Participial Sentences:
Temporal interpretation of bare sentences in Tunisian Arabic

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The aim of this paper is to provide an explanation for the alternating interpretation of *participial sentences* in Tunisian Arabic. Tunisian Arabic has main sentences whose predicate can either be a finite verb (with explicit temporal morphology[1]) or a participle[2]. What is of special interest about this phenomenon is that sentences whose predicate is a participle receive two possible temporal interpretations: some verbal classes, roughly corresponding to Vendler's (1967) *accomplishment* or *achievement* predicates, yield a past interpretation (similar to English *present perfect*); while other classes that approximately corresponds to *stative* and *activity* predicates, receive a present interpretation (similar to English *present continuous*). This work addresses two fundamental questions related to the phenomenon summarized above:

I) what properties differentiate predicates belonging to each class of interpretation, and

II) why the two possible temporal interpretations of participial sentences correspond exactly to present perfect and present continuous.

I propose that the answers to both questions stems from one principle if we adopt an articulated structure of the VP area in the style of Ramchand's (2008) work. Since participial sentences present no explicit temporal morphology, I suggest that they are bare sentences, similarly to Déchaine's (1991) proposal, whose temporal coordinates derive from the intersection of the event structure internal chronology with the moment of speech.

Keywords: Bare sentences, Active Participles, Event decomposition, VP structure, Telicity.

1. Introduction

The extensive use of active participles in spoken language is a feature shared by most Modern

1 See Eisele (1988) for a detailed presentation of the finite paradigms in Arabic.

2 Both active and passive participles can function as main verbs. In this paper I will only investigate the use of the former type as predicate of participial sentences.

Arabic Dialects (Brustad, 2000 a.o.). I will call a sentence like (1), whose main verb is an active participle, a *participial sentence*.

1) Mariem kɛtba qiṣaṣ[3].
Mariem write.AP.F.SN tales
Mariem has written some tales.

As we can see the predicate *kɛtba* presents nominal morphology, as it agrees with the subject *Mariem* in gender and number. Participial predicates, furthermore, show no person feature. The participle is the only visible verbal element in the sentence and, in the case under discussion, the sentence is necessarily interpreted in the past.

Tunisian Arabic Active have a dual nature, both nominal and verbal, and retain properties of both lexical classes. As a consequence of this dual nature, they can also function as regular NPs and appear in all contexts in which nominal forms are expected. For example a participle can be the second element of an equational sentence built in a construct states ("writer of tales"), as it happens in the following example:

2) Mariem kɛtba**t** qiṣaṣ.
Mariem write.AP.F.SN tales
Mariem is a **writer of tales**.

The interpretative difference between the two examples at hand, (1) & (2), reflects the difference between the following structures in which the sentence in (1) corresponds approximately to (3a) and the sentence in (2) corresponds to (3b).

3) a. [Mariem [$_{VP}$ kɛtba [$_{DP}$ qiṣaṣ]]]
b. [$_{IP}$Mariem [$_{SC}$ Ø [$_{DP}$ t$_{M}$] [$_{DP}$ kɛtbat qiṣaṣ]]

While in (3a) the participle merges in the head of the VP, in (3b) it merges in the complement position of a copular structure (Moro, 1997). Since Tunisian Arabic, as all Arabic varieties, does not have an overt copula in present tense non-negative equational sentences, the two structures are quasi-identical in their surfacing output.

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3 The abbreviations used in the text are the following:

AP	Active Participle	NEG	Negation
DUAL	Dual	PERF	Perfective
F	Feminine	PL	Plural
IMPERF	Imperfective	PREP	Preposition
M	Masculine	SN	Singular

However they are not exactly the same: in a construct state the feminine possessor NP (as *ketba**t*** in (2)) retains a "t" ending sound which is obligatorily pronounced. The /***t***/ is a residue of the morpheme encoding feminine+case and is pronounced only in contexts where two NPs are "bounded", that is when they are part of the same DP.

I will adopt the presence/absence of /***t***/ as a diagnostic marking the structural difference underlying participles in their nominal vs verbal use. Thus, the example presented in (2) illustrates that participles can have a full nominal status and appear in all the contexts in which regular NPs are found (as in *kɛtba**t** qiṣaṣ* "writer of tales"); while the example in (3) shows that a participle can also be a verbal element and function as the only predicate in a sentence (as in *kɛtba qiṣaṣ* "she wrote tales").

Bearing in mind the dual nature of participles, we can now move on to the analysis of participial sentences, which are the focus of this paper.

2. The interpretation of active participles in root sentences.

Tunisian Arabic participial sentences receive either of two possible temporal interpretations; either they convey a past time reference (comparable to English present perfect) as in (4), or they yield a present reading (comparable to English present continuous) as in (5):

4) ʿAli dɛhin barša diar.
Ali paint.AP.M.S many houses
Ali **has painted** many houses.

5) ʿAli sɛig l-adjmal li-l-bir biš yšrubu l-ma'.
Ali lead.AP.M,S the-camels to-the-well so.that drink.IMPERF.3.M.PL the-water
Ali **is leading** the camels to the well so that they drink water.

The temporal interpretation of participial sentences alternates in a systematic way that goes beyond an occasional contextual effect. Tunisian Arabic participial predicates, in fact, can be subdivided into two classes: those which are consistently interpreted as past and those which are consistently interpreted as present.

Another interesting fact about these constructions is that their temporal interpretation cannot vary

on the basis of the contextual information. In fact, if the temporal content introduced by the context were able to affect the temporal reading of a participial sentence, then participial predicates could occur freely with temporal adverbs of all kinds. However this is not the case and participial sentences are compatible only with certain adverbial phrases as we can see in (6) and (7).

6) *ʿAli l-berah meši il-maṣr.
Ali yesterday evening go.AP.M.SN to-Egypt
Intended meaning: Ali **had gone/has been going** to Egypt yesterday evening.

7) ʿAli *ġudua* meši il-maṣr.
Ali tomorrow go.AP.M.SN to-Egypt
Ali **is going** to Egypt tomorrow.

What we can observe is that verbs belonging to the present continuous class of interpretation are compatible with *ġudua* 'tomorrow', or similar temporal expressions, but not with a past time reference adverb like *l-berah* “yesterday evening”. Consequently, we can conclude that participial sentences, as showed by the contrast above, encode their own temporal content.

One of the goals of this research is to understand how tense in conveyed in a participial sentence. There are two possible approaches to the issue: either participial sentences are fully articulated sentences whose temporal projections bear unrealized but interpretable features, or participial sentences are bare sentences (similar to Déchaine, 1991) and their impoverished morphology causes the temporal information to be encoded in the syntactic structure of the VP. In this work I will explore the strengths of this second hypothesis and its consequences.

2.1 The boundedness criterion

In the previous section it was observed that participial sentences are either interpreted as present continuous or present perfect. This distinction is systematic and allows the subdivision of participial predicates in two classes but the criterion on which this distinction is based needs to be identified. Brustad (2000) proposes that telicity is the feature determining the temporal interpretation of participial sentences in the way that follows:

Table 1.

+ bounded event:	PRESENT PERFECT READING
– bounded event:	PRESENT CONTINOUS READING

Table 1 represents an appealing proposal which has interesting parallels in some of the so called non-tensed language like Haitian Creole (Dechaine, 1991) or Fɔngbe (Avolonto, 1992). Nonetheless the direct correlation between boundedness and past tense does not match the interpretative effect of participial sentences in Tunisian Arabic.

For example, Kratzer (2004) and Borer (2005) propose that there is a one-to-one correspondence between the presence of a quantized direct object (DO) in certain verbal classes and the [+telic] feature. A simple syntactic diagnostic like the one presented in (8) and (9) shows that there is indeed a difference in terms of the boundedness between the two sentences and that such difference is associated to the properties of the DO.

8) Kate drank milk *in five minutes/for five minutes.
9) Kate drank a litre of milk in five minutes/*for five minutes.

If Tunisian Arabic participial sentences were sensitive to telicity their temporal interpretation would vary along the change in the quantisation properties of the DO. However this is not the case: quantized direct objects do not determine a distinction between the past and the present reading in participial sentences and the two example in (10) and (11) receive the same temporal interpretation.

10) Semi mɛkil couscousi. Unbounded
Semi eat.AP.M.SN couscous
Semi **has eaten** couscous.

11) Semi mɛkil djeğa kɛmla. Bounded
Semi eat.AP.M.SN chicken whole
Semi **has eaten** a whole chicken.

Both (10) and (11) are interpreted in the past even though the former is unbounded indicating that Brustad's generalization, the boundedness criterion presented in Table 1, does not account for the difference between participles interpreted as past events and participles interpreted as present continuous.

On the basis of these facts the bounded criterion should be dismissed and a new criterion is needed. I would like to suggest an alternative way to look at the problem which takes off from Ramchand's

(2008) work. Her verbal taxonomy classifies predicates on the basis of their event internal decomposition. This implies that predicates sharing similar behaviours (e.g. all participial predicates interpreted as present continuous) also share something in their VP structure. In the next section I'll illustrate how Ramchand's proposal can provide a valid framework on which to analyse the issue of participial predicates temporal interpretation.

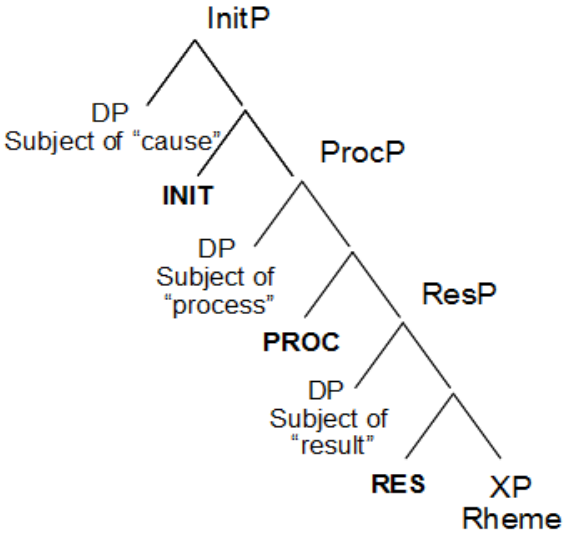
3. Ramchand's sub-event syntax

Since Dowty (1989) it has been questioned whether classic thematic relations and their hierarchical organization meet the desirable level of explanatory adequacy. This consideration is motivated by the existence of cases in which predicates that share the same θ-structure do not behave similarly in other respects. For instance, transitive verbs like 'to push' and 'to park' assign a θ-structure of the kind <Agent, Theme> but behave differently with respect to telicity.

12) Mary pushed the cart for one minute/*in one minute.
13) Mary parked the car in one minute/?for one minute.

To avoid asymmetries like the one presented in (12) and (13), Ramchand (2008) proposes an alternative criterion to classify predicates which is based on the decomposition of the event. She shapes her proposal on the idea that a classification of predicates that truly reflects the natural data must be based on empirically motivated primitives like telicity, dynamicity and causativity (see also Grimshaw, 1990). The identification of such primitives is connected to the identification of thematic relations. The two domains, in fact, depend on each other since the event participants are only interpreted via the structural position they occupy within the VP and such structural positions are identified on the basis of the primitive principle that each encodes.

Each primitive corresponds to a thematic relation encoded by a specific head. The diagram in (14) represents the sub-event's syntactic organization she proposes. In this representation the primitives mentioned above motivate the existence of the various projections which form the VP.



14) (Ramchand, 2008, pg 39)

The tree in (14) reflects an analysis of the VP structure in the spirit of Rizzi (1997) and Pollock (1989). Similarly to what they proposed for the CP and the IP projection, Ramchand's proposal dismiss the use of a single verbal head in favor of multiple projections which are all verbal in nature. The first primitive that Ramchand explores is *causation*. The syntactic category associated to the notion of causation is *initiation*. The *initiator* is the role assigned to the DP placed in the Specifier position of the InitP, the initiation projection. Such DP corresponds to the "*entity whose properties/behaviour are responsible for the eventuality coming into existence*" (Ramchand, 2008, p. 24).

The second role analyzed by Ramchand is the *undergoer*. She adopts Van Valin's (1990) proposal which considers the undergoer as the DP bearing the change or the transition denoted by the dynamic sub-event. Therefore the undergoer is hosted in the Specifier of Process Phrase (ProcP), the projection encoding the primitive notion of dynamicity. The undergoer is logically and chronologically subordinated to the initiator, therefore the former projection is dominated by the latter. The presence of a ProcP is motivated by the existence of dynamic sub-component of the event. However the presence of this processual component does not entail that the process will attain its final state. Therefore the structure reflects the intuition that telicity and dynamicity are independent concepts.

Ramchand doesn't identify a projection which carries a feature [+ telic]. Telicity, in fact, is claimed to be not a feature but an interpretative effect depending on factors like the presence of quantized direct objects or goals of motion. However, her system provides a projection encoding the result sub-event (ResP), which is the closest thing in terms of syntactic representation of temporal boundedness. ResP sub-events are a sub-component of predicates indicating the attainment of a final state. The DP holding the final state fills the Specifier position of the ResP and is assigned the role of *resultee*. Again, such notion is subordinated chronologically and logically to the previous two, which dominate it in the way presented in (14).

Finally, all complement positions of event sub-eventualities are rhemes. Rhemes can be either DPs, a PPs or APs:

15) Kathrine fears nightmares.
16) Kathrine is in her room.
17) Kathrine is happy.

A rheme may provide a temporal boundary for some classes of dynamic events (e.g. creation/consumption verbs in section 2) and in this case they are defined as 'paths'. I will come back on this definition in section 5.

4. Event structure and the interpretation of participial sentences.

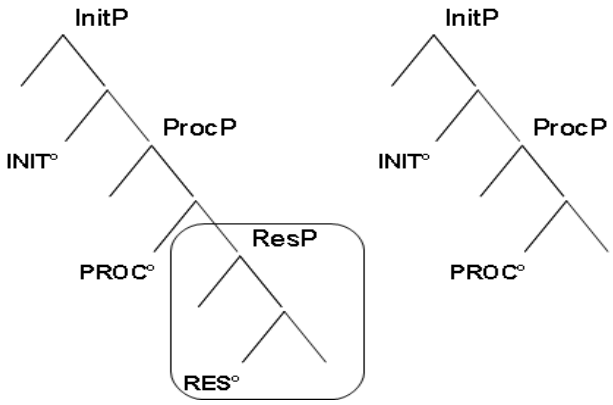
I would like to propose that the decomposition of the event structure illustrated in section 4 accounts for the alternation in the interpretation of participial sentences. I will do it by steps exploring first the possibility that such phenomenon is connected to the presence/absence of one specific sub-eventuality, ResP.

This hypothesis is summarized in Generalization 1:

GENERALIZATION 1:

a. *Presence of a ResP* → Present perfect reading. b. *Otherwise* → Present continuous reading.

a. b.



On the basis of this generalization a verb like *mnaggi* 'to pick', which presents an event decomposition of the kind Init/Proc/ResP in (a), is predicted to receive a present perfect interpretation and a verb like *sɛig* 'to lead" is predicted to receive a present continuous interpretation since it presents a partition of the kind Init/ProcP in (b).

The examples in (18) and (19) show that the prediction is borne out with respect to both verbs.

18) eš-širik mnaggi ez-zeituna.
the-farmer harvest.AP.M.SN the-olives.
The farmer **has harvested** the olives.

19) ʿAli sɛig l-adjmal li-l-bir biš yšrubu l-ma'.
Ali lead.AP.M.SN the-camels to-the-well so that drink.IMPERF.3.PL the-water
Ali **is leading** the camels to the well so that they drink water.

However, the temporal interpretation of participial sentences follows the principle illustrated above in most but not all cases. Table 2 illustrates the verbal classes which do not comply with the generalization (darker rows).

Table 2

	EVENT STRUCTURE	PREDICATES		INTERPRETATION
1	DP[1] INITIATOR, DP[2] UNDERGOER	sɛig, ǧɛbid	DRIVE, PULL	Present continuous
2	DP[1] INITIATOR, DP[1] UNDERGOER	mɛši, ǧɛi	GO, COME	Present continuous
3	DP[1] INITIATOR, DP[1] UNDERGOER, **PP RESULT-RHEME**	daχl, mareg	ENTER, EXIT	Present continuous
4	DP[1] INITIATOR, XP RHEME	χaif, ʿarif	FEAR, KNOW	Present continuous
5	DP[1] INITIATOR, DP[2] PATH	šarib, dɛhin	DRINK, PAINT	Present perfect
6	DP[1] INITIATOR, DP[1] UNDERGOER, DP[1] RESULTEE$_i$	mnaggiz, rɛkib	JUMP, MOUNT	Present perfect
7	DP[1] INITIATOR, DP[1] UNDERGOER, DP[1] RESULTEE	gɛtil, sariq. ba ʿiṯ	KILL, STEEL, SEND	Present perfect
8	DP[1] UNDERGOER	ḏɛib, ǧɛmid	MELT, FREEZE	Present perfect
9	DP[1] UNDERGOER, DP[1] RESULTEE	mkassir	BREAK	Present perfect

Row number 3 corresponds to a sub-class of verbs of motion whose temporal boundedness is

encoded by a goal of motion. Such verbs denote events in which a resultant state is achieved, nevertheless, they receive unexpectedly a present continuous interpretation.

Rows number 5 and 8 correspond to two classes of predicates that violate Generalization 1 in the opposite sense. The sub-event structure of the two classes, respectively creation consumption verbs and degree achievements, does not include a result projection but they are interpreted as present perfect. In the next section I will try to make sense of this data.

5. Paths and goals

Generalization 1 is based on the idea that the temporal information of a participial sentence is encoded within the VP structure. Consequently ResP was regarded as the locus of codification for past tense in the absence of explicit temporal morphology. However, once the generalization was confronted with the empirical data it proved to be wrong. Given this result, there needs to be an alternative explanation to the temporal alternation to the purely structural approach attempted above. A possibility is that the temporal information is dependent not only on the structure of the event, but also on the identity of the elements hosted in the argumental projections. This section, therefore, explores this alternative starting with the analysis of the verbal classes whose behaviour was not captured by Generalization 1, which are:

I. creation consumption verbs,

II. degree of achievement verbs, and

III. verbs of motions requiring a goal.

5.1 Creation consumption verbs

The verbs of the creation/consumption type are transitive verbs whose telicity status depends on the quantisation properties of the direct objects (Borer, 1998, Folli and Harley, 2004, Borer, 2005 a.o.). If the DP object does not denote a countable entity, as in the case of mass nouns like *couscous* in “eating couscous” or bare plurals like *magazines* in “reading magazines”, the sentence is interpreted

as unbounded. Conversely, if the DP object is countable, the sentence receives a telic reading.

Krifka (1987) defines this "mapping to objects and mapping to events" relation as a monotonic relation between one property of the object which is relevant to the context and the event. This relation holds in a way that the cessation of the process necessarily corresponds to the moment in which the object stops being affected. A direct object holding a mapping relation of this kind is called "path". Ramchand's classification captures this property by listing creation/consumption verbs as Init/Proc/Path type.

Tunisian participial predicates of the creation/consumption type are interpreted as present perfect regardless:

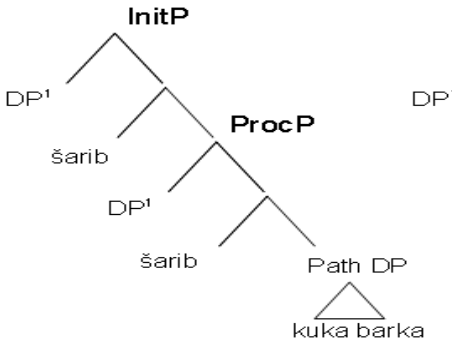
20) Sami šarib kuka barka.
Sami drink.AP.M.SN coke only
Sami **has drunk** only coke.

Verbs of this kind share the same Init/procP structure with other transitive verbs, like *sɛig* "to lead", which doesn't host a path in its rheme position. Interestingly the two classes differ with respect to their temporal interpretation, as (20) and (21) illustrate:

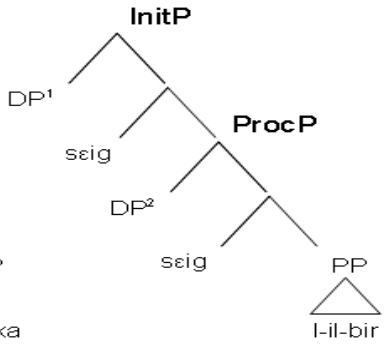
21) ʿAli sɛig l-adjmal li-l-bir
Ali lead.AP.M.SN the-camels to-the-well
Ali **is leading** the camels to the well.

I would like to propose that the past interpretation of creation/consumption verbs correlates with the presence of a path, since this is the most salient difference between the two types of verbs. The structures of creation/consumption verbs and the one of transitive verbs which pattern with *sɛig* are illustrated respectively by (22) and (23).

22)



23)



While the DO object in (22) is merged in the rheme position, in (23) the DO *l-adjmal* is merged in

the Spec of ProP. The case of participial interpretation shows that transitive verbs do not form a natural class as Ramchand suggests: not only are they superficial expressions of different underlying structures, but also they don't receive the same temporal interpretation.

What the data suggest is that there could be a connection between the presence of a path/rheme and the exceptional behaviour of the creation/consumption class with respect to Generalization 1. However in what way this presence contributes to the interpretation of the participial sentence still needs to be clarified.

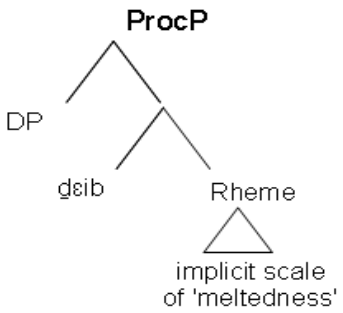
5.2 Degree achievement verbs.

Degree of achievement verbs, similarly to the what observed in 5.1, violate Generalization 1 in that they don't project a ResP and are interpreted as present perfect in participial sentences.

24) eğ-ğlat ḏɛib fi-l-ḥokka.
the-ice-cream melt.AP.M.SN in-the-cup.
The ice-cream has melted in the cup.

Degree achievement predicates are generally de-adjectival verbs. They are, thus, a special kind of process predicates which map the degree of their change onto an implicit scale derived from the adjectival meaning they yield (Hay, Kennedy and Levin, 1999). Therefore the predicate of (24) presents the structure in (25):

25)



Degree achievement predicates, as we can see, are similar to the creation/consumption class in the sense that both types include a process sub-eventuality which is not bounded by the presence of a ResP, but is bounded by the existence of a path/scale in their rheme position. The difference between the two is that in the case of creation/consumption verbs the path can be implicitly or

explicitly realized, while degree achievements verbs have always an implicit path.

Consequently the case of degree achievement suggests a similar conclusion to the one reached in the previous section: the presence of a path/scale somehow triggers a past interpretation.

5.3 Initiator, undergoer, result-rheme verbs

The last class of predicates which defies the structural criterion proposed in Generalization 1 is a subclass of verbs of motion which are bounded by the presence of a ResP and, nevertheless, do not yield a present perfect interpretation; this is the case of verbs like *daχala* "to enter" which is illustrated in example (26).

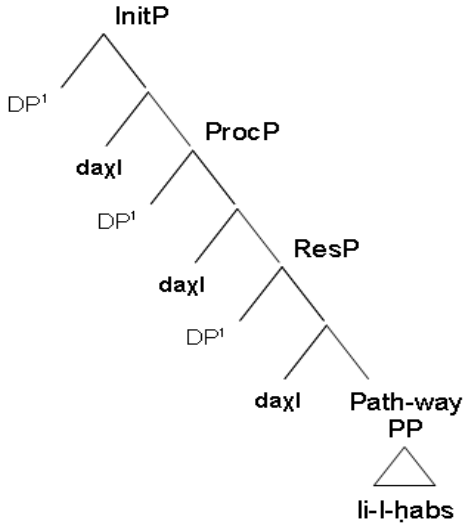
26) Sami daχl li-l-ḥabs.
Sami entrer.AP.M.SN to-the-prison
Sami is entering/about to enter prison.

Verbs of this kind respond positively to tests for telicity. For example (27) is "impossible" since it cannot mean that *John* needs an amount of time equal to 5 minutes in order to cross the threshold of prison.

27) *John entered prison for five minutes.

Predicates like "to enter" have an underlying Init/Proc/Result-Rheme structure which correspond to the diagram below:

28)



Their ResP selects a goal of motion, expressed in the form of a PP, in complement position which

supports the predicate in the definition of a conclusive state held by the resultee. A Result/Rheme, thus, is the combination of a result projection with a path.

Given this fact, the ResP of such verbs is, in some senses, defective since a complementary PP is needed to express the destination of the movement and such information surfaces as an indirect complement identified with a goal of motion. In conclusion it appears that Init/Proc/Result-Rheme verbs are different from other events projecting a ResP in that their result phrase is composite and requires a following goal of motion (which I will call "pathway" for the ease of clarity) as part of the VP structure.

Similarly to what I argued for the two previous classes, I suggest that also in the case of Init/Proc/Result-rheme verbs the presence of a pathway is the element that prevents them from behaving like the remaining ResP verbs with respect to their temporal interpretation in participial sentences.

6. Proposal

In Generalization 1 I hypothesized that the interpretation of participial sentences was based on a simple syntactic principle: the absence/presence of a ResP projection. However the data defeated the generalization in the sense that it was found not to account for the behaviour of the verbal classes discussed in 5.

Naturally, a generalization with such a number of exception is no longer useful at the explanatory level, therefore the data needs to be observed under another light. The core proposal remains unchanged: the key to understand the alternating interpretation of participial sentences is the VP structure, however, the temporal interpretation of participial predicates it is not induced by the presence/absence of a specific projection, but rather by the nature of the lowermost projection of the structure, which in the framework adopted here, it is also the latest in chronological terms.

6.1 Process feature

In the framework adopted here the rightmost projection of the VP is alternatively a ProcP, a ResP, a PathP or, finally a PathwayP. I will suggest that, for independent reasons, only some sub-event components can be endowed with a [+process] feature as summarized in Table 3.

Table 3

ProcP	Transition	[+process]
ResP	State	[-process]
Path-DP	State	[-process]
Pathway-PP	Transition	[+process]

ProcP is the sub-eventuality which encodes "dynamicity" in the sense that it represents the change inherent to any dynamic VP. Naturally ProcPs are [+process] and they do not denote a single state, but a series of transitional ones. The feature [+process] is named after the ProcP projection to capture the idea that all subcomponents encoding transitions share the dynamic nature of the process sub-eventuality.

On the contrary ResP is likely to be [-process] since it represents the terminal state achieved at the end of a change. Along the same line a Path, which has the property of ending the change by virtue of its bounding nature and provides a resultant state to a process that would be otherwise unbounded, is [-process]. Crucially ResPs and PathPs denote a single terminal state.

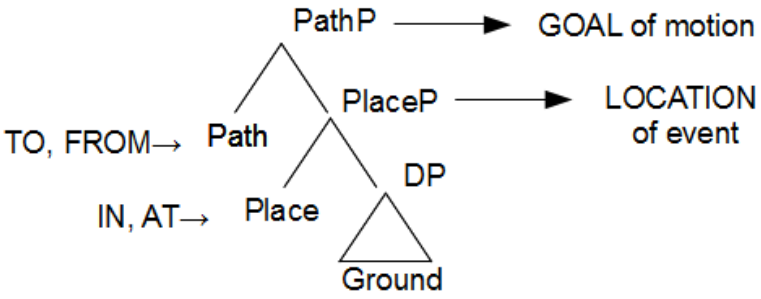
Summarizing what said so far: sub-eventualities which denote a single final state are [-process], while sub-eventualities which denote a series of transitional states are [+process].

Finally there is the case of PatwayPs. A Pathway is a sub-kind of locative PP which has the property of denoting the goal of motion. In the next section I will argue in favour of the idea that prepositions introducing pathways, similarly to ProcPs, encode a [+process] feature.

6.2 Layered PPs

To support the claim that pathways share some properties of ProcP I will provide a more detailed account of PP structures. Jackendoff (1983) introduced the idea, subsequently refined by much work (koopman, 2000, Svenonius, 2010 a.o.), that a prepositional head must be decomposed into

Pathways and Place. The two layers are organized as showed in 30).



29)

(Ramchand (2008), pg 110).

Place heads are [-dynamic] and they are purely locative, while Pathways -which introduce a goal of motion- are in turn [+dynamic]. Place heads like, *in* and *at* in English, are locative in the sense that they introduce the ground in which the event takes place; pathways, on the other hand, introduce the place which is the destination of the displacement: the goal of motion. Intuitively a goal is the sum of a "ground" (headed by a PlacePP) and a direction (headed by a PathwayPP). This composition is morphologically transparent in languages like English in which a goal of motion may be introduced by a composite preposition like "into".

While any predicate can select a PlaceP in the rheme position, only some verbs can select a goal of motion. However the notion of goal should not be conflated with that of "verbs of motion", there are, in fact, transitive verbs like "to throw" can optionally select a goal too.

PathwaysPPs occur prototypically in the complement of a ProcP projection (as in a 30a) but they can also occur in the complement of ResPs like in (31a).

30) a. John went to the market.
b. *?John went.

31) a. John jumped to the side of the street.
b. John Jumped.

The example (30) and (31) select both a PatwayPP but are different in one crucial way: the goal of motion is part of the argumental selection of the predicate in the former but not in the latter case.

Tunisian Arabic presents too a sub-class of Init/Proc/ResP predicates, (e.g. *daχala* "to enter"), that selects a PathwayP in the rheme position (cf. (32) with (27) repeated below).

32) ?? Sami daχl
Sami enter.AP.M.SN
Sami is entering.

27) Sami daχl li-l-ḥabs.
Sami entrer.AP.M.SN to-the-prison
Sami is entering/about to enter prison.

The verb *daχala* in (32) and (27) selects a PathwayP, similarly to (30) in English. Therefore, my claim is that motion verbs of the enter-type select an argument PathwayPP. Differently from other ResP verbs, however, such verbs bear a "defective ResP" in the sense that the result state is conjointly defined by the content of the Res head and complement pathway.

Thus, the goal of motion of a verb like *daχala* is assigned with a [+process] feature by the pathway head, which is the dynamic component of the PP structure. As a consequence of this selectional property, participial predicates with a PathwayPP argument are interpreted as present continuous, in spite of their ResultP component.

6.3 Participial bare sentences

In this work it was pointed out all along that participial predicates do not have any morphological specification of tense and yet receive a tensed interpretation. Given this fact participial sentences seem to be "bare sentences" in the sense proposed by Déchaine (1991): a sentence "with no overt morphological tense".

However "bareness" does not seem to imply a truncated structure similar to child "root infinitives" proposed by Rizzi (1993), but rather it seems to present a fully articulated structure, proper of a language that normally requires an explicit temporal specification as suggested by Fitzpatrick (2006). It is easy to demonstrate, in fact, that participial sentences can be preceded by higher functional material:

33) Marwa me**ši dima** mɛšia ʿala rijle-ha.
Marwa NEG always goAP.F.SN on foot.her
Marwa doesn't always go on foot.

34) Marwa ma-timš**iš** **dima** ʿala rijle-ha
Marwa NEG go.IMPERF.3.F.SN-NEG always on foot.her

Marwa doesn't always walk around.

The examples also illustrate that the reciprocal order of negation, adverb and predicate in (33) and (34) varies depending on the verbal form in use (participle vs imperfective). Moreover, assuming that negations and adverbs are hosted in projections which dominate the VP area (Cinque, 1999), participial predicates don't seem to raise to TP positions.

Since (33) and (34) show that Tunisian Arabic allows different landing positions for the predicate, I propose that when the verbal predicate raises to a T° position (e.g. imperfective like in (34)) the temporal interpretation is assigned by TP, but if the predicate is a participle, there is no movement and tense is assigned by the internal properties of the VP. This idea is implemented in section 6.4.

6.4 The event structure intertwined with the reference time

One of the main theoretical point around which this work revolves is that the VP is an articulated representation of the event structure which mirrors what we perceive to be happening in the real world. The hierarchical organization of projections corresponds to the linear organization of the sub-eventualities and their chronological order. All parts form together a concatenation in which a dominating projection precedes logically and also chronologically the following projection.

Once this portion of structure is built, in the sense that the verb is merged and copied in the V heads and the argumental positions are assigned with DPs and path/pathways, the VP phase (Chomsky 1999, 2008) is completed and is sent to the interfaces.

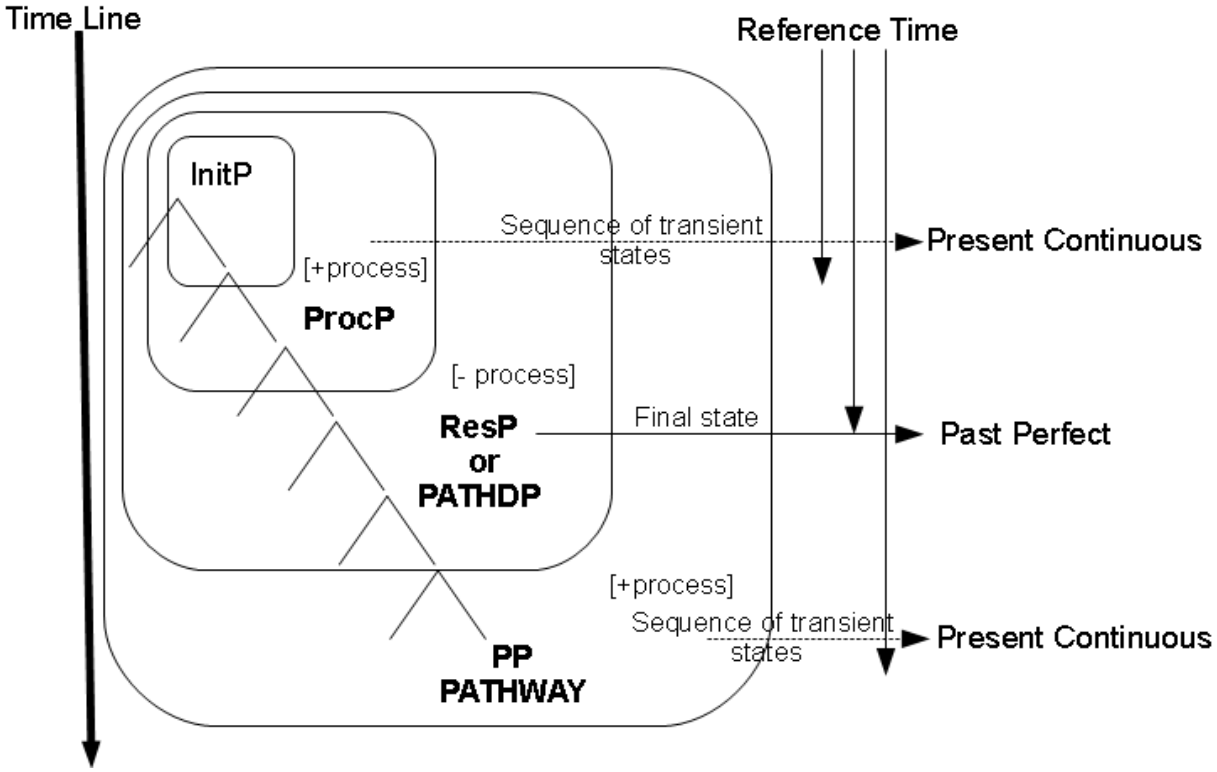
It should be notice that the framework adopted in this paper presents a variation with respect to the standard theory in that the vP, which is generally taken to be the edge of the phase, is not present. Ramchand's (2008) theory, in fact, suggests to swap all projections of the vP area with a proliferation of simpler verbal heads each labelled on the basis of its function in the event structure (presented in section 2). Therefore the edge of the verbal phase is no longer vP but VP.

If no other temporal specification arrives to LF from the inflectional domain, the sentence is assigned a temporal interpretation on the sole basis of what is present in the VP phase. Such

representation lacks an internal reference point on the time-line therefore the sentence is interpreted with respect to a default time which is, in the absence of other cues, the speech time.

The articulation of the VP determines if the event is interpreted to be happening simultaneously with the reference time or if the event ended before that. Thus when the lowermost and, therefore, latest component of the VP carries a [+process] feature the sentence is interpreted in progress and receives a present continuous reading. In the absence of the [+process] feature the event is seen as completed within a span of a time that precedes the reference time; in this case the participial predicate is assigned with a present perfect reading.

The diagram in (35) summarizes how LF assigns a temporal interpretation to the bare participial sentence.



35)

The structure in (35) is directly responsible for the temporal reading in the way that follows: the phases of the event are chronologically ordered, some of them are transient, others are states. The transient phases are [+process] while states aren't. Within the VP sub-components I claimed that

ProcP are [+process], while Path-rhemes and ResP are not. As for locative PPs I claimed that not all PPs behave in the same way. Only PathwaysPPs, which introduce the goal of motion, are assigned with the [+ process] feature.

When the event last subcomponent bears the suggested [+process] feature, the VP phase is interpreted as in progress since the reference time "points" at one of the transitory states among the others which form the concatenation that defines a change. In this way the reference time intersects with the [+process] sub-eventuality generating a present continuous reading. This idea tries to capture the intuition that the moment following the reference time will "point" at a different state to the one previously "pointed" at, therefore the interpretation can only be "continuous".

The absence of a [+process] feature simply accounts for the fact that such subcomponent corresponds to a single state, the final one. In this case the reference time "points" at the definitive state and the moment that follows will point still at the same state. Thus, when a non processual sub-component seals the VP, the event is interpreted as completed, as no other change of state is expected.

The idea behind this hypothesis is that tense is a unique interpretative effect which can be triggered by a number of factors. Specialized temporal heads (TAntP, TPastP and TFutP in Cinque, 1999) is a solution among others to codify tense in a sentence. In tenseless languages tense is encoded by alternative strategies. Fɔngbè (Avolonto, 1992) for example, seems to assign a temporal value to the bare sentences on the basis of boundedness. Tunisian Arabic, which is not a tenseless language but a language that allows tenseless sentences, in bare contexts assigns the temporal interpretation on the basis of the event structure following the mechanism that I illustrated in this section.

7. Predictions

On the basis of the proposal illustrated in section 6, at least two predictions related to the temporal interpretation of a participial predicate can be made. The first concerns verbs that can select more than a preposition. It is not infrequent in English and it occurs also in Tunisian Arabic that a verb

may select more than a preposition. Since the type of PP affects the temporal interpretation of participial sentences, an Init/Proc/Result-rheme predicate that selects PPs of pathway and place kind is expected to allow both the present continuous and the present perfect interpretation.

The second prediction refers to the relation between a participial sentence and the reference time. In section 6 it was claimed that the interpretation of participial predicates derives from the intersection of the event structure internal chronology with a default reference time corresponding to the moment of speech. However the reference time can be manipulated by embedding a participial sentence under a matrix clause whose tense is morphologically marked.

Given this facts, it is expected that an alteration of the reference time causes the temporal reading of the dependent participial sentences to change along. That is to say that the relation of simultaneity or precedence between the participial sentences and the new reference point are expected to hold unchanged, while the tense is expected to vary.

7.1 predicates allowing multiple prepositions

The verb *daχala* "to enter" in both Tunisian Arabic and Moroccan Arabic can be interpreted alternatively as present continuous and present perfect when used as predicate of a participial sentence. According to Brustard (2000) there are many cases of alternating interpretation of participial predicates, but in my data *daχl/daχla* (the masculine and feminine participle of *daχala*) is the only genuine case in which a predicate is interpreted in both ways.

An interesting fact is that the predicate *daχala* can select two different prepositions: *fi* "in" and *li* "to". Example (36) reported below, shows that the verb is interpreted as present continuous when followed by the goal preposition *li.*

36) Sami daχl li-l-ḥabs.
Sami enter.AP.M.SN to-the-prison
Sami is entering prison.

On the other hand, when *daχla* is followed by a PP introduced by *fi*, as in (37) the participial predicate is interpreted as present perfect.

37) l-karhaba daχla fi-l-ḥieṭ
The-car enterAP.F.SN in-the-wall
The car has crashed into the wall.

The construction "daχla fi" it is not very productive in Tunisian since it seems to appear only in fixed expressions like the one presented above. However the same result emerges from Moroccan Arabic examples in which the construction appears to be extensively used along with the "daχla li" one:

38) as-sarut daχla fi-l-kfl (Moroccan[4])
The-key enterAP.F.SN in-the-lock
The key has entered the lock/is in the lock.

The two examples above, coming from Tunisian and Moroccan Arabic, show that the prediction is borne out and that the alternation in the temporal reading of a participial sentence is indeed predicted by the [±process] feature carried by the lowest component of the event structure. Therefore, as long as the event structure projects a result-rheme, the temporal interpretation is predicted by the type of preposition which introduces the goal, bringing ulterior support to the proposal presented in section 6.

7.2 Dependent participial sentences

In this section I will analyse what happens when a dependent participial sentences is embedded under a matrix sentence whose reference time is not the speech time.

In complex sentences there are two logical alternatives: either the events are happening simultaneously or they occur in sequence. Given the absence of tense morphology in participial sentences, the prediction is that their temporal interpretation rely on the tense of the matrix sentence but that ordering of the events depends on the type of participle in use. In particular, participles yielding a past reading are interpreted as preceding the event denoted by the matrix sentence, while participial predicate interpreted as present continuous are perceived as happening simultaneously to the matrix predicate. In (39) I will start looking at the case in which the two events are juxtaposed:

4 Example provided by Ali Idrissi, personal communication.

39)

a. Brahim **gaal** illi Sami dɛhin barša diar.
Brahim say.PERF.3.M-SN that Sami paint.AP.M.SN many houses.
Brahim said that Sami had painted many houses.

b. Brahim **ygul** illi Sami dɛhin barša diar.
Brahim say.IMPERF.3.M-SN that Sami paint.AP.M.SN many houses.
Brahim says that Sami has painted many houses.

Both participial predicates in (39) are interpreted in the past with the difference that the former is interpreted as past perfect. In (39a) the dependent event is interpreted as completed before the matrix one therefore the participial predicate outdistance the past reference time provided by the matrix sentence.

In (40) below, conversely, the participial sentences are interpreted as simultaneous with respect to the reference time established by the matrix sentence. As we can see, on the basis of the criteria illustrated above the event is [-process] and the prediction that [-process] corresponds to simultaneity is borne out.

40)

a. Brahim **gaal** illi Sami mɛši li-l-daar.
Brahim say.PERF.3.M-SN that Sami go.AP.M.SN home.
Brahim said that Sami was going home.

b. Brahim **yguul** illi Sami mɛši li-l-daar.
Brahim say.IMPERF.3.M.PL that Sami go.AP.M.SN home.
Brahim says that Sami is going home.

In (40) if the main declarative sentence is interpreted in the past the following participle is interpreted as past continuous. On the other hand, when the main sentence has an imperfective predicate then the embedded participial predicate receives a present continuous reading.

On the basis of these examples it appears that participial sentences don't encode any hidden temporal feature and that their interpretation depends on the reference point regardless whether the reference is established by the main sentence or by default.

8. Conclusion

In this paper I presented a theory which intends to provide an explanation for the interpretation of participial sentences in Tunisian Arabic. The present proposal is based on the idea that a “bare

participial sentence", due to the absence of explicit temporal morphology, is interpreted on the basis of its structural properties. In the specific it is claimed that some of the VP sub-components are assigned with a feature, that I named [+ process], which is responsible for the temporal interpretation.

Since the event sub-components are considered as a concatenation of subsequent phases, the interaction between these and the time-line generates two different temporal effects: a past reading, similar to English present perfect, and a present reading, similar to English present continuous. The structure of the VP is directly responsible for the temporal reading on the basis on the nature of its last subcomponent. Projections that are [+process] determine a progressive reading once they interact with the reference time, conversely, [-process] projections determine a present perfect reading.

Finally, the complete absence of verbal morphology is the element suggesting that the VP must present an articulated structure to account for the variation in the temporal interpretation. The adoption of this view implies that this work necessarily moves away from the idea that temporal projections have the exclusivity in the generation of tenses; on the contrary it supports the idea that the relation between the sentence and the time is a shared task organically performed by several parts of the structure.

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