On the Labeling Ambiguity in Absolute Participial Clauses in English

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1. Introduction

This study investigates the structure of absolute participial clauses in English to provide evidence for Ambiguous Labeling (AL) proposed by Mizuguchi (2019). I have conducted this analysis in the recent framework of the Minimalist Program (Chomsky 2008 et seq.), and as simplicity plays an increasingly significant role in bio-linguistic theorization, I have attempted to avoid as much unnecessary complexity as possible in the analysis. By considering labeling and interpretive possibilities borne in AL, I will show that my analysis applies not only to absolute participial clauses but also to a few types of relative clauses.

This study deals with English absolute participial clauses (APC). APC has a subject followed by a participial. For instance, the latter clause after a comma in (1a) has the *boy* as the subject of a following present participial *whispering*. APC modifies main clauses in various ways: for example, in (1a) again, what was happening in the car at the same time is added to the event (driving silently) described by the former main clause.

(1) a. They drove mostly in silence, *the boy whispering* directions to the father.
    b. *The boy whispering* into my ear looks to be around my age.

What is interesting is that the italicized part, *the boy whispering*, is found in other kinds of clauses such as (1b). *The boy* is the subject of *whisper*(*ing*), but at the same time, "the boy whispering into my ear" serves as a subject of the whole clause (1b). Although this study focuses on a present participial *-ing*, similar observations will be available in clauses with a past participle.

Some people may argue that the italicized parts derive differently because the clauses containing the subject + *-ing* cluster function differently. Another view is to analyze them as APC with the same structure reflecting a subject-verb relation (a *nexus* in Jespersen's (1924) term). This study takes the latter stance because it seems theoretically less costly and better conforms to the

concept of *merge* as a simple structure-building operation.

The remainder of this article is organized as follows. Section 2 outlines the theoretical framework assumed in this study. Section 3 introduces a few remarkable aspects of English APC by reviewing previous studies. Section 4 presents my labeling analysis of APC and free relatives. Section 5 deals with syntactic changes of ACP over time, and Section 6 concludes the study.

2. Theoretical Background

Before analyzing APC, I will introduce a significant structure-building strategy called Labeling Algorithm within the model of human language assumed in generative grammar (2.1), and then review Mizuguchi's (2019) proposal of AL, which can overcome a few shortcomings of the standard labeling account (2.2).

2.1. Labeling Algorithm

The central tenet of generative grammar is that only humans share the innate endowment for language, designated as Universal Grammar (UG) by Chomsky (1986). UG enables children to acquire language despite their short-term exposure to unorganized input. It is assumed to contain just a simple operation *merge* that combines two lexical items into a set.[1)] The result is sent to Sensory-Motor (SM)/Conceptual-Intentional (CI) systems for sound/meaning processing. Figure 1 shows this flow of language generation.

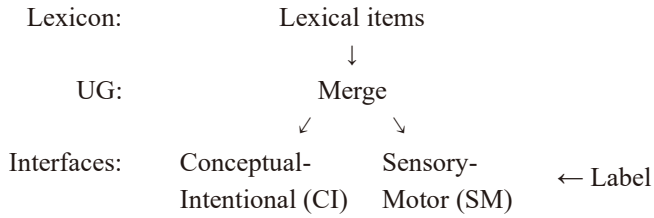


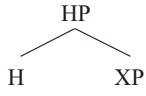
Figure 1. The UG-mediated model of language generation

A set {α, β} must be assigned a label for CI to interpret what it is. For instance, {a, report} labeled as DP and {report, files} as *v*P are interpreted as an argument and predicate, respectively. Unlike the past X-bar theory, the recent PoP approach (Chomsky 2013) emphasizes that merging and labeling

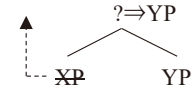
do not occur simultaneously. Rather, labeling is performed after the set is transferred to CI/SM, conforming to the Labeling Algorithm (LA) based on Minimal Search—a search algorithm for a target within a minimal domain.

Let us briefly review two cases of LA.[2] The easier case is (2a): when a head and phrase (H, XP) merge, H is detected as the label. However, (2b) shows a complicated scenario: merging two phrases (XP, YP) results in a labeling conflict because two heads (X, Y) are equally detectable as the label. According to Chomsky (2013), the conflict is settled in two ways: (i) move either XP or YP to make it invisible for LA, or (ii) take the same, prominent feature [F] shared between X and Y as the label (e.g., <φ, φ>, <Q, Q>, etc.).

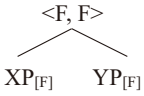
(2) a.



b. (i)



(ii)



2.2. Ambiguous Labeling

Mizuguchi (2019) indicates that the above conflict in XP-YP can result in no labeling failure. He argues that XP-YP can be labeled X or Y, and also that CI finally decides whether the outcome is well-formed or not, irrelevant to merge-based structure building. As semantics naturally allows ambiguous interpretations, it does not appear problematic for XP-YP to be presented with more than one label. His proposal is evidenced by four interpretable XP-YP structures with no phrase moved, or with no shared feature between X and Y.

Let us consider one of the XP-YP cases Mizuguchi discusses, a type of *wh*-construction called "partial *wh*-movement."[3] The apparent difference between English (3) and German (4) is whether a *wh*-phrase can halt halfway at the Spec of CP. The standard LA rules out (2b) because of the labeling failure: the set {{*wh*P which book}, {CP that-clause}} cannot be labeled unless either *wh*P or CP moves out of the set, or the same feature is shared between the two phrases. To label the set, the *wh*P moves out of it. Now LA labels the set as CP based on the only visible C-head through Minimal Search, deriving (3a). See footnote 4 for a diagramed illustration of how (3b) avoids the labeling failure.[4]

Mizuguchi argues against the above standard account because, if (3b) becomes ungrammatical because of the labeling failure, then its German counterpart (4b)

(3) a. Which book$_i$ do you think that the student read t$_i$?
b. *Do you think which book$_i$ that the student read t$_i$?

(4) a. Wen$_i$ meinst du daß Peter Hans t$_i$ vorgestellt hat?
Who.ACC think you.NOM that Peter.NOM Hans.DAT introduced has
"Who do you think Peter has introduced to Hans?"
b. Was meinst du wen$_i$ Peter Hans t$_i$ vorgestellt hat?
WH think you.NOM who.ACC Peter.NOM Hans.DAT introduced has
(Mizuguchi 2019: 5-6)

should be ruled out for the same reason, too. In (4b), although the embedded clause "(daß) Peter Hans …" and an internally-merged *wh*-phrase *wen* form a set {*Wh*P, CP}, the *wh*-phrase can stay at the Spec-CP, seemingly causing no labeling problem. Then, as (4a) shows, it can even move higher up to the Spec-CP of the main clause.

Unlike the standard account, Mizuguchi's AL rests more on the CI interface condition to be satisfied for appropriate interpretation than LA itself. Specifically, AL allows labeling ambiguity, but our grammar lets CI decide on which label to be the most suitable for the set or filtered out. Given AL, the intermediate {*Wh*P, CP} in (4b) can be labeled either C or *n* (rooted in *n* of *wh*P). As the set is transferred to the interfaces, CI demands that its label be C, not *n*, to satisfy the selectional relation of *meinen*. (5) summarizes the labeling and interpretation for (4b) described so far.

(5) a. … [$_\gamma$ [$_{wh\mathrm{P}}$ wen$_i$] [$_{\mathrm{CP}}$ Peter Hans t$_i$ vorgestellt hat]]?
b. LA: Label γ either *n* or C
c. CI : Well-formed if γ=C, not if γ=*n*

Mizuguchi's theory may seem to unlimitedly allow any XP-YP set to be labeled either X or Y, but in fact AL is restricted in that "heads can label only when they are without unvalued features" (Mizuguchi 2017: 331). For instance, if the Case feature of an *n* head of a nominal phrase like "a book" remains unvalued, it becomes illegible to CI and violates Full Interpretation.[5] Looking again at the partial *wh*-movement in (3), *which book* has an intrinsic Q-feature, and its *n* has an accusative Case feature valued in its origin (marked by a trace *t*). With no unvalued features, *n* of *which book* is eligible to label, and

consequently, no labeling failure arises on the side of *n* when the *wh*-phrase moves cyclically via the phase edges.

On the contrary, based on his observation of Japanese and Bantu languages, Mizuguchi assumes that a labeling problem arises on the side of C as a probe. An interrogative C, for example, cannot be eligible to label unless its unvalued Q-feature (signified as [*u*Q]) agrees with its goal, namely *wh*-phrases such as *which book*. In (3a), the topmost $C_{[uQ]}$ agrees *which book* in Q-feature (i.e., [[$_{nP}$ *WH*$_{[Q]}$ *n*] [$_{CP}$ $C_{[uQ]}$ TP]]) and has no unvalued feature anymore, so C becomes eligible to label the whole question (3a) as CP.

To sum up, let us repeat two points of AL reviewed so far. As illustrated in Figure 2, the significant point is that it can label an XP-YP set with both heads equally accessible to label it, which has not been handled in the standard LA-based approach shown in (2b). Another unique point is that CI plays a decisive role in ruling in and out the arbitrary outcome of AL, complying with interface conditions such as Full Interpretation. In the next section, I will discuss to what extent the above line of analysis applies to other structures including English participial constructions.

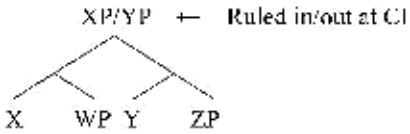


Figure 2.　The model of Ambiguous Labeling

3. English Participial Clauses

This section reviews three previous studies of APC in English. Starting with grammarians' standard description, the first subsection (3.1) poses a question on whether APC can be seen as reduced clauses or not? The next section (3.2) focuses on the structural simplicity of ACP and how it differs from that of *to*-infinitival clauses and is attributed to its interpretation and mood.

3.1. ACP as reduced finite paraphrases?

In Quirk et al. (1985), non-finite adverbial clauses that have an overt subject but are not introduced by complementizers nor prepositions are termed

absolute clauses. One example is shown in (6), paired with another example (7) of a similar kind of clausal adverbials termed *participial clauses* (PC). PC differs from APC in the absence of subjects. For example, although the subject who was driving to Chicago is not present in (7a), it is naturally identified with the subject of the main clause, which is *I* in this case.

(6) No further discussion arising, the meeting was brought to a close.
(7) a. Driving to Chicago that night, I was struck by a sudden thought.
b. ?Driving to Chicago that night, a sudden thought struck me.
(Quirk et al. 1985: 1120-21)

The identification of implied subjects seems to depend on the structure, not just meaning, of the main clause. (7b) is a piece of evidence for this: although two clauses are the same in meaning, *me* in (7b) is more difficult to identify as the implied subject than *I* in (7a). An example such as "Opening the cupboard, a skeleton fell out" is even more unacceptable because the main clause has no animate subject that can perform the event described in the PC (p. 1122).

A finite paraphrase corresponding to APC/PC exhibits the understood subject, as in "While *I* was driving to Chicago that night, …" for (7). This pattern can lead to an idea that both APC and PC are derived from their finite paraphrases by deleting or altering a few expressions. Given the finite paraphrases (8a) and (b) corresponding to (6) and (7a), a possible analysis of APC in (6), for example, is that a connective *as* and a finite verb *arose* in (8a) are deleted/altered to derive (6).[6)]

(8) a. ~~As~~ no further discussion arose(→arising), the meeting was …
b. ~~While I was~~ driving to Chicago that night, I was struck by …

McCawley (1998) posits a transformation rule for another construction along the same lines. He proposes Relative Clause Reduction (RCR), which truncates a postnominal finite relative clause and changes it into an *-ing*-headed non-finite clause. As (9) shows, RCR derives postnominal PC by deleting a relative pronoun *who* and (by a separate rule) an auxiliary verb *is* within the embedded S.

(9)　the person [S [NP ~~who~~ [~~is~~ [VP talking at the center]]]]

However, things do not go that easy, as McCawley admittedly notes, when it comes to a non-finite verb+*ing* cluster. For one thing, stative verbs such as *own* and *resemble* normally do not allow a progressive form, as exemplified by the ill-formed *are owning* in (10b). This fact suggests that (10a) is not simply derivable from (10b) by deleting a relative pronoun plus an auxiliary verb *who are*. For another, the auxiliary *have* (*having*) in (11a) actually corresponds to a simple past *purchased*, not to a present perfect *has purchased* in (11b), whose tense does not match the past-time expression *in the 1950s*.

(10)　a. many persons owning land in this city
　　b. many persons who {own /*are owning} land in this city
(11)　a. Any person having purchased land in Florida in the 1950s should contact this office.
　　b. Any person who {purchased /*has purchased} land in Florida in the 1950s should contact this office.

(McCawley 1998: 395-396)

McCawley's observation suggests that the non-finite verb+*ing* of reduced clauses does not necessarily represent the progressive aspect and that its morpho-syntactic makeup may not be identical with its finite counterpart. Although the finite paraphrases disambiguate the corresponding non-finite APC/PC as to their implied subjects and logical connection between clauses, analyzing them as reduced clauses does not seem to work successfully.

3.2. Simpler construction in realis mood

Emonds (2022) provides a unified analysis of adverbial and postnominal clauses headed by an *-ing* based on his principle of syntactic economy.[7] He primarily asserts that English non-finite structures including APC and PC have no T (or I, in his term) because they all show no signs of T, such as the absence of modals (e.g., *can*, *will*, etc.) and an auxiliary *do*, to name a few. This suggests that non-finite clauses are structurally simpler than finite clauses containing TP inside, in general.

Emonds further argues that *-ing*-headed adverbial/postnominal clauses are

even simpler than other non-finite clauses such as *to*-infinitival clauses. As the pairs of adverbial (12) and postnominal clauses (13) show, *-ing* and *to*-infinitive appear structurally replaceable. These two forms, however, differ in meaning: in (13), for example, *fixing* implies that the repair is already done, whereas *to fix* expects that it is to be done after the timing of the utterance.

(12) a. We brought the guest a drink, thus *introducing* ourselves.
b. We brought the guest a drink (in order) *to* thus *introduce* ourselves.
(13) a. The man *fixing the sink* will soon be leaving.
b. The man *to fix the sink* is now arriving.
(Emonds 2022: 140-1; italics added)

Mood, specifically realis and irrealis, is crucial for the interpretive distinction of realized/unrealized actions. Simply put, realis mood denotes a real event/situation associated with specific time and place, whereas irrealis mood expresses an unreal, hypothetical event/situation. Based on his economy principle, Emonds considers that realis mood comes by default from an *unmarked*, simplex VP structure of *-ing* clauses, whereas irrealis mood is introduced by an additionally merged P-head *to*, which forms a *marked*, PP-VP complex. (14) illustrates the structure–mood matching described so far.

(14) a. [VP V-*ing* ⋯]] ⋯ (Realis; unmarked)
b. [PP to [VP V ⋯]] ⋯ (Irrealis; marked)

Let us also examine APC, another realis-oriented participial construction Emonds briefly mentions. Similar to (12a) and (13a), the temporal interpretation of APC such as (6), repeated as (15) below, holds simultaneously with the event of main clauses. Notice that the subject of participial clauses follows a preposition *with* quite frequently. (16) shows two such examples.

(15) No further discussion arising, the meeting was brought to a close.

(16) a. With the climate changing so fast, governments are starting to react.
(Emonds 2022: 140)

b. The meeting was over in ten minutes, with Harry making the drive from Whitehall to the Royal Air Force Club at the corner of Piccadilly and Park Lane, down the road from Merlin St Clair's flat.
("On the Brink of Tears" by Peter Rimmer)

Following Ishihara (1982), Emonds analyzes *with* as an introducer of the participial subject in parallel with for introducing the subject of *to*-infinitive. *For* as well as its null spellout ~~for~~ is considered to assign accusative Case (ACC) to a nominal, as observed in (17). Along the same lines, *with* is assumed to appear for assigning Case when the participial subject is overt (otherwise, it does not even show up: see (18a)). As (18b) shows, the subject can appear alone without being introduced by *with*. Emonds has not clearly explained how such subjects are valued for Case (perhaps a null spellout of *with* as a Case-assigner is assumed, for example). That is an issue to be addressed.

(17) a. What is important is [for them to see a specialist]

b. I want [~~for~~ Mary to come to Japan] and [for her to meet my parents]
(Radford 2020: 184-5; (b) slightly modified)

(18) a. (With Harry) Having no income, there's not much we can do.
(Emonds 2022: 140)

b. Tina had arranged to go back to the hotel by taxi, Harry having no idea how long he would have to wait to see the air commodore.
(On the Brink of Tears, by Peter Rimmer)

Before moving to the next section, let me emphasize a couple of points based on the literature review. The structure of APC is quite simple: it lacks T and is simpler than *to*-infinitival clauses. For its simplicity, it is chosen as an unmarked clausal form interpreted in realis mood. APC can be rephrased in the form of finite paraphrases, but the evidence shows that it does not seem plausible to analyze APC as reduced clauses derived from the paraphrases. Keeping these findings in mind, I will analyze APC and related phenomena from a theoretical perspective of AL in the following two sections.

4. AL Analysis

In this section I present my analysis of the dually-used subject + *-ing* cluster in an identical look mentioned in the beginning of this article (4.1) and then extend the analytic view to another construction called free relatives (FR), especially *wh-ever* types (4.2) to test my AL-based proposal.

4.1. AL in absolute participial clauses

I consider that AL applies to not only the data in 2.2, but also APC and related constructions. To see this, let us first consider how the italicized phrase in (19) is derived.

(19) *The boy whispering into my ear* looks to be around my age. (=(1a))

First, *whisper into my ear* forms VP, and it merges *v* to form *v*P. Next, it is merged with DP *the boy*, forming a {DP, *v*P} set. Here, as it is in XP-YP configuration with no shared feature, the set remains unlabeled. The derivation proceeds, and this unlabeled set merges *-ing*, which I assume serves as a head that selects a verbal constituent.[8] DP *the boy* moves out of {DP, *v*P}, and now that the set is labeled *v*P and recognized as verbal phrase by *-ing*, *-ing*P is formed above it. The derivational steps so far are illustrated below in (20).

(20) a. [VP whisper into …]
b. [*v*P *v* [VP whisper into …]]
c. [? [DP the boy][*v*P *v* [VP whisper into …]]]
d. [? *-ing* [? [DP the boy][*v*P *v* [VP whisper into …]]]]
e. [? [DP the boy][*-ing*P *-ing* [*v*P ~~[DP the boy]~~[*v*P *v* [VP whisper into …]]]]]

Three labeling conflicts, marked by a question mark "?," are observed in the course of derivation. LA resolves the first two in the steps (20c) and (d) by applying a standard option (2b-i), that is, moving one of the two phrases in XP-YP, (DP *the boy*, in this case) out of the unlabeled set. As a consequence of re-merging DP, another conflict brings about in (20e): now there is a {DP, *-ing*P} set on top of the tree, with no prominent feature shared between D and *-ing* and neither phrase moving out. See footnote 9 for the hierarchical illustration.[9]

Under AL, the topmost set is labeled either DP or *-ing*P because both D

and *-ing* are equally accessible by Minimal Search (see Figure 3). The desired outcome for CI is DP (nominal), not *-ing*P (clausal), in order for (19) to make sense. Then the DP merges TP "looks to be …" and its unvalued Case is checked via Agree. That is the DP scenario for (19). If labeled *-ing*P, the outcome is ruled out as gibberish at the CI interface.

Let us turn to another example (21), which contains a clause the same as (19) in form, but different in interpretation.

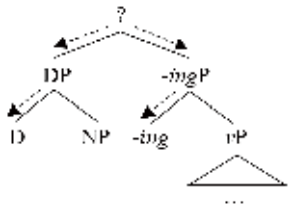


Figure 3.　AL in (20e)

(21)　They drove mostly in silence, *the boy whispering directions*. (=(1b))

D and *-ing* are searched as the label in the same way as Figure 3, but in this case *-ing*P (clausal) is a desired outcome for CI because the italicized clause in (21) serves as an adjunct modifying the main clause, but it is not selected by any head at all. As no selectional relation has to be satisfied at CI, *-ing*P is ruled in, otherwise ruled out because the outcome remains unselected.

Before I finish the *-ing*P scenario for (21), let me add a brief comment on DP's Case. When the {DP, *-ing*P} set is labeled *-ing*P, DP *the boy* still remains unvalued for Case. As shown by *him* in (22), a nominal before *-ing* is Case-marked.

(22)　They appointed Max, him being the only one who spoke Greek.
(Informal style; Huddleston and Pullum 2002: 1191)

Recall that in the previous studies reviewed in 3.2, Emonds postulates a semantically empty preposition *with* to introduce the participial subject just as *for* and its null spellout ~~*for*~~ do in *to*-infinitival clauses. As (23) and (24) show, *with* must be adjacent to the overt participial subject. According to my informants, (23b) and (24b) sound quite odd, and *for years* and *undeniably* cannot modify anything.[10] Based on this observation and its semantic emptiness and formal optionality (see (18b): *Harry* stands alone without an overt *with*), I tentatively assume that *with* as well as its null form $Ø_{with}$ is inserted at PF to assign a Case to the subject. This, of course, requires more

evidence and further considerations including how to license PRO in APC.

(23) a. With Harry having no income *for years*, there's not much we can do.
b. *With *for years* Harry having no income, there's not much we can do.

(24) a. With the climate changing so fast *undeniably*, governments are starting to react.
b. *With *undeniably* the climate changing so fast, governments are starting to react.

4.2. AL in free relatives

In this section, I take up another construction called *free relatives* (FR) and consider how it is analyzed by AL. For starters, let us observe the FR (the italicized part) in (25). It is interpreted ambiguously: one interpretation is "Mom visually noticed the thing I grabbed," and another is "Mom understood from her guess what was in my hand."

(25) Mom saw *what I was holding in my hand*.

This comes in a straightforward manner from AL available in FR. Given the derivation (26) for the *wh*-clause in (25), the topmost set {NP, CP} is labeled either NP or CP (or, a shared-featural set <Q, Q>). Next, CI makes a final decision on whether each label is accepted or rejected in compliance with selectional requirements. In this case, for example, the NP label is ruled in and the first interpretation becomes available if a verb *see* selects a nominal. Likewise, the CP label and the second interpretation are obtained if *see* selects a clause.

(26) [$_{NP/CP<Q, Q>}$ [$_{NP}$ what$_{[Q]}$] [$_{CP}$ C$_{[uQ]}$ [$_{TP}$ I was holding ~~what~~ …]]]

Next, let us consider other complement-taking verbs such as *wonder*. In (27), *wonder* is followed by three different FR. As *wonder* selects interrogative complements (e.g., "I wonder if/*that it rains in here."), it is predictable from the outcome in (26) that *what*-headed FR in (27b) is acceptable. FR headed by a *wh*-phrase, *what town*, is also acceptable: as outlined in 2.2, this FR {*Wh*P, CP} is labelable as NP rooted in *n* of a noun *town*, or as CP. (27c), however, poses a

question about AL. Why is only *whatever* FR unlabeled as CP?[11)]

(27) a. I wonder what town you will visit.
b. I wonder what you want.
c. *I wonder whatever you want.
(a: Roberts 2010: 211; b, c: Lobeck and Denham 2013: 264)

A clue to the puzzle must lie in *whatever*. This word can be split into two morphemes: *what* and *ever*. *Ever* is used as a word itself, but it is also quite productive in word formation, as exemplified in n*ever*, how*ever*, whatso*ever*, to list a few. In addition to its morphological uniqueness, it universally quantifies over a set of entities (e.g., things, persons, places, etc.): for example, "(buy) whatever you want" can be rephrased by "anything that you want," providing a semantic representation such that "for all x, x a thing, you want x."

Seen from the above morpho-semantic perspective, *-ever* seems to be used as a functional morpheme qualified for a head status. Tozawa (2015) proposes an FR structure with *-ever* merging CP to form *Ever*P. Look at the structure in Figure 4. What is of theoretical significance is that his FR structure allows AL of the topmost {*Wh*P, *Ever*P} set by separately introducing *what* and *-ever*.[12)] Under AL, the set is labeled either *Wh*P or *Ever*P, with the former allowing for a nominal interpretation, "anything that you want" and the latter an adverbial interpretation, "in any case you want something."

Although Tozawa does not deal with the cases of *-ever* FR following *wonder*

Figure 4. The structure of the *whatever* FR based on Tozawa (2015)

such as (27c), his proposal correctly rules out the *whatever* FR in such environment. Looking at Figure 4 again, Minimal Search for labeling the topmost set detects only *-ever* and *n* (in *wh*P) as the equally closest heads, and it cannot reach C because it is already transferred and becomes invisible for the search. Consequently, the outcome is not CP, which would be an indirect question if it were interpreted at CI, and thus, it cannot satisfy the selectional requirement of *wonder*.

To sum up, in this section I have shown that AL promisingly accounts for APC dually realized either as a nominal or an adverbial. FRs and *wh-ever* clauses are analyzed along the same lines, which supports the validity of my proposal based on AL.

5. Syntactic change of absolute participial clauses

A basic assumption throughout my analysis presented in the previous sections is that the structure of APC lacks CP. In this section, some evidence for the CP-less structure is provided by observing the syntactic change of APC over time.

A brief look at the theoretic consensus of C-and-NOM (nominative Case) interaction will guide us to a better grasp of the historical data. The contrast in (28) clearly shows that NOM is assignable in finite environments such as the *that*-clause. In a non-finite environment such as (28b), Case is assigned in several ways including Exceptional Case-Marking (ECM; e.g., ACC assigned exceptionally by a transitive verb in main clauses).

(28) a. I believe (that) he/*him passed the exam.
b. I believe him/*he to have passed the exam.

The standard assumption of NOM assignment in Chomsky (2008) is that (i) C's features are inherited to T, then (ii) T probes DP to verify its unvalued φ-feature, and finally in return, (iii) DP moves to TP to be assigned NOM. The derivation is illustrated in Figure 5. In this system, C-to-T feature inheritance is a prerequisite for assigning NOM in finite clauses in English. Here, let us make a guess: What if C does not exist? Without C, NOM assignment is not available because it is driven by the features on T inherited from C. With this guess in mind, let us turn to the historical change of APC.

Figure 6 is a graphic summary of Nakagawa's (2011) corpus survey result of the frequency of APC in the periods of Middle, Early Modern, and Late Modern English (for short, ME, EModE, and LModE, respectively).[13] It suggests that APC emerged in the late ME period, and then they were used during the EModE period, with their gradual loss to the present since the beginning of the LModE period.

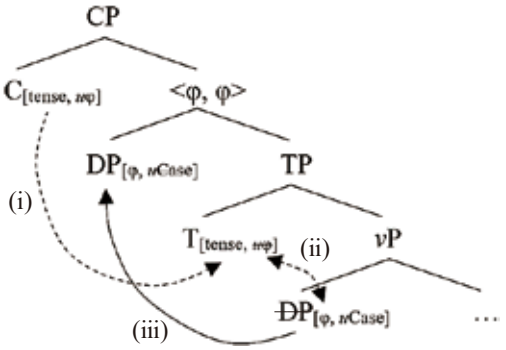


Figure 5. A model of NOM assignment in finite clauses

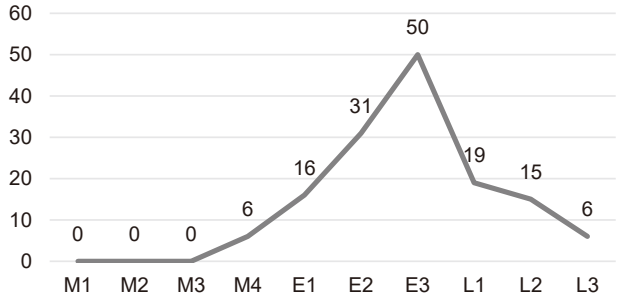


Figure 6. The frequency of APC
(per 500,000 words; based on Nakagawa 2011: 87)

If there is no C, *wh*-expressions are not attracted to the clause edge. In fact, there are samples of *wh* + *-ing* clauses found in all the three periods, as listed in (29)–(31). According to Nakagawa, the frequency of the *wh* + *-ing* order peaked in the middle of the EModE period and underwent a gradual loss

thereafter. These samples show that there used to be C, especially during the EModE period, for sure, in the structure of APC. Conversely, it also follows from the same set of facts that the absolute clauses in Present-Day English lack C because *wh*-fronting as in (29)–(31) is unacceptable.

(29) A Preost … seide in game 'Why chese ȝe nouȝt
a priest said in game 'why choose you not
me myself?' whos gaume oþere nouȝt Takynge gamefully,
me myself whose game other not Taking gamely
(ME: Visser 1966: 1154; cited in Tanaka 2021: 56)

(30) And then were seven Felons that received Sentence of Death; who being taken aside, Mr. Udall was called the second time
(EModE: Nakagawa 2011: 97)

(31) Which being done, he went on.
(LModE: Nakagawa 2011: 98)

Another thought of what we cannot do if there is no C is a type of head movement called V-to-C movement. Two examples in (32) are from Shakespeare's comedy *The Two Gentlemen of Verona*, written at the end of 16th century (in the EModE period). According to Radford (2020), the English at that time allows V to move not only to T (so that *know* can become *know'st* in its second-person, singular form in (32b), for example) but also subsequently move to C in yes/no questions. C was able to attract a tense-marked V, but in the Present-Day English, C is no longer able to do it and an auxiliary *do* is inserted into C instead (e.g., *Do/Don't* you know this play?).

(32) a. Saw you my master?
b. Know'st thou not his looks are my soul's food?
(Radford 2020: 230)

Turning to APC, several examples are found, though not many, taking on participial raising similar to V-to-C movement. Examples in (33) and (34) were both documented around the end of the 15th century, when ME was in transition to EModE.[14] The natural word-order with a subject followed by a present participial should be "*July seeing* this false fortune" and "*there being*

(then) a great congregation …," but in the examples *seeing* and *being* appear to move higher past their subjects *July* and *there*.

(33) Seyng Iuly this fals fortunite, The soroes greate in
Seeing July this false fortune the sorrows great in
hym so multiplied
him so multiplied

(34) the xxviij day of August …, being there thanne a grete congregacion of people

(Visser 1966: 1154, 1161; cited in Tanaka 2005)

Given a basic three-storied clause structure such as (35), as the subject ends up in the topmost XP (or TP, if it sounds more familiar to the readers), V-*ing* preceding the subject necessarily implies crossing over the XP boundary. Its destination host must be C strong enough to attract V-*ing* just as C does in (32). If this is on the right track, the subject + V-*ing* order is obtained as a consequence of C available around the EModE period. This reversed word-order is impossible in APC in Present-Day English, so this again leads to the same conclusion that the structure of APC lacks CP.

(35) … [$_{XP}$ DP$_{Subj}$ -*ing* [$_{vP}$ ~~DP$_{Subj}$~~ *v* [$_{VP}$ V …

In this section I have observed the syntactic change of APC. My assumption of its CP-less structure has been supported by three pieces of historical evidence: a gradual loss of nominative subjects over time, the absence of *wh*-movement, and verb-raising over the subject in APC in current English.

6. Conclusion

With the same structural disguise, APC can be realized as a nominal or as an adverbial. This ambiguity is accounted for in a straightforward manner by assuming AL, specifically by labeling APC as DP or -*ing*P, each of which is ruled in/out at CI. APC is seen as an empirical support for AL, and the AL-based analysis can be extended to the ambiguous realization of other clauses such as FR and *wh-ever* clauses.

I have assumed throughout this study that the structure of APC is simple: it lacks CP because it is not derived from its finite counterpart. This view is supported by the ongoing syntactic change of ACP from the Middle English period to the present. C-related phenomena such as NOM-subjects, *wh*-movement, and V-raising to the clausal edge in ACP used to occur in the past, which are lost or quite rare in current English.

A few problems remain unsolved. ACP introduced by *with* needs more careful consideration regarding its internal structure and the morphosyntactic status of *with* in its overt/null form. The proposal should be tested using the data of clausal ambiguity from languages other than English to validate AL attributed to third-factor principles in language generation.

Notes

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1) In a recent study by Chomsky, Gallego, and Ott (2019), merge is defined as "select two lexical items α and β and form the set {α, β} in a workspace" (For simplicity, I will, hereafter, use noncapital "merge" and take "workspace" as a phasal domain). Merge applies recursively to build a new structural object in a bottom-up manner, as seen in {the, attic}, {in, {the, attic}}, and then {toys, {in, {the, attic}}}, for example. In view of Hauser, Chomsky, and Fitch (2002) that recursion critically distinguishes human language from other animals' communication as well as the recent trend of less UG attribution, I assume that UG solely consists of merge. See Tsoulas (2017) for a slightly broader view of UG along the same lines.

2) I will not review in detail another case of LA merging two heads (X, Y). The labeling for this is thought to be quite limited, for example, to a root merged with a category-defining head (e.g., small *n*/*v* for noun/verb). As "water" can be used as a noun or verb (e.g., tap *water*$_{N}$, *water*$_{V}$ the flowers), a root like "√water" is category-free, and thus, gets labeled with a small *n* or *v*.

3) The other cases are object shift, in-situ subjects, and non-nominal subjects.

4) Figure 7 partly shows the derivation from (3b) to (3a) and how LA works to avoid the labeling conflict. *Wh*P (or *n*P, rooted in a categorizer-head *n*) escapes out of the XP-YP as reviewed in (2b-i), resulting in the C-label. Note that another LA option (2b-ii) does not apply because an interrogative Force feature [Q] of *wh*P is not shared with the clause-embedding C *that*, which has a declarative, not interrogative, Force feature.

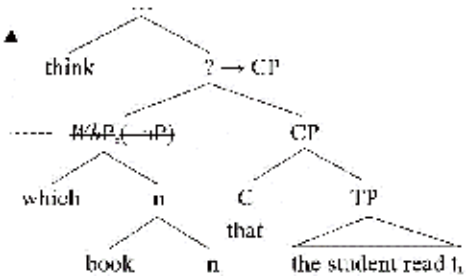

Figure 7. The derivation and LA of (3b)

5) (The Principle of) Full Interpretation is an interface condition that derivations crash at the interfaces if unvalued features remain unchecked.

6) This kind of deletion/alteration-based explanation of absolute/participial clauses is commonly used effectively in teaching grammar in the context of EFL.

7) According to his Syntactic Economy of Representation, saying "A given XP in LF should be realized with as few words/phrases as possible" (pages 65, 138), PC is preferred to *to*-infinitival clauses because, as is obvious in the contrast between "(not) locking a door" and "(not) to lock a door," the former is a more economical choice with fewer words and phrases.

8) Unlike Emonds, who does not assume any functional head for *-ing* as reviewed in 3.2, I assume that *-ing* qualifies for a head status as it characterizes the semantic and morpho-syntactic properties of its own clause. As it does not necessarily reflect a progressive aspect of an action when it is used in PC (see 3.1), I will refer to *-ing*(P) just as it is, to avoid using other common terms such as Asp(P) and Prog(P).

9) The derivational steps including LA in (20) is illustrated in Figure 8.

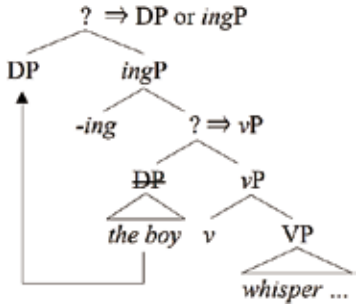

Figure 8. The derivation and LA of (20)

10) I thank Philip Nguyen and Hamish Barnetson for their valuable comments on the data.

11) Although Lobeck and Denham show a list of *-ever* FR unable to follow *wonder*, there are a few examples of *-ever* FR following *wonder* like this: "Then, while I was wondering whatever

you meant, you went down." (*A Shadow's Bliss* by Patricia Veryan). I will consider how to explain such cases in my future investigations.

12) Splitting a word into morphemes and assigning them independent syntactic statuses is not an unusual strategy. A similar analysis is found in Blümel and Pitsch (2019), where a German word *nachdem* "after," for example, is decomposed into $nach_P$ and dem_D to provide a cross-linguistic account of adverbial complementizers.

13) Here, ME roughly corresponds to the 12th–15th, EModE to the 16th–17th, and LModE to the 18th–9th centuries.

14) The sources of (33) and (34) are *John Hardyng Chronicle* and *The Paston Letters*, respectively.

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