, the type of Rel used to describe the location of the *cat,* and the deictic perspective adopted in some descriptions.

But despite these common points, the overall perspective creates the major difference. In their organised episodes, children of 10 years mark the referential continuity/change between the second and the first configuration, the fourth and the third. They in this way divide the four configurations in two sets. Adult learners on the contrary express also the referential relation between the third and the second configuration.
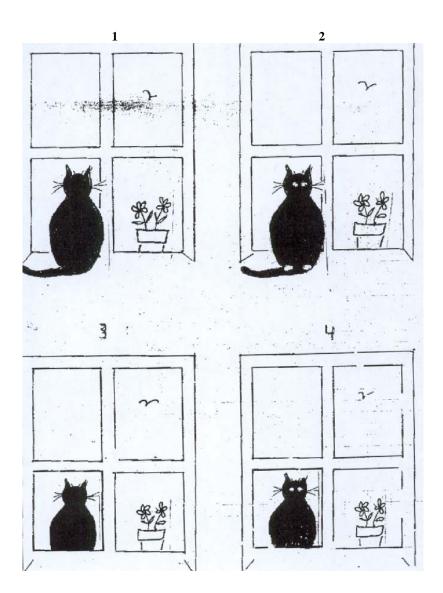
As for our methodology, we think that our conditions influence the productions in two ways. First of all, they contribute towards building the schema DS→DS→DS→DS and the organised episodes in their two forms DS→O→DS→O and L→DS→L→DS. These schemas are indeed the result of the presentation of four configurations which represent a locative continuity and an orientational rupture between the second and the first, a locative and an orientational change between the third and the second, and an orientational change between the fourth and the third. Notice also that a descriptive schema like O→DS→O→DS is not attested, since the instruction itself focalises the attention of informants principally on the locative information.

On the other hand, our methodology leads to using a static perspective of spatial location. In all the descriptions produced in L1 and in L2, the informants adopt a static perspective and never a dynamic perspective. This point can again be explained by the nature of the presented configurations and also by the given instruction. In comparison with another type of successive images which represent the movement of a protagonist across different points of reference (see for example the *cat story* and *the horse* story used by Hendriks 1998; Hendriks and Hickmann, 1998; Hickmann and Hendriks,1999), the change of location of our *cat* occurs always in function of the same point of reference. In addition, the given instruction "*where is the cat in relation to the window*?" does not play the same role of, for example, '*tell me the story of the cat in these four images*".

In sum, the analysis of the descriptions produced in L1 and L2 points out :
1. A similar evolving conceptual structure across the three ages in French and Arabic L1. The linguistic realisation of this structure differs in function of the constraints of the language

2. Different developmental process between L1 and L2 despite some similarities. These results confirm those pointed out in the comparative researches of Hendriks, 1998; Hendriks and Hickmann 1998; Hickmann and Hendriks, 1999

3. The impact of the specificities of L1 in the realisation of the descriptive task in L2. Our analysis shows that the conceptual functional constraint represents a major principle which intervene in the organisation of the productions of advanced learners

4. The influence of the methodological conditions on the perception and the realisation of this task.

Appendices

Bibliographie

Bowerman, M. (1985). What shapes children's grammar ?. In D.I. Slobin (Ed.). The *crosslinguistic study of language acquisition. Vol 2*. Theoretical issues. HilLsdale, NJ: Lawrence Erlbaum.

Bowerman, M. and Choi, S. (1994). « Linguistic and nonlinguistic determinants of spatial semantic development ». Paper presented at the Boston University Conference on Language Development, January.

Bowerman, M. and Choi, S. (2001). Shaping meanings for language : universal and language-specific in the acquisition of spatial semantic categories. In M. Bowerman and S. Levinson (Eds.) *Language acquisition and conceptual development*. Cambridge : Cambridge University Press.

Bühler, K. (1934). *Sprachtheory : Die Darstellungsfunktion der sprache*. Jena : Gustav Fischer.

Carroll, M. and Becker, A. (1993). Reference to space in learner variety. In C. Perdue (Ed.). *Adult language acquisition: cross-linguistic perspectives*. Vol. 2 *The results*. Cambridge: Cambridge University Press.

Carroll, M. and von Stutterheim, Ch. (1993). The representation of spatial configurations in English and German and the grammatical structure of locative and anaphoric expressions. *Linguistics* 31/6,1011-1041.

Carroll, M, Murica-Serra, J., Watorek, M. et Bendiscioli, A. (2000). The relevance of information organisation to second language acquisition studies : the descriptive discourse of advanced adult learners of German. *Studies in Second Language Acquisition* 22(3).

Choi, S. and Bowerman, M. (1991). Learning to expess motion events in English and Korean : The influence of language-specific lexicalization patterns, *Cognition* 41 : 83-121.

Corder, S.P. (1967). The significance of learner's errors. In *International Review of Applied Linguistics*, 5.
Johnston, J.R. and Slobin, D.I. (1979). The development of locative expressions in English, Italian, Serbo-Croatian and Turkish. In *Journal of Child Language*, 6.

Hendriks, H. (1998). Reference to person and space in narrative discourse : a comparaison of adult second language and child first language acquisition. *Studi italiana di Linguistica theorica e Applicata*, numéro spécial.

Hendriks, H. et Hickmann, M. (1998). Référence spatiale et cohésion du discours : acquisition de la langue par l'enfant et par l'adulte. In : M.Pujol, L. Nussbaum, et M. Liobera (éds.), *Acquisicion de lenguas extrajeras : perspectivas actuales en Europa*. Madrid : Edelsa (collecion CIE. Metodolodia), 151-163.

Hickmann, M. et Hendriks, H. (1999). Cohesion and anaphora in childrens' narratives : a comparaison of English, French, German and Chinese. *Journal of child Language* 26, 419-452.

Hickmann, M. (2000). Le développement de l'organisation discursive. In M. Kail et M. Fayol (Dir.), *L'acquisition du langage*. *Le langage en développement au-delà de trois ans*. Paris : Presses Universitaires de France.

Hill, C. (1991). Recheches interlinguistiques en orientation spatiale. In *Communications*, n° 53.

Hirzalla, H. (2005). *La construction discursive et son développement en langue maternelle et en langue étrangère: l'expression de l'espace.* Thèse de doctorat en Sciences du Langage. Université Paris 8.

Hirzalla, H. (2007). The construction of discourse and its development in first and second language. In *California Linguistic Notes*, volume 32, n° 1.

Hirzalla, H. (2008). L'impact du contexte interactionnel sur la construction discursive des enfants de 4 ans . In *California Linguistic Notes,* volume 33, n° 1.

Giaccobe, J. (1992). Acquisition d'une langue étrangère : cognition et interaction. *Etudes sur le développement du langage chez l'adulte*. Paris : CNRS Editions.

Klein, W. et Perdue, C. (1997). The basic variety (or : couldn't natural languages be much simpler ?). *Second Language Research* 13 (4), 301-347.

Klein, W. et von Stutterheim, C. (1991). Text Structure and referential movement. *Sprache und pragmatik* 22, 1-32.

Lado, R. (1957). Linguistics across cultures : applied linguistics for language teachers. Ann Arbor: University of Michigan Press.

Lambert, M., Carroll, M. et von Stutterheim, C. (2003). La subordination dans les récits d'apprenants avancés francophones et germanophones de l'anglais. In *AILE,* n° 19.

Perdue, C. (Ed.) (1993). *Adulte Language Acquisition : crosslinguistic perspectives*, Vol. I : *Field Methods*, Cambridge, Cambridge University Press.

Porquier, R. (2004). Du français observé sous divers éclairages. Questions de corpus. *Pré-textes franco-danois* 4. Institut for Sprog og Kultur.

Selinker, L. (1972). Interlanguage. In *International Review of Applied Linguistics*, 10.

Slobin, D.I. (1973). Cognitive prerequistites for the development of grammar. In Ferguson C.A. et D.I. Slobin (éd.) *Studies of Child language development*, New York, Holt, Rinehart and Winston, pp. 175-208.

Slobin, D.I. (1985). Crosslinguistic Evidence for the Language-Making Capacity. In Slobin D.I (éd.) *The crosslinguistic study of language acquisition*, Vol. II, 1157-1256. Hillsdale, N.J. : Lawrence Erlbaum.

Slobin, D.I. (1991). Learning to think for speaking : native language, cognition and rhetorical style. Pragmatics, 1.

Slobin, D.I. (1996). From 'thought and language' to 'thinking for speaking'. In Gumperz and S. Levinson (Ed.) *Rethinking linguistic relativity.*

Slobin, D.I. (2001). Form-function relations : how do children find out what they are ? In M. Bowerman and S. Levinson (Eds.) *Language acquisition and conceptual development*. Cambridge : Cambridge University Press.

Talmy, L. (1975). Semantics and syntax of motion. In J. Kimball (Ed.) *Syntax and semantics 4*. New York: Academic Press.

Talmy, L. (1983). How language structures space. In H. Pick and L. Acredolo (Ed.). *Spatial orientation: Theory, research and application*. New York: Plenum Press.

Talmy, L. (1985). Lexicalization patterns: semantic structure in lexical form. In T. Shopen (Ed.) *Language typology and syntactic description*. Vol. 3: *Grammatical categories and the lexicon*. Cambridge: Cambridge University Press.