

Adverbial Clauses in English Cookbooks

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Received: December 30, 2020

Revised: February 21, 2021

Accepted: May 13, 2021

Abstract

This study investigates adverbial clauses in English cookbooks. While most previous studies examined adverbial clauses in formal register, such as academic texts, this study contributes to the field by examining adverbial clauses in English cookbooks as cookbook sales have been rising as people are increasingly cooking and entertaining at home (Kelly, 2020). The data were collected from three best-selling cookbooks written by Briscione and Parkhurst (2018), Campanaro and Gambacarta (2020) and Oliver (2020). The data were manually extracted via adverbial connectors, such as *until*, *while* and *if* in dependent clauses. The results show that finite adverbial clauses appear the most often, followed by verbless adverbial clauses and non-finite adverbial clauses. These adverbial clauses are of four semantic classes: temporal, conditional, concessive, and reason, with temporal being the most productive, followed by conditional, concessive, and reason, respectively. The appearance of the various syntactic structures is due to the reduction of *complexity effect*. Productivity of temporal adverbials follows the principle of *iconicity of sequence*. Most adverbs appear at sentence final position because of the *end-weight principle* and *markedness theory*. This study is hoped to capture the distinctive characteristic of best-selling cookbooks with regards to sentence structures which, in turn, will provide a guideline for writing English language cookbooks.

Keywords: *adverbial clauses, iconicity of sequence, discourse pragmatic factor, subjectivity, end-weight principle, markedness theory*

1. Introduction

English is structurally known as an SVO language, as in *Mary likes salad*. However, the positions of adverbials as in example 1 are not fixed.

- (1)
 (a) **Actually**, Mary likes salad.
 (b) Mary likes salad **actually**.

Adverbials in English can be placed in different positions; either initial positions or final positions (Park, 2002; Diessel, 2005; Mala, 2005; Popa, 2008; Sæbø, 2011; Filipova, 2012; Wiechmann & Kerz, 2013; Tuchscherer, 2016; Příbylová, 2019; Megitt, 2019; Gries & Wulff, 2021; Yuan 2020), such as (2).

- (2)
 (a) **When I was young**, I liked reading comics.
 (b) I liked reading comics **when I was young**.

Example (2a) illustrates the adverbial clause in the initial position, whereas in example (2b), the adverbial clauses is placed in a final position. Although the use of adverbial clauses in different positions is not new academically, it has become a controversial issue where scholars have been arguing different ideas for the same things. Another point that makes adverbial clauses intriguing to study is the variety of structures that make up the clauses, as shown in (3).

- (3)
 (a) **Once the water has boiled**, add vegetables.
 (b) **Once boiling**, add vegetables.
 (c) **When I was young**, I liked reading comics.
 (d) **When young**, I liked reading comics.

(3a) and (3c) are *finite adverbial clauses*. (3b) is a non-finite adverbial clause. (3d) is a verbless adverbial clause (Diessel, 2005; Mala, 2005; Swan, 2016; Tuchscherer, 2016). The adverbial clauses in (3) are temporal adverbial clauses. Since the adverbial clauses in English are useful to support the flow of information (Mala, 2005), it is intriguing to study these structures of adverbial clauses as to when and why one variant is chosen over the others. Previous studies were found to focus on adverbial clauses in formal texts (Chafe, 1984; Rezaee et al., 2018). This study, however, changes the focus to commercial cookbooks due to the rise of cookbook sales in recent years as cooking and entertaining at home has become increasingly popular (forbes.com).

2. Literature review

This section reviews adverbial classes in different linguistic perspectives including different cognitive linguistic theories applied to adverbial clauses. To

further understand the textual appearance of adverbial clauses, studies on their contexts will be included.

2.1 Syntactic structures of adverbial clauses

Adverbial clauses in this study refer to finite and nonfinite dependent clauses that occur with independent clauses and serve to modify the main verb of the independent clauses (Filipova, 2012), such as (4).

(4) Peter plans to buy a new house **when he retires**.

When he retires is categorized as a finite adverbial clause containing the head *when*, the subject *he* and the finite verb *retires*. Filipova (2012) suggested that the conjunctions, such as *since*, *because*, *for*, *if* and *while* are crucial linguistic elements to determine the syntactic structure of adverbial clauses.

There are nine types of adverbial clauses with connectors. Although this study focuses on different types of adverbial clauses containing clause connectors, there are categories of adverbial clauses that do not have connectors. These clauses comprise *-ing* clauses and *to*- infinitive clauses, as shown in (5).

(5)

(a) Jack studied hard **expecting to pass the course**.

(b) Jack studied hard **to pass the course**.

Expecting to pass the course in (5a) and *to pass the course* in (5b) are classified as adverbial clauses (Swan, 2016) without connectors. Without connectors, although it is clear that the adverbial in (5b) is a purpose clause, the one in (5a) can imply either temporality or reason. To rule out the ambiguity, this study focuses only on adverbial clauses with connectors because the connectors provide transparent semantic clues.

2.2 Semantic classes of adverbial clauses

While adverbial clauses are structurally known as dependent clauses, Swan (2016) introduces nine classes of English adverbial clauses which are time, place, reason, concession, comparison, condition, purpose, effect and manner.

One of the common semantic classes of adverbial clauses is technically called *temporal adverbial clause*. It is introduced by the connectors *when*, *while*, *since*, *before*, *once* and *after* as given in (6).

(6) Mary liked listening to the radio **when she was young**.

When she was young is exemplified as a temporal adverbial clause. Aside from that, adverbial clauses could indicate places as they are introduced by *where* and *wherever* as shown in (7).

- (7) Peter has his lunch **where he works**.

Where he works is an *adverbial clause of place*. Along the same lines, there are *adverbial clauses of reason*. The connectors of this category are exemplified into *as*, *because* and *since*, as in (8).

- (8) Peter always works hard **because he wants to become successful**.

Because he wants to become successful is an adverbial clause of reason. Furthermore, a *concessive adverbial clause* indicates contrast. Common connectors used in this category are *while* and *though* as in (9).

- (9) **While I like sour** food, my sister likes spicy food.

While I like sour food represents a concessive adverbial clause that is contrasted with the independent clause *my sister likes spicy food*. The next category is *adverbial clauses of comparison* where the common connector is *as* ... *as*, such as (10).

- (10) Peter is *as* handsome *as* he is smart.

As handsome as he is smart is an example of adverbial clause of comparison. The sixth example of adverbial clauses is a *conditional adverbial clause* having *unless* and *if* as its adverbial connectors.

- (11) We may need to work from home **if needed**.

If needed in (11) represents conditional adverbial clauses. Another adverbial clause is known as *adverbial clauses of purpose*.

- (12) James always saves his money **in order that he can buy a new car**.

In order that he can buy a new car is an adverbial clause of purpose. The eighth category is *adverbial clause of effect*, normally used with the connector *so...that* where either adjective or noun could be placed in between.

- (13) The dinner tonight is **so delicious that I cannot stop eating.**

So delicious that I cannot stop eating is an example of adverbial clauses of effect. The last semantic category of adverbial clauses is *adverbial clause of manner*.

- (14) Jennifer swims swiftly as if she were a mermaid.

This study investigates the use of adverbial clauses with connectors with the application of cognitive and pragmatic theories to explain their occurrences.

2.3 Pragmatic and cognitive aspects of adverbial clauses

Adverbial clauses can be classified into finite and non-finite adverbial clauses (Wiechmann & Kerz, 2013).

(15)

(a) **When I listen to this song,** I smile.

(b) **When listening to this song,** I smile.

(15a) is a finite adverbial clause since it contains both the subject and the finite verb, whereas (15b) is a non-finite adverbial clause as the subject and the finite verb are omitted.

The occurrence of these adverbial clauses could be interpreted by cognitive theories. *Markedness theory* refers to regular and irregular linguistic patterns. The use of an adverbial clause in the initial position is considered as marked, an irregular pattern. On the other hand, the adverbial clauses that occur in the final position are viewed as *unmarked*, referring to a regular pattern (Prideaux & Hogan, 1993). So, the adverbial clauses in (15) are considered marked.

On the other hand, *the end-weight principle* focuses on the length of clauses (Příbylová, 2019) as exemplified in (16a) and (16b).

(16)

(a) **It** is important **to listen to what she suggests.**

(b) **To listen to what she suggests** is important.

(16a) is an extraposed structure, while (16b) is a non-extraposed structure. The end-weight principle applies in (16a) in which the heavier clause *to listen to what she suggests* is at the final position, while the expletive *it* is syntactically added to fill in the position of subject as the subject is compulsory in all English independent clauses (Radford, 2009). On the contrary, (16b),

without the application of end-weight principle, creates an impact called “left-heavy clauses” (Megitt, 2019). The end-weight principle applies to *double-object constructions* (Příbylová, 2019).

(17)

(a) Mary gave a cup **to her best friend**.

(b) Mary gave **her best friend** a cup.

In (17), the end-weight principle applies to (17a) in which the prepositional phrase *to her best friend* is longer and heavier than the noun phrase *a cup*.

Aside from the length, the final position is the position of the most important information or message. This placement is called *important information to the plot* (Levinsohn, 1992), as shown in (18).

(18) Anastasia was jealous of Cinderella **after she could perfectly wear a glass shoe**.

Example (18) shows that wearing the glass shoe in Cinderella’s story is the climax of this story which is important information to the plot. That is why this temporal adverbial clause is placed at the final position in order to arouse the readers’ attention.

The placement of an adverbial clause in the final position is also due to a writer’s subjective comment (Mala, 2005), as in (19).

(19) The importance of looks becomes even more **when considering the type of occupations to which girls, often unrealistically aspire**.

(Mala, 2005, p. 92)

The subjective interpretation of comment in the adverbial clause in (19) could be noticed by the epistemic verb *considering*.

In addition to the aforementioned cognitive factors that determine the existence of the adverbial clauses, the placement of adverbial clauses in the initial position can be explained through *pragmatic-discourse principle* or *given and new information* (Diessel, 2005; Wiechmann & Kerz, 2013; Tuchscherer, 2016), as in (20).

(20) I like listening to The Carpenters’ songs. **When I listen to their songs**, I feel relaxed.

In (20), *when I listen to their songs* is placed at the initial position as it is information that links with a previous sentence, referring to a discourse unit that links with a previous discourse.

The reason for the positions of adverbial clauses also concerns *iconicity of sequence*, referring to the expression of prior events before subsequent events (Duran et al., 2007; Diessel, 2008; Ji, 2010; Hall & Caponigro, 2010), as in (21).

(21)

(a) I visited my aunt **before I went home.**

(b) **After I had dinner,** I went to see a movie.

In (21), the main clause *I visited my aunt* and the temporal adverbial clause *after I had dinner* show that one event takes place before the other, which follows iconicity of sequence. The above cognitive and pragmatic theories will be considered when interpreting adverbial clauses in English cookbooks.

2.4 Related previous studies

Previous studies of adverbial clauses have been conducted with various texts which could be classified into three domains. The first one is derived from international corpora, such as BNC, ICE and COCA. The second domain is general academic texts. The last domain is semi and informal texts.

2.4.1 Corpus linguistics

A number of previous studies employed international corpora, such as BNC, ICE and COCA to observe adverbial clauses. A reliable study on this platform is Crompton (2006) using BNC to investigate the conditional adverbial clauses *if* and the temporal adverbial clauses *when*. The results of Crompton's (2006) study showed that the percentages of conditional adverbial clauses *if* and temporal adverbial clauses *when* are 41.8 percent and 58.2 percent, respectively. The finite adverbial clauses occur mostly at the final position at 74.37 percent. In a similar study, Diessel (2008) used ICE to observe temporal adverbial clauses, such as *when*, *before* and *until*. Most occurrences were at the final position at 82 percent. Diessel's (2008) results concern the iconicity of sequence. Along the same lines, Wiechmann and Kerz (2013) selected BNC to examine the order of the concessive adverbial clauses *although* and *whereas*. The results show that they mostly occur at the final position at 56.35 percent (Wiechmann & Kerz, 2013). In addition, Phoocharoensil (2017) specifically examined the adverbial clauses in COCA. He focused on four adverbials as in *hence*, *so*, *therefore* and *thus*. Interestingly, he found new patterns of adverbial clauses in this corpus, such as (22).

- (22) [...] will cause EPA to insist upon submission of the SIP by the original deadline **and thus trigger potential sanctions.**
(Phoocharoensil, 2017, p. 158)

In (22), *and thus* was added as a new grammatical pattern. The studies that used corpus database to study adverbial clauses show alliance in that the finite adverbial clauses occur mostly at the final position. To apply cognitive and pragmatic principles as in (22), it is thought that the use of adverbial clauses in the final position is due to placing *important information to the plot*.

2.4.2 Academic texts

Some studies on adverbial clauses have been conducted on academic texts. Chafe (1984) found that most texts used adverbial clauses in the initial position at 62.90 percent. Chafe (1984) explained that the initial position of adverbial clauses in academic texts is due to *guidepost*, referring to giving a hint before the actual information the speakers really want to say, such as (23).

- (23) [...] **if we approach the topic of cognitive development from a theoretical point of view**, we are immediately confronted with the question of which theory, or theories, to consider.
(Chafe, 1984, p. 445)

The conditional adverbial in (23) is in the initial position because the writer gives information about guiding what one should look at. Guidepost usually comes before the information that the writer wants to emphasize, so it is the same as given-new information mentioned earlier. Within the same text variety, Gries and Wulff (2021) used academic essays written by English native speakers to study adverbial clauses. The results show that temporal adverbial clauses mostly occur in the initial position. Along the same lines, George (2012) studied adverbial clauses in argumentative essays. The results show that conditional adverbial clauses mostly occur in the initial position.

The majority of adverbial clauses in initial positions were found in applied linguistic texts. Gustilo (2010) observed adverbial clauses written by non-native speakers, referring to Filipino ESL learners, and found that conditional adverbial clauses are at 75 percent as in (24a). On the other hand, Rezaee et al. (2018) observed texts written by native speakers of English, determined by the authors' affiliation, and they found 67.7 percent of adverbial clauses of reason in (24b).

(24)

- (a) This is a big turn from the FTA since the writer uses another positive politeness strategy by stating the advantages people (the Arab nation in particular) will get **if the previous suggestions are carried out.**

(Gustilo, 2010, p. 32)

- (b) “The English words were selected from the 5,000 frequent words in COBUILD corpus (Bank of English). **Because these frequencies might not apply to FL/L2 learners,** the selected words were checked against a word list based on EFL textbooks used in the Netherlands.”

(Rezaee et al., 2018, p. 336)

The use of adverbial clauses in the initial position in (24b) is interpreted as given-new information, as the referential pronoun *these frequencies* is interpreted as given information as it links to the information in the previous sentence as in *the 5,000 frequent words*. Although the researchers focus on the same text variety, different groups of participants lead to different results.

Adverbial clauses in scientific texts share the same trend as the above. For example, Filipova (2012) took advantage of health scientific texts to examine adverbial clauses. Over 80 percent of the data in his study show that adverbial clauses commonly occur in the initial position, such as (25a). Along the same lines, Tuchscherer’s (2016) study supported Filipova’s findings in that most adverbial clauses in scientific texts occur in the initial position in (25b).

(25)

- (a) **Because everyday work is so repetitive and familiar to us,**
we know exactly what it does to us.

(Filipova, 2012, p. 28)

- (b) **When a red supergiant becomes very massive,** it can lose its
outer layers in a huge explosion.

(Tuchscherer, 2016, p. 10)

The study of adverbial clauses specifically in scientific texts makes the result become clearer regarding the syntactic position of adverbial clauses. It is able to capture the distinctive pattern that the adverbial clauses in this text variety are usually used in the initial position.

2.4.3 Semi-formal and informal texts

Besides scientific texts, some studies focus on semi-formal and informal texts. For example, Diessel (2005) studied adverbial clauses in

conversation and fiction. Hastuti (2009) studied adverbial clauses in *Time Magazine*. The results of both studies showed that finite adverbial clauses are commonly used in different positions, such as (26).

(26)

(a) It had certainly changed in the short hour **since I had come out.**
(Diessel, 2005, p. 454)

(b) **As Manhattan real estate prices have skyrocketed,** the districts legacy and its perch atop Central Park have enticed real estate developers searching for the next up- and-coming neighborhood.

(Hastuti, 2009, p. 40)

Additionally, Ji (2010) used narrative texts to study only initial temporal adverbial discourse functions. The results showed that the majority of initial temporal adverbial clauses are used with the interpretation of linking given and new information, as shown in (27).

(27) Ryan said he was sorry for what happened. **When I asked him what exactly did happen,** he had no explanation.

(Ji, 2010, p. 2)

The temporal adverbial clause in (27) is used in the initial position to connect the given information with the previous sentence.

Previous studies of adverbial clauses focus on academic texts and semi-academic texts and only a few studies focus on informal texts. Due to the commercial demand of cookbooks within these past few years (forbes.com), this study, thus, investigates how the adverbial clauses appear in cooking instructions. It aims to answer the following research questions.

1. What are the types of syntactic structures and semantic classes of adverbial clauses that appear in English cookbooks?
2. What are the frequencies of each type of syntactic structure and semantic class?
3. What are their positions and the frequencies of each position?
4. What are the determinant factors of their appearances?

3. Methodology

The source of data is English cookbooks because, linguistically, they are a reading source for everyone, with unique adverbials (Kaneyasu & Kuhara, 2020) and a lot of modifiers (Ekasani et al., 2018). In addition to their soaring

sales, the topic of food has become increasingly popular as people in the 21st century turn their attention to take care of their health (Short, 2006).

There are three reliable sources of cookbooks used in this study as in Briscione and Parkhurst's (2018), Campanaro and Gambacarta's (2020) and Oliver's (2020) cookbooks. These are best-selling cookbooks (amazon.com) written either by British or American writers. James Briscione is a celebrity chef. His experience in the field of cooking includes chef de cuisine at Stitt's Highlands Bar and Grill. Academically, he is a chef-instructor at the Institute of Culinary Education. The second English cookbook is by Campanaro and Gambacarta (2020). Joey Campanaro has been the owner of The Little Owl & Little Owl restaurant since 2006. The last cookbook is by Jamie Oliver, a British chef and a guru in the field of food. He runs well-known restaurants around the world, such as Barbecoa, Jamie Oliver and Fifteen Restaurant. Oliver is renowned for his cooking TV show on a UK channel.

As mentioned before, in order to avoid the effect of subjectivity that may affect the reliability of the results, this study focuses on the adverbial clauses that contain overt heads, such as *while*, *when*, *after* and *as*. Without an overt head, it could lead to several interpretation in (28).

(28) She smiles happily, listening to a love song.

Without the overt head of adverbial clauses spelt out, it can be subjective for one to interpret the covert adverbial conjunctions as either *while*, *when*, *after* and *as*.

These three English cookbooks contain approximately 182,000 words. There are a total 391 tokens of adverbial clauses with connectors. These tokens are analyzed based upon their syntactic structures and semantic classes as in Table 1 and Table 2.

Table 1: Syntactic structures of adverbial clauses

(29)

Syntactic Structures	Examples
Finite adverbial clauses	(a) Let it all get golden, <u>while you heat the grains according to the packet instructions</u> .
Non-finite adverbial clauses	(b) Stir in the lemon and parsley just <u>before serving</u> .
Verbless adverbial clauses	(c) Place the skins in the pan to crisp up on both sides, removing it <u>when golden</u> .

There are three types of syntactic structures of adverbial clauses (Diessel, 2005; Mala, 2005; Swan, 2016; Tuchscherer, 2016). The first type is finite

adverbial clauses, referring to the dependent clauses that contain the subject and the main verb as shown in (29a). The second type is the non-finite clauses used where the subject is omitted as in (29b). The last category is verbless adverbial clauses where the subject and the verb are omitted as in (29c). Aside from the syntactic structures, the semantic classes of adverbial clauses are illustrated in Table 2.

Table 2: Semantic classes of adverbial clauses

(30)

Semantic classes	Examples
Temporality	(a) Continue cooking <u>until the butter takes on a deep brown color and has a nutty, roasted aroma.</u>
Condition	(b) Rip off the overhanging half of the paper, then fold and press in the edges of the mash and patch up any gaps, using a knife to help you smooth it out and make a pattern, <u>if you like.</u>
Concession	(c) <u>While raw cucumbers are often sought out for their crisp texture,</u> cucumbers' flavor can actually be heightened by cooking them briefly; the best methods are sautéing or stir-frying.)
Reason	(d) Using a sharp knife, carefully remove the kernels by slicing downward along the ear. <u>Since the corn is cooked,</u> they should slice off easily and not fling around too much.

Table 2 presents the semantic classes of adverbial clauses in English cookbooks. (30a) represents the type of temporal clauses as indicated by the word *until*. (30b) represents the type of conditional clauses as indicated by the conjunction *if*. The connector *while* indicates concessive adverbial clauses as in (30c). (30d) is an adverbial clause of reason. These clauses are in different positions in a sentence, as shown in (31).

(31)

- (a) **While raw cucumbers are often sought out for their crisp texture,** cucumbers' flavor can actually be heightened by cooking them briefly; the best methods are sautéing or stir-frying.
(Initial position)
- (b) Continue cooking **until the butter takes on a deep brown color and has a nutty, roasted aroma.** (Final position)

Example (31) illustrates different positions of adverbial clauses in English cookbooks.

The analysis of this study follows Wongkittiporn's (2021) pilot study of adverbial clauses. There are several steps to analyze the data. Firstly, the data were collected from English cookbooks. Secondly, the data were read to seek the keywords of adverbial connectors used with their independent clauses, such as *when*, *while* and *before*. Then the structure of finite adverbial clauses, non-finite adverbial clauses and verbless adverbial clauses were interpreted based on Table 1. The semantic classes, such as temporal adverbial clauses, were analyzed based upon Table 2.

After the data were collected, three experts validated the data in order to ensure accuracy and reliability. Some of the tokens were randomly validated by three experts in the field of English. The data validation process follows the Index of Item-Objective of Congruence (IOC) process.

4. Results

Approximately 182,000 words with 391 tokens of adverbial clauses were extracted. The syntactic structures of the adverbial clauses are shown in Table 3.

Table 3: Syntactic structures of adverbial clauses

Syntactic structure	Frequency	Percentage
Finite adverbial clauses	211	53.96%
Verbless adverbial clauses	129	33%
Non-finite adverbial clauses	51	13.04%
Total	391	100%

Table 3 shows that finite adverbial clauses appear the most often, which is more than half of the data, followed by verbless and non-finite adverbial clauses respectively.

Table 4: Semantic classes of adverbial clauses

Semantic classes	Frequency	Percentage
Temporality	331	84.65%
Condition	45	11.51%
Concession	12	3.07%
Reason	3	0.77%
Total	391	100%

Temporal clauses are the majority in the data, with reason clauses as the smallest minority. Their connectors are detailed in Table 5.

Table 5: Adverbial connectors with different semantic classes

Types	Adverbial connectors	Frequency	Percentage
Temporality	<i>until</i>	218	55.75%
	<i>when</i>	48	12.28%
	<i>before</i>	29	7.42%
	<i>while</i>	16	4.09%
	<i>once</i>	20	5.11%
Condition	<i>if</i>	45	11.51%
Concession	<i>while (but)</i>	12	3.07%
Reason	<i>since</i>	3	0.77%
Total		391	100%

Table 5 shows that among the 8 adverbial connectors found, 5 indicate temporality. The other 3 semantic classes are headed by only one connector each. With regards to temporal connectors, *until* occurs the most at 55.75 percent, followed by *when*, *before*, *once* and *while* at 12.28 percent, 7.42 percent, 5.11 percent and 4.09 percent, respectively. While the conditional adverbial clauses with *if* occur at 11.51 percent, the concessive *while* occurs at 3.07 percent. Surprisingly, the connector for reason *since* occurs at only 0.77 percent. Their positions are shown in Table 6.

Table 6: Positions of adverbial clauses

Semantic Classes	Connectors	Initial	Final
Temporality	<i>until</i>	0 (0%)	(218) (100%)
	<i>when</i>	32 (66.67)	16 (33.33)
	<i>before</i>	2 (6.89%)	27 (93.11%)
	<i>while</i>	1 (6.25)	15 (93.75)
	<i>once</i>	20 (100%)	0 (0%)
Condition	<i>if</i>	24 (53.33%)	21 (46.67)
Concession	<i>while (but)</i>	11 (91.67%)	1 (8.33)
Reason	<i>since</i>	2 (66.67%)	1 (33.33%)

The data show that *once* and concession *while* clauses appear mainly at the initial position. The others that are most likely to be at the final position are *until*, *before*, and temporal *while* clauses. *When*, *if* and *since* clauses are likely to be found at both positions.

4.1 Clausal structures

This section presents the findings on different connectors with the three clausal structures, finite, non-finite, and verbless clauses. All the 8 connectors appear with finite adverbial clauses. *Until*, *when*, *once* and *if* were found with all three clausal structures. *Before*, temporal *while*, concessive *while*, and *since* were not found with verbless clauses. Concessive *while* and *since* clauses were also not found in non-finite clauses in the data.

Table 7: Percentage of adverbial clauses based upon types

Adverbs	Finite clause	Non-finite clauses	Verbless clauses
1. <i>until</i>	55.96%	0.93%	43.11%
2. <i>when</i>	64.58%	10.42%	25%
3. <i>before</i>	10.34%	89.66%	0
4. Temporal <i>while</i>	75%	25%	0
5. <i>once</i>	45%	5%	50%
6. <i>if</i>	42.22%	28.89%	28.89%
7. Concessive <i>while</i>	100%	0	0
8. <i>since</i>	100%	0	0

4.1.1 Temporal connectors

The temporal connectors that appear with all three clause structures are *until*, *when*, and *once*.

Table 8: *Until*

Syntactic structures	Frequency	Percentage
1. Finite adverbial clauses (i.e. Cook on the grill with the lid closed <u>until the butter is melted.</u>)	122	55.96%
2. Non-finite adverbial clauses (i.e. Cover to keep warm <u>until serving.</u>)	2	0.93%
3. Verbless adverbial clauses (i.e. Add the pork steak and cook for 8 minutes or <u>until golden.</u>)	94	43.11%
Total	218	100%

The majority of *until* clauses appear in finite clauses at 55.96 percent followed by verbless clauses and non-finite clauses at 43.11 percent and 0.93 percent, respectively. The three clauses also appear with *when*, as shown in Table 9.

Table 9: *When*

Syntactic structures	Frequency	Percentage
1. Finite adverbial clauses (i.e. <u>When it's looking really golden</u> , roll the pastry out a little to fit the pan and place it over the top.)	31	64.58%
2. Non-finite adverbial clauses (i.e. <u>When selecting summer squash</u> , look for smaller specimens as these tend to have a better ratio of firm flesh to soft seed pockets which tend to become mushy when cooked.)	5	10.42%
3. Verbless adverbial clauses (i.e. Place the skins in the pan to crisp up on both sides, removing it <u>when golden</u> .)	12	25%
Total	48	100%

Most occurrences of *when* clauses are with finite clauses at 64.58 percent, followed by verbless and non-finite clauses at 25 percent and 10.42 percent, respectively. Another temporal adverbial that appears in all three clauses is *once* in Table 10.

Table 10: *Once*

Syntactic structures	Frequency	Percentage
1. Finite adverbial clauses (i.e. <u>Once the skin is crispy</u> , move it to sit on top of the salmon.)	9	45%
2. Non-finite adverbial clauses (i.e. <u>Once boiling</u> , turn the heat off and gently arrange the potatoes on the surface of the stew.)	1	5%
3. Verbless adverbial clauses (i.e. <u>Once hot</u> , add the pork steak and cook for 8 minutes.)	10	50%
Total	20	100%

The most productive use of *once* is in verbless adverbial clauses at 50 percent followed by finite adverbial clauses and non-finite adverbial clauses at 45

percent and 5 percent, respectively. Unlike *when*, *until*, and *once*, only finite and non-finite clauses appear with *before* in Table 11.

Table 11: *Before*

Syntactic structures	Frequency	Percentage
1. Finite adverbial clauses (i.e. Remove from the heat <u>before the garlic begins to brown and let cool at room temperature.</u>)	3	10.34%
2. Non-finite adverbial clauses (i.e. Stir in the lemon and parsley just <u>before serving.</u>)	26	89.66%
3. Verbless adverbial clauses	0	0%
Total	29	100%

The majority of *before* are used with non-finite adverbial clauses at 89.66 percent, followed by finite clauses at 10.34 percent. No verbless adverbial clauses were found with *before*. Likewise, verbless adverbial clauses do not appear with temporal *while* in Table 12.

Table 12: Temporal *while*

Syntactic structures	Frequency	Percentage
1. Finite adverbial clauses (i.e. Place in the pan to lightly char for 3 minutes <u>while you squeeze the lime juice into a blender with ½ a tablespoon of red wine vinegar.</u>)	12	75%
2. Non-finite adverbial clauses (i.e. Combine the vinegar, shallot, and a pinch each of salt and pepper in a medium bowl. Mix well. Set aside to macerate <u>while preparing the hazelnut oil.</u>)	4	25%
3. Verbless adverbial clauses	0	0%
Total	16	100%

The majority of temporal *while* clauses occur with finite clauses at 75 percent. Only, only 25 percent are with non-finite clauses. No verbless clauses were found.

4.1.2 Other adverbial clauses

Like temporal *while*, concessive *while* clauses do not appear in verbless clauses. Concessive *while* adverbs only appear with finite clauses in the data in Table 13.

Table 13: Concessive *while*

Syntactic structures	Frequency	Percentage
1. Finite adverbial clauses (i.e. <u>While raw cucumbers are often sought out for their crisp texture</u> , cucumbers' flavor can actually be heightened by cooking them briefly; the best methods are sautéing or stir-frying.)	12	100%
2. Non-finite adverbial clauses	0	0%
3. Verbless adverbial clauses	0	0%
Total	12	100%

Another adverbial clause that appears with all sentence structures is *if* clause in Table 14.

Table 14: *if*

Syntactic structures	Frequency	Percentage
1. Finite adverbial clauses (i.e. <u>If the mixture becomes too thick</u> , add water and continue cooking to desired consistency.)	19	42.22%
2. Non-finite adverbial clauses (i.e. Top with almonds <u>if using</u> .)	13	28.89%
3. Verbless adverbial clauses (i.e. Season to taste with salt, pepper, and a pinch of sugar <u>if necessary</u> .)	13	28.89%
Total	45	100%

Table 14 reveals that *if* clauses appear the most in finite clauses. Its appearance in non-finite and verbless clauses share the same frequency. Unlike *if* clauses, the adverb of reason *since* only appears with finite clauses in Table 15.

Table 15: Reason *since*

Syntactic structures	Frequency	Percentage
1. Finite adverbial clauses (i.e. Using a sharp knife, carefully remove the kernels by slicing downward along the ear. <u>Since the corn is cooked</u> , they should slice off easily and not fling around too much.)	3	100%
2. Non-finite adverbial clauses	0	0%
3. Verbless adverbial clauses	0	0%
Total	3	100%

The findings above for an entire section will be discussed below.

5. Discussion

This section discusses the use of connector headed clauses in selected English cookbooks. The discussion concerns, syntactic, semantic and pragmatic aspects.

5.1 Syntactic aspect of adverbial clauses in English cookbooks

As presented earlier, the majority of adverbial clauses found are finite, followed by verbless and non-finite clauses, respectively. The productivity of the finite adverbial clauses is due to the fact that they facilitate the readers' understanding to the optimal level where the subject and the finite verb are clearly spelt out.

Non-finite and verbless adverbial clauses are, nevertheless, still considered productive because they are economical. Their weakness, however, is the longer cognitive process, technically called *complexity effects* (Gordon & Lower, 2012), as demonstrated in examples (32a) and (32b).

(32)

- (a) Once hot, cook the salmon in ½ a tablespoon of olive oil for 4 minutes.
- (b) When the sauté pan is hot, add the oil.

The verbless adverbial clauses as in (32a) is more economical as the subject and the copular *be* do not need to be spelt out. However, the readers may not understand whether the salmon should be put into the pan, the pot or the oven. By spelling out the subject as in *the sauté pan* as in (32b) the author makes the text read easier. This avoids the reader's confusion and misunderstanding. In cooking texts, such confusion hardly happens as the clues are given in the preceding context.

(33)

- (a) Place **a sauté pan** with a thin layer of oil over medium-high heat. **When hot**, pan-fry the burgers for about 6 minutes per side, flipping once until well browned and cooked through.

Normally, the omitted subject can be traced in the preceding context. For example, the subject in the temporal adverbial *when hot* can be traced in the higher context which is **a sauté pan**.

Verbless adverbial clauses are productive in English cookbooks where this could be explained by the reason of economical principle as it is a compact structure (Kim, 2020) and the avoidance of confusion of the tense in example (34).

(34)

- (a) Season to taste with salt, pepper, and a pinch of sugar **if necessary**.
 (b) Serve with salad, or wild garlic **if in season**.
 (c) **When completely cold**, cover with foil and chill in the fridge for 3-4 hours, or overnight if you can.

The use of verbless adverbial clauses is syntactically economical since the subject and the finite verbs to indicate tense are not required to be spelt out. In terms of the subject, adding the expletive *it* to fulfil EPP features, referring to the requirement of subject in all English clauses (Radford, 2009) is possible. However, omitting the subject does not affect understanding of a sentence, but makes it more condensed. In addition, when there is an option between verbless and nominal clauses, Butts (2006) indicated that verbless clauses are more preferable so as to avoid confusion regarding temporal indication. Moreover, Butts also indicated that the use of verbless adverbial clauses is higher than non-finite clauses as the latter could have several interpretations in English, such as gerunds, nominal gerunds, verbal gerunds and a verb acting as a noun. This could, therefore, make the users become confused.

The lowest frequency of non-finite clauses, interchangeably known as *-ing* clauses could be explained by NP-like form (Wongkittiporn & Chitrakara; 2018). The use of *-ing* clauses functions as the complement of PP and AdvP. Since it has the characteristics of NP like form, the *-ing* clauses appearing as the object could be interpreted as a single word.

(35) Stir in the lemon and parsley just **before serving**.

Serving as in (35) functions as a noun phrase. Therefore, the use of *-ing* clauses as the complement of the PP and AdvP positions is due to the NP-

like form (Wongkittiporn & Chitrakara, 2018). Despite having the function of adverbial clauses, it is the position where *-ing* clauses can only occur, while the *to-* infinitive cannot as in **Stir in the lemon and parsley just before to serve*. This could be a reason to explain why the use of *-ing* clauses as the complement of PP and AdvP appear the lowest.

5.2 Semantic aspects of adverbial clauses in English cookbooks

While Swan (2016) generally highlighted nine semantic classes of adverbial clauses in English, only four semantic classes of adverbial clauses are commonly found in the data. They are adverbial clauses of reason, condition, concession, and temporality.

Adverbial clauses of reason have the lowest frequency in this study because cooking is not concerned so much with reasons that need justification like scientific research. It mainly involves enjoyment and creativity (Feeney, 1992).

Conditional adverbial clauses were commonly found because options are open for special techniques and personal preferences (George, 2017).

(36)

- (a) If you have a meat thermometer, it should read 75C/170F.
- (b) Whip the egg white and cream of tartar if using an electric mixer until frothy.

The conditionals above are used because not every kitchen has this special equipment. Although a meat thermometer and an electrical mixer make one's cooking easier, the cooking can continue without them.

In regard to concessive adverbial clauses in this study, the concessive expressions in cookbooks are about highlighting contrast between two ideas, as in (37).

(37)

- (a) While fresh basil pesto is a quick condiment to put together, pine nuts are expensive!
- (b) While the cooked meat of crustaceans can vary in texture from animal to animal, the flavor across the class is very similar, with the greatest variation coming from the organism's environments and diets.
- (c) While raw cucumbers are often sought out for their crisp texture, cucumbers' flavor can actually be heightened by cooking them briefly; the best methods are sauteing or stir-frying.

- (d) **While lettuces can add color, texture and bulk to a meal,** it has very little flavor.

In (37a), the basil pesto is usually made with pine nuts, but pine nuts are expensive, so it can be made without pine nuts. In (37b) the contrast is shown between the fact that texture is different in each crustacean, but the flavor is similar. In (c), people generally enjoy the crisp texture of the cucumber, but they are more flavorsome when slightly cooked. However, when slightly cooked, they are not as crispy. In (37d) lettuces usually adds color and texture, but actually, it has very little flavor.

Reason, concessive and conditional adverbs are only the minority when compared to temporal adverbial clauses. This is because the heart of cooking is time management (Sunaryo et al., 2019). Without clear instructions on time, the instructions can be difficult to follow. The writers thus need to temporally explain what needs to be done first, secondly and simultaneously until accomplishment, to avoid confusion.

When temporal adverbials are in the initial position of the sentence, it is about when to move on the next step of the process in example (38).

(38)

- (a) **When very aromatic,** add the roasted vegetables.
 (b) **Once hot,** add the pork steak and cook for 8 minutes [...]

In (38a), the cook needs to wait until the ingredients become fragrant before adding roasted vegetables. In (38b), the cook has to wait until the pan is hot to add the pork steak. Simultaneous events are also described by adverbials at either initial or final position of the sentence (Wurmbrand, 2014) as shown in (39).

(39)

- (a) **When toasting any seed or nut,** don't walk away from the pan.
 (b) Set aside to macerate **while preparing the hazelnut oil.**

In (39a), the action of toasting nuts and remaining at the pan happen simultaneously. In (39b), preparing hazelnut oil and setting aside the other item to macerate occur at the same time.

Placing adverb clauses at the final position indicates the end point of the activity called *accomplishment* (Kearns, 2011). The activity verbs of cooking, such as *cook*, *roast*, *bake* and *blend* have time limits, as shown in (40).

- (40)
- (a) Cook over medium heat, stirring occasionally, until the strawberries become very soft, about 10 minutes.
 - (b) Cook until the potatoes are completely tender, about 20 minutes.
 - (c) Roast until the carrots are tender and browned around the edges, about 25 minutes.
 - (d) Bake until the cheese melts and the marinara is warmed through, about 8 minutes.
 - (e) Bake until golden brown and crispy, 15 minutes.
 - (g) Blend until creamy, about 30 minutes.
 - (h) Not everyone always gets to the party at the same time, but they'll pop when ready, 4 to 6 minutes.
 - (i) Let it sizzle and pop while it cooks, releases its water and wilts, about 3 minutes.

The word *until* indicates an end point which is accomplishment.

5.3 Pragmatic aspects of adverbial clauses in English cookbooks

In the layer of pragmatic aspects, there are several reasons to explain the use of adverbial clauses in English cookbooks. The pragmatic order of adverbial clauses in this study follows *iconicity of sequence* (Duran et al., 2007; Diessel, 2008; Ji, 2010; Hall & Caponigro, 2010). When they occur in the initial position, they are explained by discourse pragmatic factors (Diessel, 2005; Wiechmann & Kerz, 2013; Tuchscherer, 2016), referring to linking given with new information. However, the use of adverbial clauses in the final position is explained by *end-weight principle* (Wiechmann & Kerz, 2013) and subjectivity (Mala, 2005).

5.3.1 Iconicity of sequence

The temporal adverbial clauses as in *once hot, cook it for 2 minutes* mostly occur in English cookbooks following the principle of *iconicity of sequence*, referring to the expression of prior events before subsequent events (Duran et al., 2007; Diessel, 2008; Ji, 2010; Hall & Caponigro, 2010). The use of temporal adverbial connectors that are related to the iconicity of sequence is shown in Table 17.

Table 17: Positions of temporal adverbial clauses

Connectors	Initial position		Final position	
<i>Once</i>	20	100%	0	0%
<i>Until</i>	0	0%	218	100%
<i>Before</i>	2	6.89%	27	93.11%

Iconicity of sequence is divided into prior and later events. *Once*, indicating prior events was found only in the initial position, as shown in (41).

- (41)
- (a) **Once the skin is crispy**, move it to sit on top of the salmon.
 - (b) **Once hot**, cook the salmon in ½ a tablespoon of olive oil for 4 minutes.

The use of *once* in (41a) indicates the completeness of initial steps before continuing to the next process. That is, the crispiness of the fish skin must occur first. In (41b), waiting for the pan to become hot is the first step before cooking salmon. On the other hand, when the events occur subsequently, they appear with temporal adverbials *until* and *before* at the final position in (42).

- (42)
- (a) Fry **until lightly golden**.
 - (b) Stir in the lemon and parsley just **before serving**.
 - (c) Remove from the heat **before the garlic begins to brown**.

In (42a), frying is the first event, while becoming golden is a sequential event. Temporal adverbial clauses *before* are located in the final position, as in (42b) and (42c) as they indicate subsequent events. In addition, the use of the adverbial connector *while* in English cookbooks in the final position always indicates temporality as in Table 18.

Table 18: Temporal adverbial clauses *while* in different positions

Positions	Temporal	
Initial position	1	6.25%
Final position	15	93.75%
Total	16	100%

Table 18 reveals the different use of adverbial clauses *while* as found in different positions. The majority of temporal *while* clauses are used at the final position at 93.75 percent. This indicates the simultaneity between the events in dependent and independent clauses. On the other hand, the minority of temporal *while* clauses are used at the initial position at 6.25 percent as given in (43). Empirical evidence to support the higher percentage of temporal adverbial clauses in the final position is given in (44).

- (43) **While the mixture simmers**, combine the sugars in a blender or food processor, blend well, and set aside.
- (44)
- (a) Cook and char for 10 minutes, turning halfway, **while you pinch off and discard the tomato skins and roughly chop 1-2 of the chilies, to taste.**
 - (b) Drain the veg and leave to steam dry, **while you core the apples and dice into 1½cm chunks.**
 - (c) Meanwhile, finely chop the ham and place in a large non-stick ovenproof frying pan on a medium heat with 1 tablespoon of olive oil, stirring regularly **while you peel and finely chop the onion.**

In (44a), the acts of charring and discarding tomato skins occur at the same time. In (44b), the act of waiting for the vegetables to dry is simultaneous with dicing apples. In (44c), the act of stirring is coinciding with chopping the onion.

5.3.2 Discourse pragmatic factor

Discourse pragmatic factor refers to given and new information (Diessel, 2005; Wiechmann & Kerz, 2013; Tuchscherer, 2016). This interpretation is also applicable to English cookbooks as presented in (45).

- (45)
- (a) Combine the hazelnuts and canola oil in a small sauté pan and place over medium heat. **When the nuts begin to bubble in the oil**, remove from the heat and set aside until cooled to room temperature.
 - (b) Slowly add the oils with the machine running. **When all the oil has been added**, the vinaigrette should be emulsified.
 - (c) Add 1 tablespoon of the butter and 1 tablespoon of the olive oil. **When the butter is melted and bubbling**, cook half the pork medallions, browning them well on both sides about 2½ minutes per side.
 - (d) Add the garlic and cook until lightly toasted, about 30 seconds – it cooks very quickly, so be alert! Right **when the garlic starts toasting**, add the reserved carrots and celery and onions and give the whole thing a stir.

In (45a), *when the nuts begin to bubble in the oil* is a piece of information to link the old information about hazelnut and canola oil with a new

piece of information about making it cool to handle. In (45b), *when all the oil has been added* links the old information of adding oil into the pan with a new piece of information. In (45c), *when the butter is melted and bubbling* links the previous information of adding butter with the new discourse which is the cook of the pork. In (45d), the temporal adverbial clause *when the garlic starts toasting* links the old information of garlic in a previous sentence with a new piece of information about carrot, celery and onions. In addition, the high frequency of concessive adverbial clauses *if* that mostly occur in the initial position is explained by given and new information as in (46).

(46)

- (a) Mix the olive oil, orange zest and juice, pistachios, and jalapeno into the apricots and season to taste with salt and pepper. **If mixture is too dry** add some of the reserved liquid.
- (b) In a large bowl, add the entire contents of the tomato can and use your hands to squish the tomatoes. **If you prefer a smoother texture to your sauce**, use an immersion blender and give a few whirs.
- (c) Pack the mixture into clean glass jars or heavy-duty zip-top bags. **If using jars**, fill to the top.
- (d) Remove the pan from the oven and let sit for 30 minutes before uncovering. **If not serving immediately**, wrap tightly and refrigerate for up to 7 days.

The initial position is due to the linking of given information with the new information. As shown in (46a), *mixture* refers to the mixing of different fruit, nuts, oil and peppers as mentioned in the previous sentence. In (46b), *a smoother texture* relates to using the given information of using *your hands to squish the tomatoes*. In (46c), *using jars* links the old information in the previous discourse, which is *clean glass jars*, with new information, *filling to the top*. In (46d), *if not serving immediately* links the old information of resting for 30 minutes and wrapping tightly in the next clause.

5.3.4 End-weight principle

In addition to the occurrence of *discourse pragmatic factor*, another reason to explain the high frequency of adverbial clauses in the final position is *end-weight principle*, referring to the longer or heavier information placed at the end (Wiechmann & Kerz, 2013). This case could be clearly shown with the case of temporal adverbial clauses *when* and *while*, where two events could occur at the same time. However, the temporal adverbial clauses occur at the final position due to their longer and heavier expression, as in (47).

(47)

- (a) I originally discovered this combination **when creating a Creole-inspired chickpea-dough dumpling with the Chef Watson team.**
- (b) Let it all get golden, **while you heat the grains according to the packet instructions.**
- (c) Cook and char for 10 minutes, turning halfway, **while you pinch off and discard the tomato skins and roughly chop 1-2 of the chilies, to taste.**
- (d) Drain the veg and leave to steam dry, **while you core the apples and dice into 1½ cm chunks.**
- (e) Place in the pan to lightly char for 3 minutes **while you squeeze the lime juice in to a blender with ½ a tablespoon of red wine vinegar.**
- (f) Char the base slices in a dry non-stick frying pan on a medium heat, **while you peel and finely slice the garlic, then peel and finely grate the ginger.**
- (g) Let it sizzle and pop **while it cooks, releases its water and wilts, about 3 minutes.**

This use complies with Wiechmann and Kerz's (2013) explanation in regard to the principle of processing-based account. It is likely that the short information will go first while the longer information will be attached at the end. It is known as short before long ordering (Wiechmann & Kerz, 2013). However, there are a few tokens that indicates that this principle cannot be generalizable as given (48).

(48)

- (a) Meanwhile, brown the sausages in a large non-stick casserole pan on a medium heat, tossing regularly (if using veggie sausages, add 1 tablespoons of olive oil), **while you trim the leek.**
- (b) Meanwhile, finely chop the ham and place in a large non-stick ovenproof frying pan on a medium heat with 1 tablespoon of olive oil, stirring regularly **while you peel and finely chop the onion.**

In (48a), the events of trimming, browning and tossing occur at the same time. In (48b), the events of chopping, placing, stirring and peeling also occur at the same time. However, the adverbial clauses are shorter.

5.3.5 Subjectivity

The use of adverbial clauses that appear more in the final position can be explained by the reason of comment, technically known as subjectivity (Mala, 2005), referring to personal opinions and comments (Mala, 2005). The placement of adverbial clauses in the final position indicates a writer's subjective comments. When the writers add their opinion about the process of cooking, they normally use conditional adverbial clauses. Their opinion is always placed at the final position in (49).

(49)

- (a) Serve each portion sprinkled with roasted cauliflower and thyme leaves, draped with prosciutto, and with a drizzle of extra virgin olive oil, adding extra parmesan, **if you like**.
- (b) Rip off the overhanging half of the paper, then fold and press in the edges of the mash and patch up any gaps, using a knife to help you smooth it out and make a pattern, **if you like**.
- (c) Season to taste with salt, pepper, and a pinch of sugar **if necessary**.
- (d) Use two pans **if needed**.
- (e) Reserve the fat to add to the butter **if desired**.
- (f) Taste the sauce a final time and adjust the seasoning with salt and another pinch of tea and a little sugar **if desired**.

The writers add their comments at the final position with various expressions, such as *if you like*, *if necessary*, *if needed* and *if desired*.

5.3.6 Markedness

The result of adverbial clauses in English cookbooks in this study can be explained with markedness theory. According to Prideaux and Hogan (1993), markedness theory refers to regular and irregular forms. While the use of adverbial clauses in the initial position refers to marked, the use of markedness in the final position refers to unmarked as shown in (50).

(50)

- (a) **Once hot**, add the pork steak and cook for 8 minutes [...]
- (b) Cook **until the potatoes are completely tender, about 20 minutes**.

The adverbial clauses in (50a) which occur in the initial position are regarded as marked, while the use of adverbial clause in (50b) occurring in the final position is interpreted as unmarked. Based upon the frequency of 391 tokens of adverbial clauses in this study, the majority of adverbial clause, as in 299 tokens, equivalent to 76.41 percent, occurred in the

final position. The results in this study obviously show that the adverbial clauses in the final position are unmarked.

6. Conclusion

The results show that finite adverbial clauses are the most commonly used in English cookbooks, while non-finite adverbial clauses and verbless adverbial clauses show lower frequency. The syntactic structure of adverbial clauses in this study could be explained by *complexity effect* as finite adverbial clauses better facilitate cookbooks' readers. (i.e., *when the sauté pan is hot, add the oil* vs. *once hot, cook the salmon in ½ a tablespoon of olive oil for 4 minutes*). When there are options between verbless adverbial clauses and non-finite adverbial clauses, the verbless adverbial clauses are usually used to avoid confusion about several interpretations of *-ing* clauses and for economical purposes in terms of time and effort. Semantically, as cooking is a process, time and proper steps are considered as the important factors in explaining the process of cooking. Not only do recipes indicate prior event and simultaneity, they also indicate accomplishment (i.e. *bake until golden brown and crispy, 15 minutes*). Pragmatically, the temporal relation of adverbial clauses in this study goes well with the principle of iconicity of sequence, whereby prior events are expressed before subsequent events. To express it in this way could avoid the readers' confusion as cooking is basically about process requiring step-by-step explanations. The use of adverbial clauses in the final position indicates subjectivity (i.e. *reserve the fat to add to the butter if desired*) and end-weight principle (i.e., *let it sizzle and pop while it cooks, releases its water and wilts, about 3 minutes*). When the adverbial clause is used in the initial position, it is interpreted as discourse pragmatic factor. The result is also reviewed to the markedness theory where the adverbial clauses in the final position occur at 76.41 percent. Although there are four types of adverbial clauses, which occur in these English cookbooks, the most determinate is temporal adverbial clauses (i.e. *Bake until golden brown and crispy, 15 minutes*). With this distinctive feature, it is important for those who want to learn how to write cookbooks to understand chronological orders or process of cooking and what should come first, second and next. The results of this study provide guidelines for writing cookbooks, as this study provides useful writing techniques for those who would like to write cookbooks themselves. Applying the results of this study to other text varieties may not be applicable to the optimal level. In order to contribute to a larger picture of the genre, the future research using English cookbooks could go into the field of discourse analysis as well as different varieties of English. It is also recommended to study adverbial clauses in other text varieties. Adding more data to this area of research would make the results become generalizable.

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