

USE OF PAST TENSE VERB INFLECTIONS IN FRENCH: DEVELOPMENTAL STUDY OF THE INTERACTION BETWEEN TYPE OF PROCESS AND CONTEXT

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Abstract

The experiment reported here examines the interaction between certain types of processes expressed by verbs and certain adverbial contexts and the impact of this interaction on the selection of past tense verb inflections in French. Seven-, nine-, eleven-, and thirteen-year-old children as well as adults (20 subjects per age group) were given one-clause sentences with the verbs written in the infinitive form. Each sentence began with an adverbial -- "suddenly", "often", "yesterday", etc. -- and the subjects were instructed to put the verbs in whatever "past tense they felt most appropriate". Two types of verbs were used: clearly resultative verbs and clearly non-resultative verbs. As expected, the results showed that the type of process being described had a strong impact: non-resultative verbs were associated frequently with the "imparfait" tense, while resultative verbs were associated with other past tenses. Verb context also had a strong effect: the adverb "often" induced the use of the "imparfait", while "suddenly" mainly led to the use of other past tenses. An interaction between type of process, context, and age was observed. Contrary to our prediction, the context and type-of-process effects were very weak in young children, but increased with age. However, the "weight" of the context effect was always greater than that of the type-of-process effect. These results are discussed in relation to the metalinguistic characteristics of the task.

Key words: Psycholinguistics, development, verbal inflections, tense-aspect.

Mots clés : Psycholinguistique, développement, flexions verbales, temps-aspect.

The aim of the present study was to determine whether the interaction between certain types of processes, expressed by verbs, and certain adverbial contexts has an impact on what past tense verb inflections are chosen in French by adults and children age 7 or older on a written sentence-completion task.

In a language such as French, verb inflections constitute a system of morphological marks whose selection depends on three parameters (Cf. Gardes-Tamine, 1987a, 1987b). First, verbs have a deictic dimension: all events or states evoked are situated with respect to an utterance source, generally the time at which the utterance is being spoken. The past, present, or future quality of the facts related therein is determined by this deictic dimension. Second, any process, whether static or dynamic, has a certain number of characteristics of its own. For example, a given process may take more or less time to unfold, may or may not lead to a result, etc. This second dimension, called "Aktionsart", clearly originates in the cognitive representation of the processes that are expressed by the verbs (Larochette, 1980). Third, when constructing his/her message, the speaker must choose a *point of view* (Comrie, 1976; Smith, 1980). The same event or state can therefore be expressed as if it were in the process of occurring (by taking the "inside" view, which corresponds, for example, to the progressive form in English or the *imparfait* in French) or as an accomplished event (by taking the "outside" view like that rendered by the French *passé composé* and *plus-que-parfait*).

The fact that three parameters are involved in the selection of verb inflections obviously makes their acquisition and use relatively complex. This is particularly true for the past tense. Indeed, written French has at least five inflection modalities to mark the past tense: the *imparfait* (imperfect); the *passé composé*, formed like the English present perfect; the *plus-que-parfait* or past perfect; the *passé simple*, formed like the English preterite or simple past; and the *passé antérieur*, a sort of past preterite. The resulting situation is made all the more complicated by the fact that, strictly speaking, there are no restrictions as to which past tense must be employed. For example, nothing prohibits the use of the *imparfait* in French to describe an instantaneous event (e.g. "to explode"). However, certain verb tenses are much more likely than others to be associated with a given form of "Aktionsart" (i.e., with a given type of process).

Indeed, a certain number of regularities of this type were found in a series of prior experimental studies (Fayol, Abdi, & Gombert, 1986; Fayol, Gombert, & Abdi, 1985). As in the present study, these experiments involved giving adult and child subjects sentences containing verbs that a priori belonged to different linguistic categories (durative, resultative, non-resultative, ...). The verbs were presented in the infinitive form, and the subjects were asked to write them in a form that would express an "already happened or already occurred" event. Several possible tenses were suggested (*imparfait*, *passé composé*, *plus-que-*

parfait", etc.), from intuition dictated.

Descriptive analysis clearly revealed that there were systematic differences across all ages starting at age 7. A group of processes was labeled *imparfait*. These were *posé*, *plus-que-parfait*. These differences, due to cultural background, were chosen, the lack of which was clear. Finally, the differences, were as likely as the *passé composé*, *plus-que-parfait*.

Thus, the analysis of the type of process (Aktionsart) that (a) processes are associated with the *imparfait* and the process of occurring "to spill", "to explode", i.e. the *passé simple* by younger subjects. The point of view the process is described. Indeed, it corresponds to the corresponding context. Inversely, it is possible to take an inside point of view on the process in nature.

These results confirm the characteristics of a verb inflection selected with the acquisition (Bronckart (1976) : the process is predominantly determined by more or less durative processes consistent with this for Italian (Antinucci & Villiers, 1979), P (Fayol, 1985).

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Descriptive analyses of the data (factorial analysis, cluster analysis, etc.) clearly revealed three facts. First, certain processes ("to move", "to tremble", ...) were systematically associated with the "*imparfait*". This association was made at all ages starting at age 7-8, but was much more marked in adults. A second group of processes ("to explode", "to fall", ...) were very rarely written in the "*imparfait*". These verbs were expressed in a wide variety of tenses ("*passé composé*", "*plus-que-parfait*", "*passé simple*", ...), depending on the subject's age and cultural background. Although there was no regularity in the tenses actually chosen, the lack of use of the "*imparfait*" tense for these processes was very clear. Finally, the remaining processes, forming a set with ill-defined boundaries, were as likely to be expressed in the "*imparfait*" tense as in any other tense ("*passé composé*", "*plus-que-parfait*", "*passé simple*", ...).

Thus, the analysis clearly revealed the existence of a correlation between type of process (or "Aktionsart") and verb inflection. In summary, it appears that (a) processes which do not clearly lead to a result are primarily associated with the "*imparfait*", an inflection that tends to present events as if they were in the process of occurring, and (b) processes that quickly lead to a result ("to fall", "to spill", "to explode", ...) are associated with tenses other than the "*imparfait*", i.e. the "*passé simple*", mostly used by adults; but also the "*passé composé*", used by younger subjects. This varying linguistic behavior is most likely linked to the point of view the subjects take with respect to each of the processes being described. Indeed, it is no doubt easier to view a process from the inside when the corresponding cognitive representation involves the unfolding of an action. Inversely, it is probably more difficult (although not impossible) to take the inside point of view for events that are represented cognitively as instantaneous in nature.

These results support the theoretical standpoint whereby the inherent characteristics of a process ("Aktionsart") are essential determinants of the verb inflection selected. This conception has strongly influenced research dealing with the acquisition of verb forms. In a series of experiments on French, Bronckart (1976) showed that the selection of verb forms before age 6 was predominantly determined by the characteristics of the reference situation (more or less durative action, resultative action, ...). Other findings which are consistent with this theory -- called "aspect before tense" -- have been obtained for Italian (Antinucci & Miller, 1976), English (Cromer, 1974; De Villiers & De Villiers, 1979), Portuguese (De Lemos, 1981), German and French (Meisel, 1985).

However, important amendments have since been made to the initial hypothesis. Although many researchers continue to consider that the available

empirical data support the idea that during development, children take the characteristics of a process into account before its deictic dimension when selecting verb inflections, most of these same researchers consider this stage to be short (Bloom, Lifter, & Hafitz, 1980; Harner, 1980, 1981, 1982a, 1982b; Szagun, 1978). Some will go as far as to refute this theory altogether, stating that the results obtained in research pertaining to the acquisition of certain languages clearly reveal that young subjects do take deixis into account in the determination of verb inflections (Weist, 1984; Weist, Wysocka, Witkowska-Stadnik, Bukzowska, & Konieczna, 1984).

The substantial differences in findings and interpretations can be attributed to two factors. First, cross-language comparisons are difficult. Each language forms a different system with different oppositions between "signifiers" (and perhaps even different oppositions between the "concepts signified"). Thus, most of the above studies only address the question of the opposition between what in French corresponds to the "*présent*" and the "*passé composé*", in English to the present tense and the simple past. Only Antinucci and Miller (1976) and Bronckart (1976) have dealt with the "*imparfait*" tense. With this lack of a clearly defined invariant, no definite conclusions can be drawn. Second, most studies, particularly the less recent ones, have been based on the analysis of spontaneous corpora. Under such conditions, it is very difficult to determine what factors contribute to the selection of a given verb form. In particular, it appears impossible to dissociate the effect of the type of process from that of the context in which the process occurred.

More recent studies have attempted to better control the diverse factors likely to be involved. The type of process was shown by Smith (1980) to influence 4-year-olds. Smith showed that these children simultaneously took into account the characteristics of the process (resultative vs. non-resultative) and the deictic dimension (choice of past tense verb forms). In the same perspective, Mapstone and Harris (1985) found a correlation between type of process and verb inflection in English 4- and 6-year-old children. Finally, in a series of three experiments conducted on 3- to 5-year-olds, McShane and Whittaker (1988) controlled three of the five most commonly invoked characteristics of processes: their *telic* nature (whether or not the process leads to a result), their *iterative* nature (repetitiveness or non-repetitiveness of the event), and their *durative* nature. These authors found not only that children as young as three primarily used verbs in the past tense, but also that there was a very marked increase in the frequency of the past tense in 4- and 5-year-olds in comparison to the present tense. On the other hand, they found that the differential encoding of process characteristics causes more problems. In fact, they showed that the development of the linguistic inflection system involves the increased use of the progressive past starting at age 4, but also that certain dimensions are marked

at a relatively young age and the progressive past tense for this phenomenon.

The aspect-behavior relationship is nonetheless true of the process being studied by relatively young children believed to be. Nevertheless, the dimension is taken into account in the "art" -- play a joint role determined by the situational.

Thus, studies on this difficult question of the situational or linguistic context has only been seen from a perspective that is Gaonac'h & Espérandieu conducted by Johnson (1985). Johnson used a context of the description and the character of the momentary: "to face the factors. Continuation of the progressive verb form induce the use of the English and to analyze the general case. For

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The aspect-before-tense theory appears to be strongly challenged today; it is nonetheless true that the data gathered so far indicate that the characteristics of the process being described have an impact upon the verb inflection chosen by relatively young children. However, this effect is not as strong as it was long believed to be. Nevertheless, and here again at an early age, the deictic dimension is taken into account. Afterwards, these two factors -- deixis and "Aktions-art" -- play a joint role, interacting no doubt with point of view, which itself is determined by the speaker's perspective and the context (both linguistic and situational).

Thus, studies based on corpus analysis, while indispensable, raise the difficult question of the dissociation of potential factors. Among these factors, situational or linguistic context has certainly been the most neglected. Context has only been systematically approached by authors working in a textual perspective that is irrelevant here (Cf. Bronckart, 1985; Fayol, 1985a, 1985b; Gaonac'h & Espéret, 1985; Reinhart, 1984; Shiffrin, 1981). However, a study conducted by Johnson (1985) showed that context has an impact as early as age 5. Johnson used an imitation task that allows for controlling two factors: the context of the described event (habitual vs. semelfactive = occurring only once), and the characteristics of the process (continuative: "to ride", "to run", ... vs. momentary: "to fall", "to give", ...). The data indicated significant effects for two factors. Continuative processes and habitual contexts tend to induce the use of progressive verb forms. Momentary processes and semelfactive contexts tend to induce the use of the present perfect. However, these findings are limited to English and to an imitation task, and therefore cannot be extended as such to the general case. Further research should be conducted in this perspective.

The selection of verb inflection seems to depend upon both the deictic dimension and the still little-known interaction between the characteristics of the process and the point of view induced by the situational or linguistic context. We will focus on this interaction. With this goal in mind, the verb inflections studied here were limited to the past tense. Indeed in French, there are many past tenses, and the choice of one of them necessarily involves parameters other than the deictic parameter. In the light of the above review, we predict that the characteristics of the process and the context in which it occurs will play a part. (The question of modality is not addressed here.)

In order to control these two dimensions, the ten verbs chosen were ones whose "behavior" had been shown to differ significantly in a previous experiment (Fayol, Abdi, & Gombert, 1986; Fayol, Gombert, & Abdi, 1985). Five of these verbs describe processes that do not lead to a result; the other five

describe processes which quickly come to an end. The verbs were inserted in the infinitive form into sentences beginning with an adverbial. The adverbials were designed to induce a given point of view, e.g. a habitual event (*often*), a break in event continuity (*suddenly*). The subjects were asked to write the verb in any past tense in the blank space provided in the sentence.

The results of prior studies led us to set forth the following four hypotheses.

H1. The type of process is expected to have an impact on choice of verb tense. Verbs describing events which unfold gradually and that do not give rise to any clear result should be most frequently conjugated in the "*imparfait*" tense, whereas verbs describing instantaneous, resultative events should lead to the use of other verb tenses.

H2. The adverbial contexts placed at the beginning of the sentences that were designed to induce the subject to take a "point of view" should also have an effect on the selection of verb tense. *Often* is expected to induce the use of the "*imparfait*", *suddenly*, the use of the "*passé simple*" (Fayol, 1985b). On the other hand, the other contexts should not lead to any systematic choice of tense (Cf. hypothesis H3).

H3. The type of process (resultative vs. non-resultative) should interact with context. In particular, we expect *often* and *suddenly* to call for verb tenses that express iteration and unexpectedness, respectively, regardless of the type of process. On the other hand, *yesterday*, *a long time ago*, and *two days before*, which are less restricting, should lead to an "Aktionsart" effect.

H4. There should be an interaction between the two preceding factors and age. The type-of-process effect can be expected to occur quite early on, while the influence of adverbials should become stronger with development, their "weight" increasing with time. This increase is assumed to be the result of the gradual integration of complete sentence processing.

METHOD

Materials

Based on data gathered in a previous experiment, the following ten verbs were selected for the degree of contrast they exhibited on a correspondence analysis (note 1): (1) five so-called resultative verbs (coded R) -- "*exploser*" (to explode), "*tomber*" (to fall), "*renverser*" (to knock over or spill), "*entrer*" (to enter), and "*arriver*" (to arrive), and (2) five so-called non-resultative verbs (coded \bar{R}): "*jouer*" (to play), "*danser*" (to dance), "*se promener*" (to go for a walk), "*sautiller*" (to skip along), "*trembler*" (to tremble). Each verb in the *infinitive* form was inserted in a sentence.

The sentences with a different verb in this fashion so as to be in opposition.

Each of these adverbial "contexts" ("*Souvent*" (often), "*Longtemps*" (long time ago), "*Il y a longtemps*" (chosen because of the previous narrative without

The twenty-five pages in such a way that each page was associated with one context. Booklets were prepared by circular permutation.

An example of the combinations of the appendix.

Population

Four groups of children (2nd, 3rd, 4th, or 8th grade). There were 10 children in each group. They were from an education science class and all took the same

Procedure

The 7- and 9-year-old groups of five. They were tested collectively on the five resultative verbs in whatever order. They explained that several verbs were chosen for each sentence and that spelling was

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The sentences obtained were added to a set of fifteen other sentences, each with a different verb, also written in the infinitive form. The material was set up in this fashion so that the subjects would not be directly aware of the R/ \bar{R} opposition.

Each of these 25 sentences was then associated with the following five adverbial "contexts", which were always placed at the beginning of the sentence: "*Souvent*" (often), "*Soudain*" (suddenly), "*Hier*" (yesterday), "*Il y a longtemps*" (a long time ago), "*Deux jours avant*" (two days before). These contexts were chosen because of their relatively high frequency of occurrence in the spontaneous narrative writing of French 6- to 12-year-olds (Fayol, 1985a and b, in press).

The twenty-five sentences were crossed with the five contexts to generate 125 statements. These statements were then divided between five different pages in such a way that on each page, each sentence occurred only once, associated with one context. The statement order was varied systematically across the pages. Booklets were made up by systematically modifying the order of the pages by circular permutation.

An example of a page of 25 statements composed of one of the specific combinations of the 25 sentences and the five adverbial "contexts" is given in the appendix.

Population

Four groups each composed of twenty children or adolescents were set up. The mean ages were 7;6 years (French "C.E.1" or 2nd grade), 9;7 years ("C.M.1" or fourth grade), 11;8 years ("sixième" or 6th grade), 13;1 years ("quatrième" or 8th grade). There was also one group of twenty university students majoring in education science (mean age: 28). All subjects were native speakers of French, and all took the sentence completion test.

Procedure

The 7- and 9-year-olds (2nd and 4th graders, respectively) were tested in groups of five. The 11- and 13-year-olds (6th and 8th graders) and the adults were tested collectively. The experimenter asked the subjects to write the infinitive verbs in whatever past tense they thought was most appropriate. The youngest children (2nd and 4th graders) were given an example. The experimenter explained that several solutions were often possible, but that only one could be chosen for each sentence. The subjects were also told that this was not a test, and that spelling was not important.

Only the second graders had problems understanding the instructions. No time limits were set. Except for the second graders, the subjects finished in

thirty to forty minutes, depending on age. For the second graders, the task was divided into five sessions (one each day of the week as they arrived in their classroom).

RESULTS

As stated above in the introduction, the only verb inflection that is stable and common to all the ages studied here is the "imparfait". It was therefore used as the dependent variable. The protocols obtained were assessed by granting one point to each verb written in the "imparfait" tense and zero to each verb written in any other tense. Given that there are two process categories, the mean score for each category varied between 0 and 5.

The individual scores were used as the dependent variable in an analysis of variance (Cf. Abdi, 1987) with the following design:

$$S_{20} (A_5) \times V_2 \times C_5$$

where S (subjects) is a random factor, A is the age or schooling factor (five modalities: age 7, 9, 11, 13, 28), V is the type-of-process factor (two modalities: resultative = R, non-resultative = \bar{R}), and C is the adverbial "context" factor (five modalities: *often, suddenly, yesterday, a long time ago, two days before*); the experimental factors were treated as fixed factors. The significance cutoff level used was .01.

The mean scores given in Table 1 for each of the three variables revealed three phenomena. First, the type-of-process variable (R vs \bar{R}) did have the expected effect, i.e. the proportion of verbs in the "imparfait" tense was higher with \bar{R} than with R [.54 vs .31, respectively; $F(1,95) = 197.557$]. However, contrary to what prior research would lead us to expect, this effect increased considerably with age and/or schooling, as revealed by the strong interaction between age and type of process [$F(4,95) = 14.597$].

In order to examine this phenomenon more closely, an index, *d*, was computed for each subject such that:

$$d = \bar{R} - R$$

(\bar{R} and R represent the number of verbs in the "imparfait" tense for each process type). This index is a criterion for differentiating the two process types. The mean values of *d* are given in Figure 1. A clear *increasing difference* can easily be observed. The analysis of variance conducted on the values of *d* confirmed this observation [$F(4,76) = 13.19$], as did the contrast analysis testing for a linear trend (with weights -2, -1, 0, +1, and +2 for ages 7, 9, 11, 13, and 28, respectively). This contrast explains approximately .96 of the variance associated with the age and/or schooling factor (sum of squares for the contrast: 764.4; sum of squares associated with age: 797.26).

Type of process and

TABLE 1. Numbers resultative), and by age

	\bar{R}
7 yr-olds	R
	\bar{R}
9 yr-olds	R
	\bar{R}
11 yr-olds	R
	\bar{R}
13 yr-olds	R
	\bar{R}
Adults	R
	\bar{R}

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Figure 1. Values of $d = \bar{R} - R$ by age and schooling ($AD = ad$

Figure 1. Valeurs de $d = \bar{R} - R$ en fonction et/ou du niveau scolaire (= Adultes).

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TABLE 1. Numbers of "Imparfait" by contexts, types of process (\bar{R} = non resultative; R = resultative), and by ages and/or schooling.

		CONTEXTS				
		Often	Two days before	A long time ago	Yesterday	Suddenly
7 yr-olds	\bar{R}	1.80	1.90	1.80	1.75	1.65
	R	1.65	1.70	1.75	1.60	1.70
9 yr-olds	\bar{R}	3.55	3.85	4.35	3.80	1.60
	R	2.60	2.70	3.55	2.45	1.35
11 yr-olds	\bar{R}	3.20	2.85	2.55	2.15	1.30
	R	3.00	0.95	1.05	0.55	0.65
13 yr-olds	\bar{R}	3.65	3.30	3.45	2.90	0.20
	R	3.15	0.75	0.95	0.25	0.10
Adults	\bar{R}	4.45	3.75	3.35	3.35	0.65
	R	3.55	0.90	0.95	0.65	0.30

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Figure 1. Values of the index $d = \bar{R} - R$ by age and/or schooling (AD = adults).

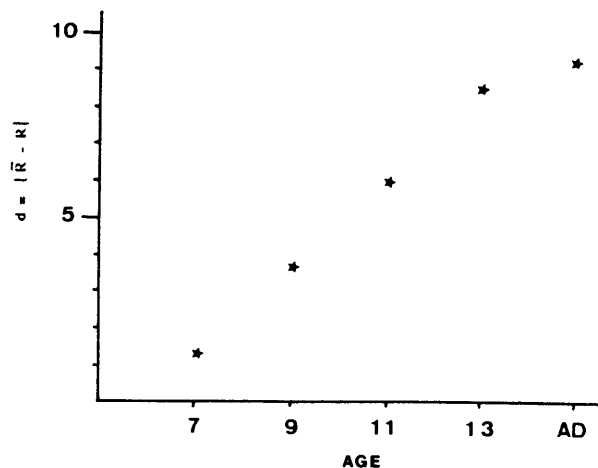


Figure 1. Valeurs de l'indice $d = \bar{R} - R$ en fonction de l'âge et/ou du niveau scolaire (AD = Adultes).

The impact of adverbial "context" was very strong, as expected [$F(4,380) = 80.633$]. As observed in previous research, the mean number of verbs written in the "imparfait" tense was the highest with *often* (3.06) and the lowest with *suddenly* (.95). It was between the two for the other three "contexts" (1.945 with *yesterday*, 2.375 with *a long time ago*, and 2.265 with *two days before*). The existence of an age X "context" interaction [$F(16,380) = 9.976$] supports our hypothesis. The influence of adverbial "context", nearly inexistent at age seven,

becomes more and more marked with age and/or schooling (see below for a more detailed analysis).

The expected type-of-process X "context" interaction was indeed observed [F(4,380) = 34.998]. This interaction appears very clearly on the graphs shown in Figure 2. All ages taken together, we can see that two of the contexts, *often* and *suddenly*, had a consistently strong effect. The weight of these two effects is so great that they virtually "cancel" any possible type-of-process effect. On the other hand, the type-of-process effect is very clear on the other three contexts, where the mean number of "imparfait" tense verbs is indeed very different for R and \bar{R} .

Figure 2. Interaction between type of process (\bar{R} = non-resultative, R = resultative) and context (Y = yesterday, L = a long time ago, O = often, S = suddenly, TDB = two days before).

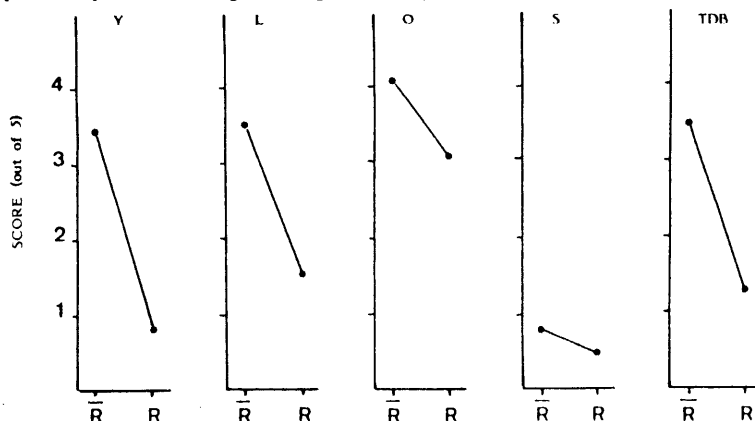


Figure 2. Interaction types de verbes (\bar{R} = arésultatifs ; R = résultatifs) X contextes (Y = hier, L = il y a longtemps, O = souvent, S = soudain, TDB = deux jours avant).

Finally, there was an age X type-of-process X context interaction [F(16,380) = 4.472]. The graph in Figure 3 illustrates this interaction. We can see here that the effect of the context X type-of-process interaction studied in the preceding paragraph differs with age and/or schooling. For the youngest children, there was no type-of-process or context effect. As age (and/or schooling) increased, both of these effects increased.

In order to more precisely determine the extent of these increasing effects, a separate analysis of variance was conducted for each age group, involving type of process and context (design: $S_2 \times V_2 \times C_5$). For each age (or grade in school), this analysis told us what percentage of the variance could be explained by these two variables and their interaction. These percentages can be considered as an indication of the respective weights of the variables in question. The results of this analysis are given in Table 2.

Figure 3. Interaction (résultatifs), and context (deux jours avant).

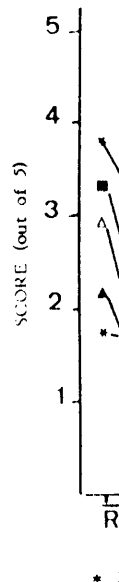


Figure 3. Interaction (résultatifs) x contexte (deux jours avant).

TABLE 2. By age and process factor, the con

Age Group	Percentage of Variance Explained
7-year-olds	~10%
9-year-olds	~15%
11-year-olds	~20%
13-year-olds	~25%
Adults	~30%

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Figure 3. Interaction between age and/or schooling, type of process (\bar{R} = non-resultative, R = resultative), and context (Y = yesterday, L = a long time ago, O = often, S = suddenly, TDB = two days before).

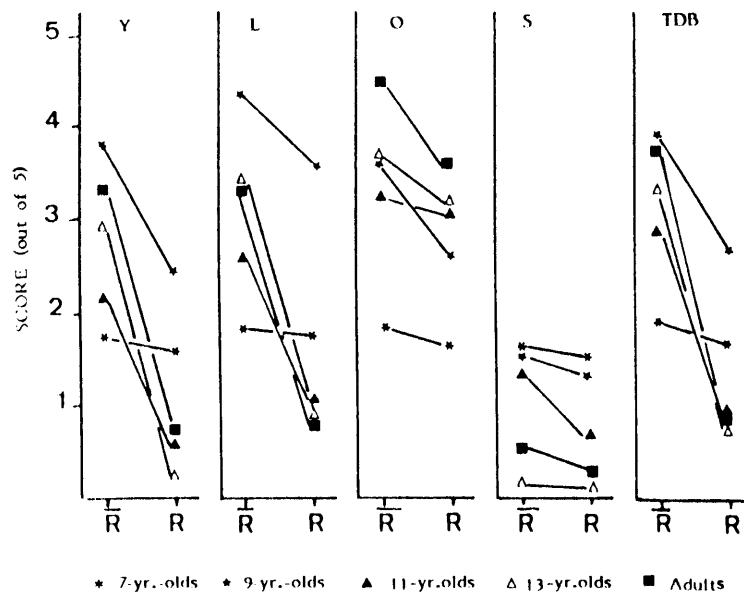


Figure 3. Interaction ages et/ou niveau scolaire X types de verbes (\bar{R} = arésultatifs, R = résultatifs) x contextes (Y = hier, L = il y a longtemps, O = souvent, S = soudain, TDB = deux jours avant).

TABLE 2. By age and/or schooling, proportion of the total variance explained by the type of process factor, the context factor, and their interaction.

	FACTORS		
	Type of process (V)	Context (C)	Interaction V x C
7-year-olds	.0006	.0006	.00049
9-year-olds	.06	.199	.010
11-year-olds	.131	.198	.0391
13-year-olds	.182	.291	.0826
Adults	.236	.351	.0724

TABLEAU 2. Pourcentages de la variance totale expliquée par les facteurs types de verbes et contextes ainsi que par leur interaction en fonction des âges et/ou niveaux scolaires.

The data obtained here confirm our preceding observations. The percentage of variance explained in each case tends to increase with age (or schooling) for each of the variables. Nevertheless, contrary to what the results of previous research suggest, the weight associated with the type-of-process factor is always smaller than the weight of the context factor (except for 7-year-olds). The effect of the interaction between these two factors becomes important only at age 11.

DISCUSSION

The purpose of the present research was to study the effect of the interaction between certain types of process, expressed by verbs, and a limited number of adverbial contexts upon the selection of past verb inflections in written French.

In the research dealing with the use and development of verb inflections, the effects of deixis and of the cognitive representation of process types ("Aktionsart") have been widely studied. By contrast, little work has focused on the *point of view* taken by the speaker. This gap in our knowledge is most likely due to difficulties in controlling this factor. Indeed, the "point of view", which enables one to present the same event as being either in the process of unfolding or being already accomplished (limiting our description here to a caricatural dichotomy), undoubtedly depends on a subjective perspective. However, the "point of view" is also affected by the situational or linguistic context. Consequently, in their corpus analyses, researchers studying the distribution of verb inflections have been able to prove that the narrative structure has an impact on whether the "*imparfait*" or "*passé simple*" is chosen in written French.

This finding led us to question whether the lack of control of the contextual dimension in most research might invalidate some of the conclusions drawn. Consequently, we attempted to devise a method that would fill in this gap by experimentally introducing the point of view factor. In the light of existing data on the influence of context, we used a method that simulated writing; the "*point of view*" factor was controlled by using a small number of adverbial phrases whose effects could be anticipated on the basis of prior text corpus analysis, and inserting them into sentences.

A type-of-process effect, generally observed in psycholinguistic research, was expected to occur. However, we were primarily interested in the impact of the adverbial phrases and their interaction with the type of process. In addition, previous findings on development led us to predict that the type-of-process effect would occur early on, and that the context would have an increasing effect in the course of development.

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The data partially support our hypotheses. Specifically, the hypotheses concerning development were the least supported by the data. On the whole, the type-of-process and context effects were in fact observed, as was the expected interaction. This interaction revealed, as predicted, that the point of view introduced by the adverbials strongly affected the choice of verb tense. It follows that some of the findings obtained on corpus analysis should be re-examined. All or part of the conclusions drawn may be questioned due to the fact that context, and the point of view it induces, were not taken into account.

On the other hand, our findings concerning development present some problems. Indeed, the expected early influence of type of process did not occur here. Moreover, it was always weaker than the effect of the adverbials. And the interaction did not appear until age 11.

It is likely that these facts are partially due to the task required of the subjects. First of all, the task involved writing, not speaking. Due to their lack of writing skills, the youngest subjects (age 7-8) may have performed poorly. But this is clearly not the essential reason. Indeed, all previous research on writing has shown that the difficulties brought on by slower speeds and lack of fluency do not occur after age 9 (Simon, 1973).

In fact, the differences between our results and previously published findings may be due to the task itself. While most studies are based either on spontaneous utterances or descriptions induced by observable, situational events, the present task was of a totally different nature. Our subjects did not observe any event or phenomenon. They were confronted with *verbal items from which they were to construct a mental representation* before selecting a verb form. This condition is highly different from the ones used previously. Therefore, the slow progression with which the subjects took the type of process into account may result from the strong metalinguistic nature of the task (Gombert, 1989).

The same line of reasoning is valid for the adverbial phrases. Their influence increased with age and/or schooling. The adverb *often* induced the "*imparfait*" more and more frequently with age, *suddenly*, a "*non-imparfait*" (usually although not always the "*passé simple*"). This gradual effect is also probably due to the subjects' increasing expertise for the task.

This interpretation is consistent with the conclusions drawn concerning the age at which the interaction between type of process and adverbial context appears. It is highly likely that earlier in development, utterance context (expressed here as adverbials) has a strong effect on the selection of verb inflections, at least for simpler or less metalinguistic tasks. Only Johnson's (1985) research has provided any insight into this matter for the oral medium.

Yet, this problem is a crucial one. In fact, it conditions most of the studies based on corpus analysis, which have placed priority on the effects of type of process. It also allows us to raise the question of the selection of verb inflections

in a much wider framework, ranging from their uses in discursive situations to their uses in texts. Finally, it leads us to reconsider such type-of-process effects while questioning their generality and the factors likely to favor or inhibit them.

NOTE 1

Correspondence analysis was conducted on verbs put in the past tense by 140 subjects between the ages of 7 and 25. Three facts were revealed by the analysis.

- All of the data were located around one dominant axis, which alone accounted for .87 of the inertia (versus only .06 for the second axis).
- On this axis, the "imparfait" opposed the other verb forms ("passé composé", "passé simple", "plus-que-parfait", ...; the "passé antérieur" did not occur).
- Certain verbs were located very close to the "imparfait" ("to play", "to dance", ...); others were located very far away ("to explode", "to spill", ...). We selected five of the close verbs and five of the far verbs (Cf. Fayol, Gombert & Abdi, 1985).

APPENDIX

- Hier le chat (être) effrayé.
Yesterday the cat (to be) afraid.
- Il y a longtemps la souris (avoir) du fromage.
A long time ago the mouse (to have) some cheese.
- Deux jours avant Paul (vouloir) des bonbons.
Two days before Paul (to want) some candy.
- Souvent le bébé (pouvoir) se tenir debout.
Often the baby (to be able to) stand up by himself.
- Deux jours avant l'étoile (briller) derrière les nuages.
Two days before the star (to shine) behind the clouds.
- Il y a longtemps le peintre (monter) sur le bord de la fenêtre.
A long time ago the painter (to climb) on the window ledge.
- Hier la dame (aller) chez le coiffeur.
Yesterday the lady (to go) to the beauty shop.
- Souvent l'enfant (préparer) son sac.
Often the boy (to prepare) his bag.
- Deux jours avant le renard (avancer) dans la forêt.
Two days before the fox (to creep) through the forest.
- Soudain le vieil homme (écrire) une lettre.
Suddenly the old man (to write) a letter.
- Il y a longtemps le père (entrer) dans la cave.
A long time ago the father (to enter) into the cellar.
- Souvent le vélo (arriver) vers la voiture.
Often the bicycle (to come) close to the car.
- Hier le chien (renverser) le bol de lait.
Yesterday the dog (to spill) the bowl of milk.

Type of process and

- Soudain le pot (.....)
Suddenly the pot (.....)
- Souvent la bouteille (.....)
Often the bottle (.....)
- Il y a longtemps (.....)
A long time ago (.....)
- Soudain la fillette (.....)
Suddenly the little (.....)
- Souvent le chaton (.....)
Often the kitten (.....)
- Hier l'eau (.....)
Yesterday the water (.....)
- Soudain l'arbre (.....)
Suddenly the tree (.....)
- Deux jours avant (.....)
Two days before (.....)
- Il y a longtemps (.....)
A long time ago (.....)
- Soudain la dame (.....)
Suddenly the lady (.....)
- Deux jours avant (.....)
Two days before (.....)
- Hier le boxeur (.....)
Yesterday the boxer (.....)

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This study was supported by the Planck Institut für Psychologie (Section) and by the Weissenborn, V. L. suggestions concerning

RESUME

L'objectif du présent travail est d'étudier l'impact de l'intensité du nombre restreint de contextes utilisés dans les phrases françaises. Pour cela, on a utilisé des phrases dotées de différents aspects temporels (verbes résultatifs instantanés ou au temps du passé qu'

14. Soudain le pot (tomber) par terre.
Suddenly the pot (to fall) down to the ground.
15. Souvent la bouteille (exploser) contre le mur.
Often the bottle (to explode) against the wall.
16. Il y a longtemps le bébé (jouer) avec sa balle.
A long time ago the baby (to play) with her ball.
17. Soudain la fillette (dancer) en riant.
Suddenly the little girl (to dance) while laughing.
18. Souvent le chaton (marcher) sur le bord du balcon.
Often the kitten (to walk) along the edge of the balcony.
19. Hier l'eau (couler) sur le parquet.
Yesterday the water (to spread) across the floor.
20. Soudain l'arbre (bouger) seul dans la campagne.
Suddenly the tree (to move) by itself across the field.
21. Deux jours avant le moineau (sautiller) sur la branche.
Two days before the sparrow (to skip) along the branch.
22. Il y a longtemps l'homme (caresser) son chien.
A long time ago the man (to pet) his dog.
23. Soudain la dame (taper) son tapis.
Suddenly the lady (to beat) her rug.
24. Deux jours avant le malade (trembler) de fièvre.
Two days before the sick man (to tremble) with a fever.
25. Hier le boxeur (frotter) son nez rouge.
Yesterday the boxer (to rub) his red nose.

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RESUME

L'objectif du présent travail est d'étudier, chez l'adulte et chez l'enfant à partir de sept ans, l'impact de l'interaction de certains types de procès exprimés par des verbes et d'un nombre restreint de contextes adverbiaux sur la sélection des flexions verbales du passé en français. Pour cela, on a fourni à des sujets de 7, 9, 11, 13 ans et à des adultes des phrases dotées de différents adverbes (souvent, soudain, hier...) et présentées avec deux catégories de verbes (résultatifs instantanés vs non résultatifs) à l'infinitif. Les sujets devaient écrire le verbe au temps du passé qui leur semblait le plus approprié. Les résultats révèlent un très net effet

des types de verbes et des contextes ainsi qu'une interaction entre ces deux facteurs. Les procès non-résultatifs s'associent majoritairement avec l'imparfait, alors que les procès résultatifs attirent des flexions correspondant à d'autres temps verbaux. "Souvent" induit l'emploi de l'imparfait, au contraire de "soudain". Les autres contextes n'imposent aucune flexion particulière. On relève ensuite une très forte interaction avec l'âge. Contrairement aux hypothèses, l'impact des types de procès n'est pas précoce. Il s'établit progressivement sans jamais avoir un poids aussi important que les contextes. Ce résultat est discuté en rapport avec la tâche à dominante métalinguistique.

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