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Prolegomena to ATAM acquisition. Theoretical premises and corpus labeling*

(work in progress)

1. A matter of clarification

Throughout this paper, we shall name the semantic domain to which we constantly refer by the acronym ATAM (i.e., Actionality / Temporal reference / Aspect / Modality). This involves a slight modification with respect to the usual practice, where the acronym TAM (less often ATM) is routinely used. As a matter of fact, and as it will soon become clear, the actionality category cannot be downplayed, considering its role in the semantics and acquisition of tense and aspect phenomena.

Note further, as our interpretation of the above acronym suggests, that we shall employ the term 'temporal reference' rather than 'tense'. This is a most important conceptual matter (even more than a terminological one), which needs to be duly stressed. In fact, one should best restrain the word 'tense' to the morphological categories to be observed in the specific languages, rather than to the semantic/cognitive domain of temporality. Take for instance the Romance Imperfect:[1] in its prototypical uses, this 'tense' conveys the aspectual value 'imperfectivity' and the temporal value 'past', i.e. it conveys both aspectual and temporal information. Consequently, it would make no sense to use the word 'tense' to indicate both a particular grammatical category (in our example, the Imperfect) and the temporality domain at large. Note, further, that the Romance Imperfect is no exception: it is in fact the rule. Any tense conveys both aspectual and temporal information, even though one of the two may be underspecified in one way or another. The German Preterite, for instance, conveys the temporal value

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[1] We follow here the convention of capitalizing the initial of tense denominations, to show that they are grammatical labels, independent of their default or contextual interpretation.

'past', but is aspectually underspecified for it neutralizes the values 'perfective' and 'imperfective'. Yet, in each context the language user may assign this 'tense' the relevant aspectual interpretation. Indeed, all the relevant semantic dimensions (actionality, temporal reference, aspect and mood) are necessarily detectable in each predicative utterance, although some oppositions may be neutralized, either because of lack of explicitness in the given language, or because of occasional contextual factors. In this paper, we shall thus systematically distinguish between 'tense' and 'temporal reference' (or 'temporal domain' and 'temporality', as the context suggests).

Finally, we would like to stress that our goal here is limited to L1 acquisition. In L2, things may differ considerably. The L2-learner masters the grammar of her/his native language and thus filters any new acquisition through an established competence. The L1-learner, by contrast, has no previous grammar to build upon, except of course for the universal predisposition to acquiring language, shared by all human beings. Even though one usually speaks in this context of 'universal grammar', this makes in our view no real difference, for this supposedly universal device does not contain any of the macroscopic grammatical structures to be observed in natural languages. Most likely, it only contains very abstract stuff, like recursion or the X-bar scheme: i.e., objects that are necessarily presupposed for any human language to work, whatever its concrete grammatical shape. This has important consequences for our goal, relating to the acquisition of ATAM structures. We would like to claim, in fact, that no ATAM category belongs to the universal endowment of human learners. Rather, these categories have to be developed out of the available linguistic input, obviously building upon our cognitive (hence, extralinguistic) endowment.[2] This is even more strikingly so, considering the extreme typological variability of human languages in the domain considered (actually, in any domain). More generally, we would like to claim that the postulation of the innate character for any macroscopic linguistic construct appears to be highly suspicious.

[2] A the reader may have noted, out view contrasts with that of Bickerton (1981) and Weist et al. (1984), according to whom the ATAM categories are deeply rooted in the innate competence (in Bickerton's terms: in the "language bioprogram").

2. The current model

The received knowledge in L1 acquisition studies is, and has been for some time now, that one between aspect or actionality (depending on the specific author and model) triggers and drives the acquisitional process. The temporal component, on the other hand, seems to play no role in the initial stage of ATAM acquisition. Indeed, a great deal of the ATAM acquisitional debate of the past two decades has revolved around the individuation of the triggering factor. Despite the risk of oversimplification, we may divide the main theoretical proposals in two subsets. Needless to say, the following classification is due, at least in part, to our own interpretation: yet, we believe it to be fundamentally fair.

(a) ASPECT PRIORITY: the pioneering work by Antinucci & Miller (1976), plus the "Aspect before tense H(ypothesis)" (Bloom et al. 1980), the "Defective tense H" (Weist et al. 1984), the "Aspect first H" (Wagner 1998);

(b) ACTIONALITY PRIORITY: the "Language bioprogram H" (Bickerton 1981), the "Basic child grammar H" (Slobin 1982/92), the "Prototype account" (Shirai & Andersen 1995; Andersen & Shirai 1996; Li & Shirai 2000).

(As noted above, the domain of temporality is not suggested as a triggering factor by any researcher in this field.)

Despite the differences that distinguish in detail each of the above quoted proposals, they all converge in suggesting a consistent system of correlations among the main semantic dimensions, as summed up in the following scheme:

(1) atelic verbs <---> imperfective tenses / ---> Present tenses
telic verbs <---> perfective tenses / ---> Past tenses.

These associations have been repeatedly assessed in a number of languages. As for the acquisition of English, consider at least, besides the above cited works, Tomasello (1992); as for Italian, Noccetti (2002); as for Turkish, Aksu-Koç (1988); as for German, Meisel (1985) e Behrens (1993); as for Modern Greek, Stephany (1985); as for Russian, Stoll (2001); as for Japanese, Cziko & Koda (1987) e Shirai (1998); as for Chinese, Li (1989); as for French, Meisel (1985) again.

Although this kind of interlinguistic convergence provides very strong evidence, it has long been observed that there seems to be a parallel, and indeed disturbing, convergence between the children's linguistic behavior and the behavior of the adults

interacting with them. This has been labeled the 'input problem' (cf. in particular Andersen and co-workers). The obvious countermove consists in detecting, at least at the initial stage, significant statistical deviations between the child and the caretakers, with subsequent gradual convergence towards the adult language target. This would be enough to prove that, although the caretakers' speech shares some important features with the speech of their children, there is no complete identity. The shared features may depend on some general tendency of human language and/or, crucially, on the effort by the caretakers themselves to simplify their language in order to be better understood. It should be stressed, however, that in order to really defend this point, a further step should be taken. Checking whether the child's speech gradually converges towards the adult target can only be the first step. The second step consists in making a further comparison between Child Directed Speech and Adult Directed Speech (henceforth, CDS and ADS), in order to see how sharply caretakers deviate from their usual linguistic behavior, namely to what extent conform to the child's behavior.[3] Unless one has an exact measure of this, it is difficult to assess the real meaning of any degree of convergence between the child and the respective caretakers. Unfortunately, however, the only work so far where CDS and ADS were systematically compared is Boland (2006). Thus, more research should be done in this direction.

Let us now return to the picture shown in (1), in order to analyze its theoretical implications. There is, indeed, a crucial consequence, which seems to have so far mostly gone unnoticed. By selecting one particular category (aspect or actionality) as the triggering factor of the acquisitional process, one is implicitly assuming that the given category is mastered in a close to mature way by the learner from the very beginning. This is, needless to say, never overtly stated by any scholar, except for the defenders of an extreme innatistic version of language acquisition (cf. Bickerton or Weist). Nevertheless, once this usually covert argument is made explicit, one has to admit that it has rather embarrassing implications. Most scholars would not be ready to endorse a view, suggesting that a particular linguistic dimension is fully mastered by the toddler, while all the other dimensions have to be build from scratch.

[3] Obviously, ADS is also often available to the child, at least indirectly. Therefore, it is also part of the child's linguistic experience.

Before elaborating an alternative hypothesis, it is fair to observe that the above picture is somewhat oversimplified and possibly unfair. The problem as sketched is implicitly present to the mind of the most scrupulous researchers and one might claim that it has received a tentative answer. Two positions deserve to be singled out in this connection: Slobin's "Basic child grammar hypothesis" and Andersen-Li-Shirai's "Prototype account". Slobin's proposal refers to the cognitive notions of 'state' and 'process', rather than to the linguistic categories that make up the domain of actionality. Hence, his view might be considered immune from our criticism, for he refers to a universal endowment of human beings, rather than to any specific grammatical component. While this is undoubtedly the case, a further problem arises: indeed, the original problem is merely pushed farther ahead, rather than solved. The point is that the cognitive notions alluded to by Slobin cannot be directly identified with actional categories in the proper sense. While 'state' and 'process' are universal cognitive notions, actional categories may be considered universal only as semantic prototypes, for their linguistic implementation is much less uniform than usually assumed. Compare a Slavic language like Bulgarian with Thai. In Bulgarian, virtually every verb is lexically specified for a/telicity, while in Thai all verbs are thoroughly underspecified in this respect (Jenny 2000). While these two languages may be regarded as the extreme poles in the typological range of variation, several intermediate cases could be described, suggesting a highly variegated picture. In fact, most (perhaps all) languages differ among themselves in at least some detail, as far as actional categories implementation is concerned. Consequently, unless one directly refers to the linguistically relevant notions that children have to acquire when learning a specific language, the mere appeal to universal cognitive prototypes is of little help in explaining how a specific language is acquired.

Andersen-Li-Shirai's model is the most detailed one so far proposed and one may assume that it was expressly worked out to answer these difficulties. It is thus definitely worth considering to what extent it succeeds in attaining its goal. The model rests upon the notion of prototype: "Children acquire a linguistic category starting with the prototype of the category, and later expand its application to less prototypical cases" (Shirai & Andersen 1995: 758). The prototype to which these authors refer is, needless to say, essentially summarized in (1). The model makes the following predictions. First,

the child associates to each linguistic form a cluster of prototypical semantic properties (specifically, actional ones). For instance, English Past forms are assigned the features [+telic] [-durative] [+result], while English (Present) progressives are assigned the features [-telic] [+durative] [-result]. This is simply the result of a probabilistic tendency: the child finds this sort of correlation in her/his input and is naturally inclined to assume that this belongs to the very nature of language. As a consequence, the child tends to use the different ATAM morphemes (or, rather, those available to her/him in the initial stages) only with verbs exhibiting the "corresponding" (so to say) actional features. Only later on, and gradually, s/he learns how to generalize the given morphemes to other verbs, which appear to be peripheral with respect to the semantic prototype. Andersen-Li-Shirai's model seems thus to elegantly cope with the problem raised above, not only by suggesting that toddlers do not have full mastering of the target morphology (an obvious observation), but most of all by showing how they gradually develop their own competence.

On a closer look, however, it turns out that this model does not really answer the crucial question raised above: namely, "does the child have an early consistent understanding of the linguistic categories supposedly working as triggers?". It rather provides an answer to another question, equally important and strictly related to the former one, but nevertheless different. Namely: "why is there such a striking correlation, in the learners initial production, between actional classes and the ATAM morphemes distribution?". We now know that this correlation is there because it exists in the input; children build upon it, so to say, by first pushing it to the extreme. The toddler's behavior is, in other words, strongly biased by the caretakers' example. As for the former question, however, Andersen-Li-Shirai are silent. They appear to imply that toddlers have an embryonic ability to exploit the essential actional information, even when dealing with languages which do not explicitly mark actional contrasts (Japanese), or do so in a far from systematic manner (English, Chinese). This, however, is far from obvious: whenever there is no overt evidence (i.e. there is no one-to-one form-meaning correspondence), one should not take for granted that the learner has a true knowledge of the intended linguistic categories. This is true in general, and even more so in the case of highly elusive categories such as the actional ones, which (apart from

prototypical examples) often appear to be hard to identify even for expert scholars, as Lenci & Zarcone (in press) have shown.

Summing up, Slobin's proposal as well as Andersen-Li-Shirai's model do not provide a viable solution to our problem, although for different reasons. Slobin's proposal is cognitively oriented, but linguistically rather vague. In order to make it linguistically interpretable, one should translate it into the usual grammatical (i.e., actional) categories, which is exactly where the problem lies. As for Andersen-Li-Shirai, they do speak of linguistically relevant categories, but assume without any prove that they are available as such to the learner. This, however, is highly debatable.

3. An alternative working hypothesis

There is, in our view, an alternative hypothesis which is worth exploring. One may assume that the learner forms at the beginning an inherently syncretic concept, where the main ATAM semantic dimensions (temporal reference, aspect, actionality) appear to be underdetermined and inextricably intertwined.[4] The acquisitional task would then consist in disentangling these dimensions, targeting the adults' behavior. In so doing, the learner has at her/his disposal, as an explicit source of information, no more than the lexical and morphological forms provided by the target language, to the extent that they exhibit some of the relevant contrasts (and to the extent that they are detected by the learner). When this does not occur, i.e. when the language does not provide explicit support in terms of form-meaning correspondences, the learner's task is very hard and demands more time and effort. To suggest an obvious parallel, consider the case of neutralized phonological or morphological oppositions, or the case of ø-morphemes. Learning these features is harder and more time-consuming than learning any systematic and overt opposition.

Let us see how the alternative hypothesis works. The child is presumably endowed with the ability to develop some important cognitive notions, that will in turn sustain his learning task. Whatever the nature of this innate endowment, one could

[4] In this paper, we disregard mood for the sake of simplicity; but of course, mood belongs to the main ATAM categories just as well.

reasonably assume that, in the specific case of the ATAM domain, the child is able to soon develop an intuitive understanding of the following contrasts:

'event' / 'no-event'

- 'state' / 'process';
- 'complete' / 'incomplete' event;
- 'now' / 'not-now'.[5]

Although these notions do not exactly mirror the content of actionality, aspect and temporal reference, they are obviously related to the latter linguistic categories. These, however, are not directly accessible to the toddler: s/he has to develop them on the basis of the available linguistic input. A viable assumption consists in admitting that, at the very initial stage, the child develops syncretic, rather than independent categories. For instance, s/he might develop the syncretic categories 'state∴incomplete-event∴now' vs. 'process∴complete-event∴not-now'. This would entail the conflation of the relevant ATAM dimensions. For that matter, it is likely that, at the very beginning, even the time and space domains are conflated, giving rise to the contrast 'here∴now' vs. 'not-here∴not-now'. As the child's linguistic experience develops, the initially syncretic categories are further analyzed. This, however, does not occur at once and may go through intermediate steps, attuned to the specific features of the target language. For instance, depending on the language to be acquired, the learner might first disentangle one or the other of the main categories, while the remaining ones would constitute a syncretic residue. Thus, in one instance temporal reference might be the first category to develop, so that actionality and aspect would be joined into a single syncretic category. In other cases, the syncretic residue might consist of aspect plus temporal reference, or actionality plus temporal reference.

Interestingly, this bears some resemblance with the way some languages have shaped themselves. In Classical Arabic, for instance, the dimension of temporal reference is not overtly marked in the verbal system. In this language, the temporal information is usually suggested, by way of pragmatic entailment, by the overtly marked aspectual oppositions, unless of course other explicit markers are used (such as temporal adverbs). Thus, in Classical Arabic temporal reference is by and large parasitic

[5] To these, one should at least add the contrast 'realis' / 'irrealis', belonging to the mood domain.

on aspect. Russian, on the other hand, is a language where aspect is parasitic on actionality. The basic contrast telic/atelic is vehicled by morpho-lexically explicit devices, while the original Ancient Slavonic aspectual oppositions (still preserved in Bulgarian) have entirely vanished. Consequently, the aspectual information is mostly obtained by inference through the explicit actional opposition of a/telicity (in traditional terms: 'perfective' vs. 'imperfective' predicates). Needless to say, the above discussion oversimplifies the matter. Our aim here, however, is not to show that the target languages are like some versions of the learners' language:[6] rather, we aim at suggesting that it is no wonder that L1 learners may build syncretic categories, since these seem to exist, to some extent, even in the target languages. But apart from this, things are significantly different. It would be implausible to state that Classical Arabic and Russian present, respectively, the syncretisms 'aspect∴temporal reference' and 'actionality∴aspect'. As noted above, in these languages (and indeed in many others) one category is parasitic on the other, rather than belonging to a mixed and poorly analyzed category. Indeed, mature speakers must be credited with the ability to cope with the basic contrasts implied by the three fundamental dimensions of actionality, aspect and temporal reference, for otherwise they would be unable to communicate the content of their own experience. The child's situation is obviously different. On the one hand, her/his cognitive maturation is not yet attained. On the other hand, s/he has to build the fundamental ATAM categories by gradually construing how the target language deals with this semantic domain: namely, which categories are overtly expressed and which categories are conveyed by covert (possibly, neutralizing) devices. In fact, learning the grammar of a language consists in acquiring a set of restrictions on how to shape the linguistic mirroring of human experience. Although the context will always preserve its relevance concerning the interpretation of any sentence, the relationship between linguistic expression and context appears to be mediated by specific sets of morphosyntactic devices, which predetermine the shape of the semantic space.

[6] We are not aware, in fact, of any language where the syncretism 'actionality∴temporal reference' is manifested. This, however, does not reduce the plausibility of our proposal. Some sort of syncretism might be less easily observed in real languages, yet present in the initial stages of language acquisition.

The alternative hypothesis makes thus the following predictions. At the initial stage, learners of all languages start up with a global, syncretic ATAM category, where the fundamental dimensions are mixed up, i.e.: 'actionality∴aspect∴temporal reference (∴mood)'.[7] The ensuing developmental stages may then differ according to the specific target language structure. This is a major departure from the current theory, which assumes a universally valid acquisition strategy. In the acquisition of Slavic languages, for instance, it is likely that the learner develops the most essential features of actionality earlier than any other ATAM feature, due to the explicit evidence available in the target language. This seems indeed to provide a viable interpretation for the observation put forth by Weist et al. (1984), to the effect that Polish children have a very early comprehension of the fundamental aspectual contrasts. In order to understand this claim, one should note that what Weist and co-workers call "aspect" should in fact be read as the composite actional-aspectual category (as a matter of fact, an actionality-prominent category), which is at work in all northern Slavic languages. Thus, rather than proving Weist and co-workers' claim, according to which "aspect" is innate in Polish learners, this simply proves that these speakers take advantage of the explicit morpho-lexical opposition exhibited by the target language. If this is correct, one should expect that, *mutatis mutandis*, something equivalent occurs in any language. For instance, in acquiring an aspect-dominant language, more specifically a language where aspect is overtly expressed while the other main ATAM categories are but poorly manifested, one should expect that the basic aspectual features are mastered before any other feature and thus drive the acquisition process.

Needless to say, in no case would any major ATAM category be completely inert in the acquisition process. The exact developmental path, however, would significantly differ according to the given language. As a matter of fact, postulating a single acquisitional strategy for all languages appears to be an instance of poor (or naive) universalism, based on a fundamental misconception. The universal endowment of human beings, as far as the language faculty is concerned, necessarily consists in much more abstract substance than any grammatical category, including the ATAM

[7] One might perhaps refer, here, to Tomasello's 'verb-island hypothesis', with its heavy emphasis on lexically-based learning. As a matter of fact, at the initial stage children use unanalyzed lexical materials, with no morphosyntactic specification.

ones (House et al. 2002). Each grammatical category, in its language-specific shape, has to be learned through exposure to actual data and thus undergoes the vagaries of language variability.

4. ATAM acquisition in Italian

Let us now apply the above sketched hypothesis to the case of Italian.

Italian presents no overt marking of actional features. These are lexically specified rather than morphologically marked. To the extent that a given verb is univocally interpretable in a given context, its interpretation rests entirely upon the speaker's lexical competence. Most verbs, however, may receive two or more actional readings, depending on the context. Thus, actionality is not a dominant category in Italian and is in part parasitic on aspect. For instance, with verbs that may receive a static or a dynamic reading (such as *collegare* 'to connect'), the most likely interpretation with a perfective tense such as the Simple Past is dynamic (i.e., 'to put in connection' rather than 'to keep connected'), unless the context suggests contrasting indications.

Aspect is partially marked. In the past domain, the Imperfect contrasts with the Simple and Compound Pasts along the imperfective/perfective divide. In addition, the Pluperfect and the Compound Future convey the perfect aspect with respect to a past and, respectively, a future reference time. The Compound Past, by contrast, is ambiguous: it may occasionally express the perfect aspect with present reference time, but it is often employed in the aoristic sense (namely, indicating pure perfectivity without further qualifications, just like the Simple Past). Other tenses are even more ambiguous. The Present and the Simple Future may be used both perfectively and imperfectively, although their aspectual inclinations diverge (statistically, the Present is more often imperfective, while the reverse occurs with the Future).

Temporal reference is to a large extent overtly marked. In the default case, the Present is present-referring, while the Imperfect, the Simple and Compound Pasts, and the Pluperfect are past-referring and the Simple and Compound Futures are future-referring. In actual facts, however, most tenses may receive alternative temporal interpretations. In fact, the only tenses that seem to receive an invariable interpretation,

from this point of view, are the Simple Past and the Pluperfect (unless the latter is used in a purely counterfactual sense). For instance, the epistemic use of the Simple and Compound Futures imply present-time-reference and past-time-reference, respectively:

(2) A quest'ora, *saranno* le 5.
It must be 5 o'clock now
(3) A quel punto, *saranno state* le 5.
By then, it must have been 5 o'clock

Although some of the non-default uses are not often proposed to the child in his initial learning stages, some of the tenses present a wide range of variability. This is partly the case with the Imperfect, which is often employed, in colloquial style, with hypothetical meaning, implying a sort of temporal displacement. The Present (namely, the most frequently used tense) is the most striking example of this. This tense is often used as past- or future-referring, and in addition it may be used in hypothetical or injunctive contexts, that is with strong modal coloring. Thus, although in Italian temporal reference is by and large the dominant category, the kind of evidence available to the child is far from univocal. If one then adds the aspectual and modal meanings, the evidence offered to the learner appears to be rather confusing. As an example, consider the following uses, all directly available to the child in the early stages of linguistic maturation:

(4)	Ora la bambola *dorme* 'Now the doll is sleeping'	[present-referr.; imperfective]
(5)	La mucca *fa il latte* 'Cows make milk'	[generic; imperfective]
(6)	Ed allora il babbo *dice*... 'And then father says...'	[past-referr.; perfective]
(7)	Dopo *gioco* con te 'Later on I play with you'	[future-referr.; perfective]
(8)	Ora lo *fai*, capito? 'Now you do it, right?'	[injunct.; fut.-referr.; perfective]
(9)	Se *vieni* qui... 'If you come here...'	[hypoth.; fut.-referr.; perfective?]

Incidentally, most of these uses are also available to the English Simple Present, showing that the situation described for Italian is far from idiosyncratic.

This brief sketch of the Italian ATAM system shows that the learner's task is indeed harder than often assumed. The evidence available to the child may be fairly intricate and even misleading. The ATAM system to be acquired often presents instances of ambiguity and neutralization. As a matter of fact, as claimed by Bertinetto (in preparation), all ATAM system, with no exception, are at least partially defective: none is thoroughly explicit with respect to all the most fundamental oppositions in all relevant domains, despite the small number of such contrasts. This suggests that the ATAM domain is plastic enough to allow speakers to cope with it by means of conventionalized pragmatic inferences, compensating for the lack of explicit morphological marking. Evidently, this semantic domain is sufficiently cohesive to justify the systematic exploitation of the principle of economy. In other words, speakers are clever enough to convey the bulk of their ATAM experience, as well as to understand the others' experience, even without resorting to an exhaustive system of morphological markers. The context's redundance and the existence of alternative lexical tools make this task accessible.

Obviously, if things are easy enough for the mature speaker, there is no doubt that the device is learnable. This, however, does not mean that the learner's task is easy. It is thus no wonder that many scholars have proposed that the acquisition process is driven by a universally fixed triggering factor. This sounds reassuring: the learner is supposedly endowed with a sort of cognitive pre-understanding of the data that paves the way for her/him. Yet, we believe that there is no evidence that a single developmental path is followed by all learners. A careful analysis of the data suggests that this is unlikely to be the case; and in fact the first explorations conducted by Bertinetto et al. (in press) on an Italian children speech corpus confirms that the received canon needs to be revised.

5. On labeling a child speech corpus.

5.1. Description of the corpus

In the remainder of this paper we would like to address a strictly methodological matter: namely, how to label a child speech corpus, so as to allow the researcher to draw

the correct information out of it. The observations put forth here stem from the experience of the present authors with an Italian sample.

The corpus collects the speech of three Italian children, Camillo, Raffaello and Rosa, and their caretakers, usually including the mother plus other adults (most commonly the investigator, the father, the grandmother). The data of Camillo have been collected by S. Noccetti, while the data of Raffaello and Rosa, available on the CHILDES database, are part of a corpus available at Institute Stella Maris of Pisa.[8] Camillo and Rosa have been annotated by SN, Raffaello by PMB. At all stages, the two investigators have met to cross-check the labeling procedure. This has sometimes involved extensive changes in the previously labeled materials.

The data collection period goes from the one-element stage (from about 17 months) to the age of more mature morpho-syntactic/semantic operations (see Table 1 for details). All the children were audio-recorded at least once a month; Rosa and Raffaello were also video-recorded. The recording sessions consist of spontaneous interactions between the children and the caretakers and mainly refer to daily routines, play situations, book-reading activities and telling stories.

Before the annotation of the three corpora, the transcripts of the recordings, in CHAT format (MacWhinney 2000), were checked by the two authors. Rosa and Raffaello's videos were also checked, to control the accuracy of the transcriptions and, whenever possible, to disambiguate the data through direct inspection of the actions performed at the moment of speech with respect to the interaction context. For Camillo, as a matter of fact, this step was at the same time impossible (for the interactions were not video recorded) and unnecessary (for the recording had been done by one of the authors, SN, who knew exactly how the interactions had occurred and had collected written notes).

The data are assembled in three different phases: pre-morphology, protomorphology (roughly, 1st period and 2nd period), and modularized morphology, which mark different steps in language development (see Dressler 1997; Dressler and Karpf 1995; Kilani-Schoch and Dressler 2002). The table below summarizes some

[8] We would like to thank the Institute Stella Maris for allowing the use of Rosa and Raffaello's data.

information in relation to the period of recording, and the time-interval of each phase for the respective child.

Table 1. Children studied

Children	Camillo	Raffaello	Rosa
Place of birth	Pisa Central Italy	Pisa Central Italy	Pisa Central Italy
Period of recording	2;0-3;6	1;07-2;11	1;7-3;3
Pre-morphology	2;00.10-2;02.05	1;07.07-2;05.13	1;07.13-1;10.08
Proto 1st p.	2;03.15-2;04.04		1;11.24-2;00.04
Proto 2nd p.	2;04.19-2;08.24		2;01.14-2;11.12
modular	2;10.05-	2;06.13-	2;11.30-

As is well-known, the mastery of language occurs not at once but in subsequent steps and the distinction of different phases aims at capturing, as much as possible, the relevant changes in children's output. Such distinction, of course, depends on the criteria adopted, which are relevant for a specific research goal and may vary when seen from a different perspective. In our research, the criteria adopted have so far been related to the morpho-semantic change in verb paradigms. According to previous studies (Dressler and Karpf 1995; Kilani-Schoch 2000; Kilani-Schoch and Dressler 2002; Bittner, Dressler, Kilani-Schoch 2003), the first phase of pre-morphology is identified with the period when the few verb forms occurring are rote-learnt words and sometimes child-specific (e.g., prosodic reductions, reduplications, simplifications and substitution; cf. Bittner, Dressler, Kilani-Schoch 2003). In this phase there are multifunctional and holophrastic words with an ostensible predicative function (cf. also Gillis and De Schutter 1986). We have decided to annotate these forms apart, since they are non-verbs used in predicative function. Although these forms decrease as children approach the morphological period, they do not disappear entirely, but gradually abide by the adult use. We have distinguished two types of non-verb forms according to their function: DESCRIPTIVE and EXHORTATIVE forms. The former are mainly nouns, prepositions, adverbs, onomatopoeia aiming at describing the position of an object (e.g.

sotto '(to be) under'; *terra* 'ground' for «(to be/go) down») or an ongoing/performed action (e.g. *ta*, i.e. the sound of a slap, for «he is hitting him»; *brum* for «car» / «the car is moving»; *pum* for «it fell down»; *più* 'more', for either «this object is not here any more» or «it does not work any more»). The latter are words used to express the will of the child (e.g. *fuori* 'out' for «I want to go out»; *io* 'I' for «I want to do it by myself»; *giù* 'down' for either «put it down» or «I want to go down»).

The transition from pre- to proto-morphology appears to be more controversial. In general, the proto-morphological phase shows a quantitative lexical enrichment which leads the child to formulate his/her first hypothesis on the input language and to move from single words processing to morphological patterns building. Relating to our research in ATAM acquisition, it is relevant to mark when (or, respectively, if):

a) The number of lemmas and types of verbs increases in number;
b) Miniparadigms emerge in the corpus, i.e. when two or more forms of the same verb (persons, number, tense, mood) appear in a single recording or in two successive recordings;
c) The very first (primitive) distinction perfectivity vs. imperfectivity emerges with different or the same verbs. In Italian, the earliest explicit opposition perfective vs. imperfective is expressed by the Present and the Participle, e.g. *rompo* '(I) break' vs. *rotto* 'broken'; *casca* '(it) falls' vs. *cascato* 'fallen'. To this aim, one has to identify any contrasts between state vs. process, complete vs. incomplete event, current vs. non-current actions.
d) The expression of perfectivity vs. imperfectivity is strictly (or predominantly) associated with telic verbs on the one side and activity/state verbs on the other. According to a wide-spread expectation, there should be rigid actionality-tense combinations at the earliest stages, so that imperfective markers should be found with non-telic verbs and perfective markers with telic ones.

It might be useful to divide this phase into two periods, considering that proto-morphology is a very intricate period with lots of changes in the child's morpho-syntactic interlanguage. Moreover, the phenomena from (a) to (d) show different degrees of complexity, which call for an increasingly mature cognitive capacity. When the child abandons the rote-learnt forms, data often show a transition period characterized by a slight increase of verb types and tokens. The lexical accumulation

leads towards the emergence of two forms for the same verb, either two different persons (e.g. 1st and 3rd) or two tenses/mood (e.g. Present and Infinitive, Present and Past, Present and Imperative). The verb forms, though, might still show the result of extra-morphological operations or be somehow deviant from the adult grammar, and be considered no true paradigms. Even in the presence of true adult-like mini-paradigms, showing the child's awareness of the morpho-syntactic characteristics of the language, there might still be no clear opposition between perfectivity and imperfectivity. The second period of the proto-morphological phase, by contrast, is characterized by quantitative and qualitative lexical enrichment (i.e. increasing number of lemmas and types) and by morphological operations more consistent with the adult grammar. The emerging mini-paradigms may show up to five verb forms in the same or very close recordings. They present different tenses which mark relevant temporal and/or aspectual contrasts.

The third phase should be characterized by:

a) The presence of epistemic and hypothetic values (in Italian, attached to the Present and the Future, as well as the Imperfect);
b) The mature expression of perfectivity and imperfectivity, no longer strictly (or predominantly) associated with telic verbs on the one side and activity/state verbs on the other. In general, and despite the strong correlations also to be found in the adult language, one expects more freedom in the actionality-tense combination, so that there should be more imperfective markers with telic verbs and perfective markers with stative and activity verbs.

One important problem is how to relate the acquisition of morphology to syntax and semantics acquisition. This problem is to a large extent theory-dependent. In order to work with as little prejudice as possible, one should independently mark any symptom of change in each major grammatical component. Thus, the periodization should best be done at both the morphological and the syntactic level, using criteria optimally suitable to each level. Besides, even at the morphological level, one should best find periodization criteria separately conceived for nouns and verbs, in order to see whether any of the two presents a better correlation with the observed linguistic maturation.

5.2. Annotation criteria

In the annotation procedure, we adopted a series of methodological cautions. In particular:

i) We made a constant effort not to over-interpret the data. We thus constantly distinguished between the very specific (i.e., contextually attuned) temporal and aspectual values, avoiding any preconceived value assignment. For instance, the Present of an activity verb has not been routinely interpreted as imperfective (this interpretation, on the other hand, has been reserved to the Present of stative verbs):

(10) a. perché ridete? [imperfective, progressive]
why laugh.2p?
'Why are you laughing?'

b. piove, piove, metto stivali [imperfective, generic]
rain.3s rain.3s put.1s on boots
'When it rains, I put on my boots'

c. si parla? [perfective]
3s.REFL talk.3s
'Shall we talk?' (scil. 'let's talk').

The Present tenses in (10) receive different aspectual readings, based on linguistic and extralinguistic information. In (10a) and (10b) we assigned the imperfective label, for the contexts showed that in (a) the action of 'laughing' was taking place at the moment of speech, and in (b) the reference was generic. In (10c), by contrast, the Present is used to make a proposal, i.e. express a future intention, and therefore its value was necessarily perfective. Needless to say, the latter example also carries a modal meaning, duly marked in the modality column.

Referring each item's interpretation to the actual context turns out to be very important for tracing back the acquisitional path of polyfunctional tenses, such as the Present in Italian. If for instance, at some early stage, a child uses the Present as a past-referring device with a much higher than normal frequency, the context-sensitive labeling of temporal values enables the investigator to trace back the trajectory followed by the child in approaching the adult's behavior. This kind of information would be undetectable in any reductionist analysis, assigning the Present a pre-specified value. Merely noting that, at the subsequent stage, the child's usage of the Past begins to rise would only provide partial information as to the actual acquisitional process.

ii) We adopted pre-theoretical criteria whenever this was suggested by the need to avoid any possible bias. This may easily happen with polyfunctional tenses or with verbs liable to multiple actional readings. For instance, with the Present tense of dynamic verbs we made use of the labels 'current /non-current' instead of 'imperfective/perfective'. Since the child's speech is often poor in linguistic information, the decisive factor is whether s/he refers to an event actually occurring at the speech time ('current'), or to an already occurred or soon to occur event ('non-current'). This enabled us to assign an aspectual interpretation even in the absence of a fully developed morphology. The methodological caution here consists in not assuming that the learner has a fully developed grammatical competence with respect to covert (i.e., morphologically non-marked) semantic values. Needless to say, at the appropriate stage of statistical computation, the labels 'current /non-current' have been translated into the usual labels 'imperfective/perfective'.

(11) a. chicco co a penna [current]
write.1s with filler pen
'I am writing with the pen'

b. Io scappo e te mi rincorri [non-current]
I run.1s off and you me run.2s after
'I will run off and you will run after me'.

In (11a) the child is commenting his action. The present tense of the dynamic verb *scrivere* refers here to an ongoing action and has been interpreted as 'current'. In (11b), instead, the verb is employed by the child to give instruction for a game to his mother. In this case, the action is not yet performed and refers to the future. We have therefore labeled it as non-current.

iii) Most importantly, in order to be as correct as possible in our evaluations, we directly checked the video-tapes. As a matter of fact, a given verb can acquire different temporal, aspectual and actional readings depending on the context. For instance, *fare* 'to do' may be used as an activity, as a state or as a telic predicate. The mere transcription of the verbal interaction is often inadequate to determine the actual interpretation; only direct inspection of the video-recordings can solve most

of the difficult cases. All unresolved cases were marked with a question mark and ignored in the statistical computations.[9]

iv) As for partitive constructions, they were separately annotated in the data-base relating to noun morphology (presently under revision). As a matter of fact, the partitive does not have any effect on the Italian verb morphology (e.g., it does not produce any actionality or aspect change). This may, however, occur in other languages, so that it is often necessary to mark this feature in the data-base.

Our data-base has the shape of an Excel file, whose columns refer to the following variables: A= child's name, B= session number, C= speaker, D= lemma, E= form, F= negation, G= actionality, H/I= tense**,** J= mood, K= aspect, L= (grammatical) person, M= number, N= gender, O= spontaneous, P= fiction, Q= error, R= clitic. Below we offer a detailed explanation. Each line entrance corresponds to one token. As said above, we devoted special attention to contextual information when we thought it was relevant for the understanding of both aspect and actionality values.

A) Child's name

The name of the three children in our corpus are: Camillo, Rosa, Raffaello.

B) Session:

This is the number of the recording session where the given item appears. Whenever two recordings were taken within one month, the data were conflated into a single session. For instance, Raffaello's fifth and sixth recordings were collapsed into "5-6".

C) Person:

There are four labels: ADS, CHI, MOT, OTH. ADS refers to adult-adult interaction. It is a kind of secondary input: the child may have access to it, although he is not directly addressed. Although quantitatively not impressive, this represents a useful sample to compare to CDS (MOT + OTH; see below). The remarkable

[9] As detailed above, the video-tape inspection was done with two children (Raffaello and Rosa). The third child could not be so inspected, because the verbal intercourse had only been audio-recorded. However, since the recording had been done by one of the authors (SN), the labeling was safe enough, due to personal memory and research notes.

advantage, with respect to other samples of adult speech, is that the adults engaged in the interactions are the same as those figuring in the corpus. However, the ADS component of our corpus might turn out to be insufficient for a meaningful statistical comparison: this point has still to be checked. A relevant methodological suggestion, for anybody collecting a new corpus, is thus to ask the caretakers to engage in a conversation among themselves. This would provide a highly desirable bench-mark. CHI obviously stands for Child's speech. MOT stands for child-directed mother's speech, while OTH stands for the child-directed speech of the other adults (i.e. other caretakers, the investigator(s) etc.). The distinction between MOT and OTH was motivated in our data more by the quantity of the mother's input than by its characteristics. In fact, although the mother's input is considered primary (cf. Barton and Tomasello 1994), it seems to us that the other caretakers' speech (esp. father, brothers and grandparents) does not substantially diverge.

D) Lemma:

This refers to the dictionary entry. We have sometimes added further linguistic materials (e.g., adverbs) or notes, to distinguish different actionality values of the same verb. For example, It. *andare* can be used in expressions such as *andare bene* ('to be all right'), which has stative meaning. This is also the case when *andare* means 'to function' or 'to be all right': in such cases, we annotated it as *andare/funzionare* (cf. Table 2). Needless to say, *andare* is mostly used as an activity or telic verb; in the latter case, it is usually accompanied by a goal-specifying prepositional phrase or adverb. Similarly, the actionality value of *fare* 'to do/make' largely depends on the context. We thus variously annotated *fare* as, e.g., *fare colazione* 'to have breakfast', *fare a cazzotti* 'to give punches', *fare di cognome* 'to have as surname', as well as *fare caus(ative)*, used in expressions such as "to have something done, to cause…".

Table 2. Lemmas and verb forms

Lemma	Form	Actionality
Andare 'go'	*è andato* 'has gone'	telic
andare bene 'be all right'	*va bene* 'is all right'	stative
andare/funzionare 'go/function'	*non va* 'does not function'	stative
fare colazione	*ha fatto* colazione	activity
fare cazzotti	*fare a cazzotti*	activity
fare (caus)	*faccio*	telic
fare di cognome	(surname +) *fai*	stative

E) Form:

Each form is reported as it appears in the recordings (cf. Table 2). We have sometimes annotated the words preceding or following the verb, in order to clarify the reasoning behind our aspectual and actional interpretation. Although our aim does not include the study of the phonetic forms, we faithfully reported the erroneous forms, adding the appropriate label in the error column (see below).

F) Negation:

This column is meant to mark the presence of negative contexts. In Italian, the negative adverb *non* does not have any effect on verb morphology, although negation may sometimes change the actional value of the verb.[10] This may occur with dynamic verbs, which are possibly turned into stative ones (e.g., *la nave parte adesso* 'the ship is leaving now' vs. *la nave delle 15 non parte più* 'the 3 p.m. ship does not leave any more'). In most cases, however, negation does not produce any actionality coercion (e.g., *ho / non ho costruito la casa* '(I) have / (I) have not built the house'). This type of data may be highly relevant in some languages, such as the Slavic ones, where verbs are directly affected by negation.

G) Actionality:

The labels used are: stative, *stative, activity, telic. Each label may be followed by a question mark, meaning that we were uncertain as for the actionality value of the given form, although we inclined towards one specific interpretation (cf. iii in §5.2). The label *stative suggests that the verb is not prototypically stative, for it admits the

[10] It is worth observing that Italian is a double-negation language. Thus, whenever another negative element occurs, the negative element *non* appears as well (e.g. *non viene mai* '(s/he) never comes').

Imperative (cf. *ricordati!*, *stai!*). This is a small but important subset of Italian verbs, with a clearly identifiable morpho-syntactical behavior.

We did not distinguish, however, between achievements and accomplishments within the class of telic verbs. The reason for this choice is twofold. On the one side, this distinction is often hard to make even with adult speech; on the other side, nothing seems to be gained by separating these two actional classes, as far as L1 ATAM acquisition is concerned.[11]

H/I) Tense:

The Italian indicative tenses are: Present (Pr), Simple Future (FT), Compound Future (FTC), Imperfect (IPF), Simple (PS) and Compound Past (PC), Pluperfect (PPF).[12] The Present and Imperfect progressive forms have been annotated as 'PrProg' and 'IPFProg', respectively. The voices are: active and (analytic) passive. We annotated the latter by adding the appropriate qualification immediately after the tense abbreviation (i.e. PrPass = passive Present, PCpass = passive Compound Past etc.).

In addition to the indicative, Italian presents other inflected moods, with the following tenses: Imperative (I); Present Subjunctive (SJPr), Imperfect Subjunctive (SJIPF), Past Subjunctive (SJPF), Pluperfect Subjunctive (SJPPF); Present Conditional (CDPr), Compound Conditional (CDC). Note that the forms of the Imperative and of the Present indicative may often coincide for the relevant persons (e.g. *mangia/mangiate!* 'eat (sg./pl.)' and *mangia/mangiate* 's/he eats/you eat'). We thus annotated the relevant forms as either I or Pr, according to the most probable contextual interpretation (see the appendix).

The non-finite tenses are: Simple Infinitive (inf), Compound Infinitive (InfComp), Participle (PT), Simple Gerundive (GR) and Compound Gerundive (GRC). We adopted a special convention to mark the instances where the Infinitive and the Participles are used as nouns ('Inf+Nom', e.g. *mangiare* 'eating(N)' and 'PT+Nom', e.g. *dopo mangiato* 'after eating(N)'). In addition to that, we have annotated the instances of the periphrases *essere a* + Infinitive 'to be at + Infinitive' in the Present (e.g., *è a lavorare*)

[11] Things may substantially differ, however, in L2 acquisition. We do not want to suggest that the choices adopted here are valid in both cases.

[12] Actually, there are two types of Pluperfect in Italian, but only one is present in our data. The second type is fairly rare in conversation.

and Imperfect (e.g., *eri a fare*) with the label PrProg2 and IPFProg2 respectively, as they represent an alternative form of *stare* + Gerundive.

Moreover we distinguished between Participles resulting from the deletion of the auxiliary verb in a Compound Past and Participles used as adjectives (Adj). This adjectival function is an important feature in ATAM acquisition for Romance languages. We distinguished, thus, between *(è) rotto* '(is) broken' and *(ha) rotto* '(s/he has) broken/broke'. In both cases, we annotated the form's gender and number. For instance:

Form	Actionality	Tense	Aspect	Gender	Number
Rotto 'broken'	telic	Adj	pf	m	s
Rotta 'broken'	telic	Adj	pf	f	s
Rotti 'broken'	telic	Adj	pf	m	p
Rotte 'broken'	telic	Adj	pf	f	p

J) Mood

In the column of mood we annotated the Indicative (Ind), Subjunctive (SJ), Conditional (CD), Infinitives (Inf), Participle (PT), Gerundive (GR) and Imperative (I). In addition, we annotated the epistemic use of the Future (epi) and the exhortative use of the Present (E). The epistemic use of the Future also has temporal import, for it does not refer to the future, but rather to the present moment (epistemic Simple Future) and the past (epistemic Compound Future).

K) Aspect:

In Italian, aspect is not always expressed by means of morphological devices, so that the aspectual values often need to be evinced from the context. Explicit marking of aspect occurs only in the Imperfect (imperfective by default), in the Simple Past (perfective by default) and in most compound tenses, which express the value 'perfect' (as a subspecies of 'perfective'). The notable exception is the Compound Past, which may be ambiguously used as either 'Present perfect' or as a barely 'perfective Past'. As already observed, the Italian Present tense is rather problematic with dynamic verbs. We thus labeled 'C' (for 'current') the verb forms indicating an action taking place at the moment of speech, 'NC' (for 'non-current') those referring to non-ongoing actions,

either past- or future-referring. In addition, we used the labels 'G' (generic), 'E' (exhortative) and 'H' (hypothetical), depending on the specific interpretation suggested by the context. Finally, we employed the label 'P' whenever the Present was used as past-referring, with the further specification 'P-IPF' to mark the misuse of the Present instead of the Imperfect.[13]

Dependent Infinitives, preceded by either a modal or the causative verb *fare* ('do/let/make') were marked by the label 'dep' and thus distinguished from free infinitives (marked as 'x'), i.e. those only preceded by a preposition, because this may be relevant for syntactic acquisition.

Finally, we added a question mark whenever we were uncertain as for the aspectual value (these records were obviously ignored in the statistical computations).

L/M/N) Person/number/gender

In column L we used the labels '1, 2, 3'. In column M we used 's' and 'p' for singular and plural. In column N we used the labels 'm' for masculine and 'f' for feminine. Thus, with Participles, which (in the relevant syntactic context) carry the agreement features of gender and number, we marked labels in both M and N (e.g., ms, fp). We further adapted the annotation to the Italian data, adding a specific labels' combination (namely, 3s/1p or 3p/1p) in column S, to indicate the use of 3s or 3p preceded by '*si*' as standing for 1p (i.e., *si fa/si fanno* '*si* do.3s/3p' for *facciamo* '(we) do-1p'). This is a distinctive feature of the Tuscan variety to which our three children were exposed. Finally, we annotated (in the same column) as '3s/imp' or '3p/imp' the purely impersonal use of 3s and 3p forms.

It should be remarked that any such double marking is liable to double treatment. It may either be treated as a self-contained subcategory, or be collapsed with one of the composing categories (e.g., '3s').

O) Spontaneous

S and NS are the labels used to annotate the spontaneous vs. non–spontaneous utterances.

[13] This, however, might not have been the best choice, since the label 'P' refers to the temporal, rather than the aspectual domain. The obvious alternative would be to have two separate columns for 'tense' and 'temporal reference'.

P) Fiction

We distinguished two types of interaction situations. If the verb reports an event in a fictional situation (either a tale or a picture/photo description), it is marked a 'F', with 'NF' otherwise. This is relevant, because some differences might emerge in the use of verb forms as the child matures (cf. the use of the Imperfect in play situations by Italian children, which emerges at a somewhat intermediate developmental stage).

Q) Error

The different labels used here refer to the different types of errors produced by the children. We found omissions of auxiliary verbs (Eomis), errors caused by the wrong selection of auxiliary verbs (Eaux), occasional errors in lexical selection (EL; e.g., *imparare* 'to learn' instead of *insegnare* 'to teach'). Errors were also detected in tense (ET), mood (Emood), person(EP), gender (EG), number (EN). We used the label 'ESM' for 'superstable' markers, whereby the suffix *–i* is used as a kind of default 2s marker (e.g., *alzi!* 'stand up!' instead of *alza!*), and the label 'Eiper' for regularizations of irregular paradigms (e.g., *aprito* as Participle of *aprire* 'to open' instead of the correct irregular form *aperto*). When more than one type of error was found in a occurrence, we listed both errors (e.g., EG+Eomis, EL+Eomis). Correct occurrences were marked with NE (non-error), while purely phonetic errors were signaled by 'E-'.

We decided, by contrast, to ignore minor types of errors produced by mothers and children (especially Rosa and her mother) whenever they represented usual forms in the local dialect, although they depart from Standard Italian (e.g., *sentano* instead of *sentono* for the III class verb *sentire* 'to hear', mistakingly conjugated as *mangiano* from the I class verb *mangiare* 'to eat').

R) Clitics

As a typical feature of Italian, clitic pronouns are often attached to non-finite tenses: the Imperative (e.g., *mangialo* 'eat it'), the Participle (e.g., *mangiatolo* 'eaten it'), the Infinitive (e.g., *mangiarlo* to eat-it') and the Gerundive (e.g., *mangiandolo* 'eating it'). These pronouns are worth annotating either because they represent an evolution in

morphological and syntactic competence or a development in verb phonotactics.[14] Moreover, we marked the instances of the pronoun *'si'* in either in the impersonal use of the verb or the Tuscan use of 3s and 3p as standing for 1p (see above sect. L,M,N).

6. Conclusion

Obviously, the complete demonstration of the hypothesis proposed in sect. 3 above needs more data from a wide range of languages, and a joint effort by several scholars sharing the essential methodological and theoretical premises. One needs, in other words, a typologically oriented international enterprise, whereby languages with the most diverse morphological characteristics are compared. Ideally, one should compare the acquisitional process in temporally-dominant languages, aspectually-dominant languages, and actionality-dominant languages, as well as various combinations of these ideal types.

The annotation procedures described in the second part of the paper are explicitly devised with this goal in mind. The labeling needs thus to be explicit enough to allow cross-linguistic comparison. Most importantly, it has to be as context-sensitive as possible, in order to allow the investigator to detect any hint at the hidden effect of the grammatical categories "under construction" by the child. As underlined above, this is a very delicate problem. The child develops her/his ATAM competence out of an initially syncretic proto-category. Which particular category (or categories) will take the lead in the acquisitional process depends entirely on the morphological structure of the target language. Our claim is that the specific ATAM prominence of the target language plays the decisive role. For instance, actionality-prominent languages, providing (e.g.) overt marking of the telic / atelic contrast, offer the learner concrete support in her/his category-disentangling procedure. When the acquisition process is completed, however, all major categories will be active in the speaker's competence, although with varying degrees of explicitness. Some categories might be fully developed, up to the most subtle nuances, due to the morphological support provided by the learned language. Some might, by contrast, remain latent, inasmuch as they are not overtly expressed. The latter categories will thus only have a marginal presence to the speaker's competence. Yet,

[14] The other pronouns, which are tonic and not attached to the verb, have been analyzed independently in the tables regarding nominal morphology.

even in this case the fundamental semantic oppositions will be latently at work. As suggested in Bertinetto (in preparation), these fundamental oppositions are the following: perfective / imperfective for the aspectual domain; past / present / future for the temporal domain; telic / atelic and stative / dynamic for the actionality domain; realis / irrealis for the modal domain. Although possibly neutralized in a given language, i.e. conveyed by ambiguous 'signifiants', they will be accessible to the speaker whenever the context is sufficiently interpretable, for they appear to correspond to primary cognitive needs. The specific (and subtle) interplay between our basic cognitive capacities and the actual grammar of the native language(s) is an essential part of the human (pragma-)linguistic competence.

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Appendice

Name	Record	Person	Lemma	Form	Neg	Actionality	Tense		Mood	Aspect	Pers	Num	Gender	Spontan.	Fiction	Error	Clit	Pers/Numb
Camillo	2	OTH	rompere	rotto		telic	Adj	Adjective	PT	pf	x	s	m	S	NF	NE	x	x
Camillo	9	MOT	andare	sarà andata		telic	FTC	compound future	epi	pf	3	s	x	S	NF	NE	x	x
Camillo	1	OTH	vedere	vedere		*stative	Inf	infinitive	Inf	S	x	x	x	S	NF	NE	x	x
Camillo	24	MOT	fare	stava facendo		activity	IPFProg	imperfect progressive	Ind	ipf	3	s	x	S	F	NE	x	x
Camillo	18	MOT	spengere	è stato spento		telic	PCPassive	compound past passive	Ind	pf	3	s	x	S	NF	NE	x	x
Camillo	25	MOT	trovare	trovò		telic	PS	simple past	Ind	pf	3	s	x	S	NF	NE	x	x
Camillo	14	CHI	ferire	fu ferito		telic	PSPassive	simple past passive	Ind	pf	3	s	x	NS	F	NE	x	x
Camillo	14	CHI	uccidere	ucciso		telic	PT	past participle	PT	pf	x	s	m	NS	F	Eomis	x	x
Camillo	21	CHI	mangiare	dopo mangiato		activity	PT+Nom	past participle noun	PT	pf	x	s	m	S	NF	NE	x	x
Camillo	10	MOT	vedere	vedessi		stative	SJIPF	imperfect subjunctive	SJ	ipf	2	s	x	S	NF	NE	x	x
Camillo	2	OTH	guardare	non si guarda	neg	activity	Pr	present	Ind	NA	3	s	x	S	NF	NE	Clit	x
Camillo	24	CHI	mangiare	mangiava		activity	IPF	imperfect	Ind	P	3	s	x	S	F	ET	x	x
Camillo	21	CHI	trovare	e trovato		activity	PC	compound past	Ind	pf	1	s	x	S	NF	Eaux	x	x
Camillo	21	CHI	aprire	*ho aprito		telic	PC	compound past	Ind	pf	1	s	x	S	NF	iper	x	x
Camillo	22	CHI	colorare	colorali		activity	I	imperative	I	pf	2	s	x	S	NF	NE	Clit	x
Camillo	28	CHI	cogliere	si coglie		telic	Pr	present	Ind	G	3	s	x	S	NF	NE	Clit	3s/imp
Camillo	27	CHI	fare la spesa	eri a fare		activity	IPFProg2	Perifrasi progressiva ipf	Ind	ipf	3	s	x	S	NF	NE	x	x
Raffaello	11	MOT	volere	avrebbero voluta		stative	CDC	compound conditional	CD	pf	3	p	x	S	NF	NE	x	x
Raffaello	14	MOT	dovere	dovresti		*stative	CDPr	present conditional	CD	H	2	s	x	S	NF	NE	x	x
Raffaello	10	MOT	essere	sarà		stative	FT	future	epi	ipf	3	s	x	S	NF	NE	x	x

Raffaello	14	OTH	attaccare	attaccando		telic	GR	gerundive	GR	ipf	x	x	x	S	NF	NE	x	x
Raffaello	11	MOT	mangiare	mangiare		telic	Inf+Nom	infinitive noun	Inf	x	x	x	x	S	NF	NE	x	x
Raffaello	11	OTH	accarezzare	essere accarezzato		activity	InfComp	compound infinitive	Inf	pf	x	x	x	S	NF	NE	x	x
Raffaello	14	ADS	distruggere	essere distrutti		telic	InfPassive	passive infinitive	Inf	S	x	x	x	S	NF	NE	x	x
Raffaello	5/6	CHI	essere	a		stative	IPF?	imperfect?	Ind	ipf	3	s	x	S	NF	E?	x	x
Raffaello	2	OTH	guardare	abbiamo guardati		activity	PC	compound past	Ind	pf	1	p	x	S	NF	NE	x	x
Raffaello	9	OTH	mettere	è messo		telic	PrPassive	present passive	Ind	x	x	s	m	S	NF	NE	x	x
Raffaello	12	CHI	guardare	sto guandando		activity	PrProg	present progressive	Ind	A	1	s	x	S	NF	E-	x	x
Raffaello	13	MOT	sentire	abbia sentito		*stative	SJPF	past subjunctive	SJ	pf	3	s	x	S	NF	NE	x	x
Raffaello	11	MOT	vedere	avessi visto		stative	SJPPF	pluperfect subjunctive	SJ	pf	2	s	x	S	NF	NE	x	x
Raffaello	10	CHI	mangiare	mangia		telic	Pr	present	Ind	P	3	p	x	S	F	ET+ EP	x	x
Raffaello	15/17	MOT	fare	sono a fare		activity	PrProg2	Perifrasi progressiva pr	Ind	A	3	s	x	S	NF	NE	x	x
Rosa	9/10	CHI	togliere	tolli		telic	I	imperative	I	pf	2	s	x	S	NF	E-	x	x
Rosa	2	CHI	dare	dai		telic?	I?	imperative?	I	pf	2	s	x	S	NF	E?	x	x
Rosa	21	CHI	essere	era		stative	IPF	imperfect	Ind	ipf	3	s	x	S	NF	NE	x	x
Rosa	5	MOT	suonare	aveva suonato		activity	PPF	pluperfect	Ind	pf	3	s	x	S	NF	NE	x	x
Rosa	9/10	ADS	chiamarsi	si chiama		stative	Pr	present indicative	Ind	ipf	3	s	x	S	NF	NE	Clit	x
Rosa	12	CHI	attaccare	attacca		telic	Pr?	present?	Ind	pf?	3	s	x	S	NF	NE	x	x
Rosa	2	ADS	mettere	se le metta		telic	SJPr	present subjunctive	SJ	pf	3	s	x	S	NF	NE	Clit	x
Rosa	18/19	MOT	avere	non ho	neg	stative	Pr	present	Ind	ipf	1	s	x	S	NF	NE	x	x
Rosa	6/7	MOT	fare	sto facendo un gatto		telic	PrProg	present progressive	Ind	A	1	s	x	S	NF	NE	x	x
Rosa	12	MOT	guardare	si guarda		activity	Pr	present	E	E	3	s	x	S	NF	NE	Clit	3s/1p
Rosa	6/7	MOT	cuocere	cotta		telic	Adj	present	PT	pf	x	s	f	S	NF	NE	x	x
Rosa	11	MOT	fare la guardia	fa la guardia		activity	Pr	present	Ind	G	3	s	x	S	NF	NE	x	x

Rosa	3	MOT	cascare	se caschi		telic	Pr	present	Ind	H	2	s	x	S	NF	NE	x	x
Rosa	16	CHI	piangere	ciange		activity	Pr	present	Ind	P-ipf	3	s	x	S	NF	ET	x	x
Rosa	18/19	CHI	volere	no(n) voja(no)?	neg	stative	Pr	present	Ind	ipf	3	p	x	S	NF	Eclass	x	x
Rosa	9/10	CHI	entrare	è tato		telic	PC	compound past	Ind	pf	3	s	x	S	NF	EG	x	x
Rosa	21	CHI	vedere caus	non vedere	neg	stative	I	imperative	I	pf	2	s	x	S	NF	EL	x	x
Rosa	18/19	CHI	imparare	mpara(to)		telic	PT	past participle	PT	pf	x	s	m	S	NF	EL+Eomis	x	x
Rosa	11	CHI	cascare	è cate		telic	PC	compound past	Ind	pf	3	p	x	S	NF	EN	x	x