

writers or the translators about the grammar of the target language used (Alfiyani 2013).

However, grammatical errors are not only found in those kinds of writings, but also in movie subtitles. Related to the previous explanation, grammatical errors which are commonly found in movie subtitles are usually caused by the imperfect language-translation processes from L1, the language spoken by actors and actresses in the movies, to L2, the language used in the movie subtitles. This is because there is an interference of the translators' mother tongue which then influences the occurrence of grammatical errors in movie subtitles (Odlin 1997; Hanna 2009; and Hamjah 2012). Nonetheless, grammatical errors in movie subtitles do not only occur in the subtitles which are translated from L1 to L2, but surprisingly also happen in the movie subtitles that are translated from and to the same language. In other words, the source language or the L1 which is the language spoken by the actors and actresses in the movie is the same as the target language or the L2 which is the language used in the movie subtitles. This situation is more well-known as a transcription process rather than a translation process.

In this modern era, the process of producing those movie subtitles which are transcribed (translated from and to the same language) can be done in two different ways: by using the certified translation service or by utilizing an Automatic Speech Recognition (ASR) software which is a replica of human intelligence that can directly transcribe the spoken utterances. Nonetheless, the latter option, nowadays, becomes drastically more frequent in use compared to the former one. This is because ASR software offers more advantages than the certified

translation service. ASR can shorten time, save energy, and is accessible anywhere and anytime due to its online availability. Moreover, the much cheaper or even the free cost compared to the cost of certified translation service has also become the reason for utilizing ASR to produce movie subtitles. Even though there are many benefits given, creating movie subtitles by using ASR software still has drawbacks. There are still many grammatical errors found in the movie subtitles produced. The examples of the grammatically-error movie subtitles explained before are the English subtitles of *Nomadland* (2020) movie produced by SONIX and MAESTRA online ASR software.

In relation to the explanation above, SONIX and MAESTRA online ASR software are two examples of ASR software that are produced by two companies in the United States of America whose names are the same as the names of ASR software they make. SONIX has a mission to transform the way people work with audio and video content whereas MAESTRA has a vision to create an editing suite that can automatically transcribe, caption, and give a direct voiceover of all the contents uploaded. If they are compared to one another, these two ASRs apparently share various similarities. However, they still differ in one aspect which is linked to the user ratings. Both SONIX and MAESTRA online ASR software definitely rely on a machine-based system, are completed by similar features such as in-browser transcript editor, word-by-word timestamp features, automated diarisation, etc., and offer the same price for the service (it is free for the first 30 minutes and \$9 for 60 minutes per month). Nonetheless, SONIX gets a quite high rating, 4.8/5 whereas MAESTRA only gets 4.5/5, according to Capterra, a free online

marketplace and technology vendor within the software industry (Capterra 2021). Because of these facts, the writer concluded that there is an urgent need to compare SONIX and MAESTRA online ASR software since both of them are dominantly used nowadays throughout society to produce movie subtitles in a very quick way.

Furthermore, the English subtitles of *Nomadland* (2020) movie produced by both ASR software which consist of many grammatical errors also become an interesting issue to investigate since *Nomadland* (2020) movie has its own peculiarities and uses English as its main language so that the English subtitles produced by both software mentioned above should not consist of many grammatical errors. *Nomadland* (2020) movie is a 150-minute American drama directed by Chloé Zhao which includes a group of professional actors and actresses and managed to be the winner of many international movie awards, for example, Oscar 2021 and Golden Globes 2021 (Coman 2020; IMDb 2021). In addition, *Nomadland* (2020) movie also received high ratings from the three most popular websites in movie ratings: 7.6/10 from Internet Movie Database (IMDb 2021), 8.8/10 from Rotten Tomatoes (Rotten Tomatoes 2021), and 9.3/10 from Metacritic (Metacritic 2021). Because of those facts, *Nomadland* (2020) movie has become a favorite spectacle for people across the world, so its subtitle, including the English subtitles, should also be perfect and grammatically correct.

There have been several related studies that investigated grammatical errors, such as Santiago et al.'s (2015) study, Lu et al.'s (2019) study, Izzuda's (2019) study, Dewi and Huda's (2020) study, and Putri's (2020) study. The first study investigated the grammatical errors in France Inter spontaneous speech radio

shows which were transcribed by the LIUM ASR system; the second study considered the impact of ASR errors on the performance of free speaking test auto-marking systems; the third study analyzed the grammatical errors in the students' recount texts; the fourth study examined grammatical errors in the students' writing which were in the forms of descriptive texts; and the last study utilized students' utterances from a YouTube video that were transcribed into words. Even though studies that analyzed grammatical error and its correlation to the use of ASR software had been conducted, an analysis of grammatical error and its relation to the use of Artificial Intelligence (AI) technology, especially Automatic Speech Recognition (ASR) software, and movie subtitles is still nonexistent. A study that examines the SONIX ASR software, MAESTRA ASR software, and *Nomadland* (2020) movie is also still absent. In addition, a study that discusses the comparison of grammatical errors of the English subtitles of a movie produced by two online ASR software, in this case the English subtitles of *Nomadland* (2020) movie produced by SONIX and MAESTRA online ASR software, also has not existed, yet. Therefore, because of those research gaps and also a very strong and similar link between the notion of grammatical error which deals with the 'real' human intelligence and the ASR software which appears as an AI technology that holds the principle of imitating human intelligence, the writer concluded that there is an urgent need to investigate this issue. In addition, the comparison of the analysis of grammatical errors found in the English subtitles of *Nomadland* (2020) movie produced by SONIX and MAESTRA online ASR software is also urgent to investigate since the results of the grammatical error analysis are directly linked to

the audience satisfaction. If the English subtitles of *Nomadland* (2020) produced by SONIX and MAESTRA online ASR software contain many grammatical errors, the movie sales and the interaction with or the monetization of both software will decline and may cause large losses or bankruptcy in the future. Therefore, the grammatical error analysis is supposed to be conducted to prevent and avoid those unwanted things.

Subsequently, by using a theory proposed by Ho (2005) about Taxonomies of Errors, all grammatical errors found in the English subtitles of *Nomadland* (2020) movie produced by SONIX and MAESTRA online ASR software will later be examined and analyzed further. Therefore, the result of this study is expected to be able to help the developers of the two ASR software to improve the features used to create movie subtitles, particularly the English subtitles, so the grammatical errors produced can be much reduced. In addition, the result of this study is also expected to be able to provide some linguistic benefits for other researchers and the readers in obtaining more information about the analysis of grammatical errors in movie subtitles produced by ASR software.

1.2 Statement of the Problems

Based on the background of the study above, the following questions were formulated for this study:

1. What types of grammatical errors are found in the English subtitles of *Nomadland* (2020) movie produced by SONIX and MAESTRA online ASR software?

2. What is the most frequent type of grammatical errors found in the English subtitles of *Nomadland* (2020) movie produced by SONIX and MAESTRA online ASR software?

1.3 Objectives of the Study

Based on the statements of the problem above, the objectives of this study are:

1. To identify the types of grammatical errors found in the English subtitles of *Nomadland* (2020) movie produced by SONIX and MAESTRA online ASR software; and
2. To discover the most frequent type of grammatical errors found in the English subtitles of *Nomadland* (2020) movie produced by SONIX and MAESTRA online ASR software.

1.4 Significance of the Study

Theoretically, this study is expected to contribute linguistic advantages for researchers and the readers of this study, particularly about the analysis of grammatical errors found in the English subtitles of *Nomadland* (2020) movie produced by SONIX and MAESTRA online ASR software.

Besides, this study is practically expected to help the developers of both software, SONIX and MAESTRA, to update and make corrections for the auto-transcribing features which are used to produce the movie subtitles. Furthermore, this study is also expected to assist the people in society to find and determine better

software to create movie subtitles and help deaf people or people with hearing problems who cannot watch a movie with sound to comprehend the overall story of the *Nomadland* (2020) movie by reading the result of this study.

1.5 Definition of Key Terms

- Automatic Speech Recognition (ASR) : ASR is one of the most automatic speech processing areas, allowing the machine to understand the user's speech and convert it into a series of words through a computer program, thus creating a kind of natural communication between man and machine (Benkerzaz et al. 2019).
- Grammatical Error : Grammatical Error is a violation or misuse of specific grammar rules possessed by the learners of the language (Ho 2005).
- Nomadland* : *Nomadland* is a 2020 American drama which was directed by Chloé Zhao and based on Bruder's (2017) non-fiction book entitled *Nomadland: Surviving America in the Twenty-First Century* (Coman 2020).
- Subtitle : Subtitle is the term for text that accompanies video content which is displayed below the video to provide additional or interpretive information for viewers. Subtitle can be in the same language as the video or translated into another language (Allisonamara 2020).