Epistemic Probability in the Discussion Sections of Academic Writing

B. Budiyono

budiyono@ukwms.ac.id

Abstract:

Epistemic probability offers criteriality, i.e., a criterion or a convention is singled out for making probable claims. The criterion may be the purpose of doing an assignment as respectively marked by *probably* and *should*. It can be an acceptable quality as indicated by *should*, and a convention by *would*. A number of interactional characteristics are also found, e.g., a strong warning or threat by *would*, low appreciation of theoretical insights by *should*, emotional expression about the data in the sources by *would*, unacceptable logic by *should*, personal perception by *should*, justification for a decisive act by *probably*. In addition, there is manipulation of factivity into non-factivity by splitting the product-and-process co-substantiality through *probably*. Finally, there is operator sharing where *would* is factive.

Keywords: probability, non-factivity

Introduction

Among the devices to express attitudes to the content of assertions are modality markers such as modal auxiliary *may*, perimodal *certainly*, *probable* and verbs of perception *seem*. They are classified into intrinsic or deontic and extrinsic or epistemic (Quirk et al., 1985: 219-239; Lyons, 1977: 750; Palmer, 1976: 42; Givon, 1993: 169; Huddlestone, 1988)); based on laws of society and based on laws of reason (Perkins, 1983: 6-12); root and epistemic (Ney, 1980: 38); modulation and modality (Halliday, 1976: 204; 1985: 337)

Epistemic modality is a stand between the positive polarity (definite *yes*) and the negative polarity (definite *no*) in Halliday's functional grammar and an important feature of language and a privileged area in text analysis (Fowler, 1986: 132). It offers a choice to a writer when he formulates a claim: to be totally or less than totally committed to the truth of his claim (Simpson, 1993: 47).

An epistemically modalized assertion is different from an unmodalized assertion. For example, *She speaks French* and *She can speak French* are different from each other. The writer of the first utterance asserts the factuality of the assertion, i.e., he represents it as objective truth. The writer of the second assertion expresses the degree of validity. The unmodalized

assertion *It's raining* treats the process of raining as reality, whereas the modal assertions *It may be raining* and *I must leave now* express a relation with reality (Downing and Lock 1992: 382). Modalized assertions are distinguished from categorical assertions in that categorical assertions are stronger in certainty (Halliday 1985: 340). Categorical assertions suggest the strongest possible degree of a speaker's commitment and are epistemically non-modal (Lyons 1977: 763).

Epistemic modalization characterizes critical thinking in scientific writing that emphasizes judgmental conclusions of detachment rather than engagement, uninvolvement rather than involvement (Olson and Jones, 2000: 197). It may present contradiction, ambiguity and uncertainty (Covino, 2000: 33), argument and controversy (Young, 2000: 47), and lack of assertiveness and imposition (Giannoni, 2000: 9).

One type of epistemic modality is epistemic probability. Epistemic probability is the median value in epistemic modality in reference to a degree of confirmation in relation to a given body of knowledge in a statement. This knowledge is reflected on other statements that function as the evidence to that degree of confirmation. In this study, it does not refer to statistical probability, which is a frequency degree in relation to the result of the enumeration of the total cases or evidentials. It refers to the median value between the yes-and-no range as indicated by its operators such as *should, would, and probably*. This study explores the features of epistemic probability in scientific writing.

Methods

This qualitative study was to identify the evidential and interactional features assumed to serve as the ground for epistemic probability, as in the following figure.
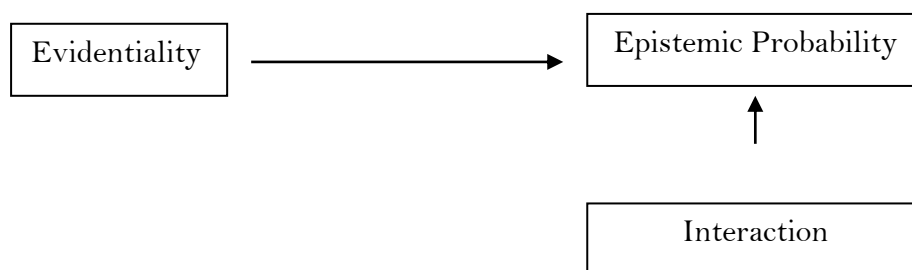
Argumentative Context of Epistemic Probability

The data were notional units of evidentials and epistemically modalized statements. The evidential unit, which was presented in any level of linguistic units (phrases, clauses, sentences) in the sources, was any linguistic unit intended to be a reason, a ground, or a support for the source makers' epistemic probability.

The sources of the data were the discussion sections of nine dissertations written in English by the graduates of the department of English Language Teaching. These sections were relevant because they provided the necessary data of the evidential and interactional features, and resourceful because they supplied different kinds of evidentials and epistemic values and allowed checking the same epistemic operator for different purposes. These detailed sections ensured in-depth understanding through the cyclical search for recurrence of evidentials, epistemic operators, and different shades of meanings.

The data were treated in the following steps. First, the sentential units with modal auxiliaries and their relevant non-auxiliary operators were collected. Second, they were classified broadly into deontic (obligation-imposing), epistemic (proposition-assessing) modality, and dynamic modality (expression of ability, volition, circumstances). Third, the epistemic sentential units were selected to be the guide in the search for the evidentials of epistemic probability as regards the principle of epistemic validity.

The key instrument was the investigator provided with some knowledge of the relevant literature to help him to be sensitive to the required data. The other instrument to be shared in the investigator triangulation was Palmer's (1987) framework of deontic, epistemic, and dynamic types of modality and Halliday's (1985: 337) operators of epistemic modality of non-factivity (*will, would, should, probably).*

Investigator triangulation involved the investigator of this study and three other investigators (a senior lecturer of syntax and semantics with a master's degree in linguistics and two graduates with the doctor's degree in English Language Education with the relevant interests whose dissertations are about scientific writing and rhetoric respectively).

Findings and Discussion

The features of epistemic probability in this study are presented in the discussion topics of personally motivated epistemicity, interactionally-motivated epistemicity, which are methodologically distinguished from interactionally-motivated factivity.

1. Personal-Epistemic

Distancing works through *have* to suggest the past reference of the events (On different occasions, the same investigator avoids *have* to suggest the present reference of the events. This is psychological distancing in referring to the events that temporally happened in the past, i.e., prior to data analyses). In $(1 - 2)$, the events are referred to the past by "*have*" for a causal relation.

1. In example *3*, the subject somehow mistakenly took the dictionary entry 'extend' while actually he **should** have been looking for 'extent'.
2. In the above data, the subject first translated 'frustration' into its Indonesian cognate *frustrasi*, which **should** have been correct.

In (1), an inference is derived from the circumstance that the difficult word for the subject to look up in the dictionary was "extent*", but the subjects' written protocols show the translation of "extend*". That conclusion is based on what is reasonable from the task (looking for the meaning of *extent*), not from the result of doing the task (translation "extend*"). That is, "because the difficult word was *extent*, it is likely that he was *looking for 'extent*"*. Statement (2) also reports a judgment about a past state of affairs: whether "*frustrasi*" was the correct translation of "*frustration*". Instead of "was correct*," should have been correct* is expressed. It may be paraphrased by 'It is tentatively probable that *frustrasi* was correct' to reveal some likeliness without any explicit reason for that. The past time reference is possibly imposed by the finding of the switching from "frustrasi" to "kegagalan". This finding might tempt some deontic reading about some regret or unfulfilled suggestion: "The former selection ('frustrasi') should have been taken as correct" or "It is regrettable that 'frustrasi' was not taken". As reported in the protocols of that statement, in the effort to translate "*can be frustrating*" a student switched from "*dapat membuat frustrasi*" into "*dapat membuat kegagalan*". As far as data commentary is concerned, the epistemic reading is more reasonable.

3. On the other hand, ANOVA required that the f value, the ratio between the between group variance and the within group variance, **should** be greater than the critical value in the f table.

In (3), the deontic reading (obligation) of *should* in that subordinate clause is imposed by the deontic verb "required" in the main clause. By the tense sequence rule, this deontic *should* is a past tense form with *shall* as its corresponding present form. It is not the investigator who lays that requirement; she merely reports that requirement in ANOVA, just as another

investigator informs the English academic writing convention in *must*. This interpretation shows the presentation of the nature of a certain science, where "what is" is personally presented as "what shall be". This would suggest personal preference in informing a deontic source. This deontic source is a purpose in (1) and translation correctness in (2).

In some previous examples of epistemic possibility, causal reasoning is attempted informally by confirming the consequent. It is a rare case here where *probably* is used in informal reasoning by negating the antecedent.

4. The absence of justification in the introduction is **probably** because the writer of the essay does not consider her attitude toward the subject (cf. D'Anglo, 1980: 64).

In (4), the causal relation is expressed this way: "The purpose of justification is to show some consideration of a writer's attitude. Justification is absent. It is probable that there is no consideration of the attitude". The evidentials are an authoritative assumption and the finding of the absence of justification; the epistemic claim of probability repeats the authoritative assumption by negating the antecedent.

Epistemic probability may be an explicit threat, as found in (5).

5. According to the convention of English academic writing such body paragraphs **must** be dropped because the materials do not fit with the theme. **Otherwise**, English-speaking readers **would** be confused in understanding the content of the body paragraphs.

The threat is introduced "otherwise" on the basis of the finding of the unfocused discussion in an essay ("the focus of discussion is not clear"). This threat develops from an epistemic warning by the same investigator: "English-speaking readers may be confused with such an essay because the focus of the discussion is not clear". A warning develops into a threat in the presence of a higher deontic source ("the convention of English academic writing". It suggests different perspectives resulting in different epistemic values, i.e. epistemic possibility in reference to English-speaking readers and epistemic probability in reference to a convention.

Just as variety might account for different operators within a one-sentence context, harmony might be responsible for the metamorphosis of epistemic possibility into epistemic probability in the presence of deontic source. The deontic source is "the convention of English academic writing" that is enacted through "must be dropped". The investigator may disclaim his responsibility; he simply informs the rule. His responsibility is in giving the epistemic warning in "Otherwise, English-speaking readers would be confused …". This

may be also a good example where deontic necessity is expressed without sacrificing the writer-reader interaction by means of two operators of different epistemic values. This is comparable to the expression of a categorical causal reasoning preceded by epistemic possibility, where two operators of epistemic values are presented. In these examples, the relation between the obtainable condition ("do not fit with the theme") and the inference ("would be confused") is by no means near-tautological, in contrast to several examples of would in the discussion of necessity. The two values share the same property, i.e., compatibility. There is a strategy to be personally certain or fairly certain and the same time interactionally respective.

A different type of evidentiality is a personal attitude. Unlike the evidentiality presumed to be a personal cognitive environment of semantic compatibility in epistemic possibility, in the following examples, a personal attitude is not a product of interpretation. It is an evidential outside the limited scope of this study (the finding-and-discussion section of the sources). It is found in the sub-section of the theoretical framework of the source.

6. This **should** be the competence, the psychological fact of language, which permits a lot of individual creativity on the part of its speakers.
7. For the child, then, these people, or more accurately the lexico-grammar systems of these people, **should** be the embodiment of the langue, the social fact of language, which imposes a degree of collective solidarity and loyalty on its speakers.

The operator is related to the commonly-held authoritative and theoretical assumptions about competence, performance, langue and parole. They are from St. Clair (1980) who observes that "the Saussurean concept of *langue* … is a social fact … The Chomskyan concept of competence is a psychological concept". They exemplify probability on the basis of an authoritative epistemically non-modalized assumption. The personal attitude is explicit in "there is no one theory of language comprehensive enough to cover all the language components satisfactorily … the fact that the present study is not strictly guided by any particular theory of language".

2. Interactional-Deliberative-Epistemic

For tentative probability, the operator *would* serves as the tentative form of *will*. It is used to express a tentative conclusion about present events or activities and may be paraphrased by: "I should think that …" or "It would be reasonable to conclude that …" (Palmer, 1987: 48). It is used for epistemic probability, as shown in the following examples, where is only one epistemic operator. Unlike semantic compatibility in epistemic possibility, interactional compatibility is salient here; an epistemic notice assigns the readers to a better

place.

8. It **would** not be surprising to read the final translation of the subject which read as follows.

There is a nuance of epistemic-deliberative use of "would not be surprising" in (8). A similar expression is found "should not be interesting". Epistemic probability applies to "not interesting" and can be paraphrased by "It is probable that it is not surprising to …". The deliberative sense is given in the presentation of "the final translation" which is occupied with mistranslation to indicate miscomprehension. An extended paraphrase may read, e.g., "It is probable that reading miscomprehension is not surprising". The epistemic sense could, therefore, be interpreted as an epistemic notice to the readers who may be experienced in reading research and may not want to waste their time and energy in reading or analyzing the data of miscomprehension. The readers are a better place. This may be a good example where a deontic or interactional motive is evidentialized, not popularly interpreted.

A variety of epistemic probability is operated by evaluative *should* for sensation in a similar way as in (86), which might have been intended to express some empathy in the text-reader interaction.

9. It **should** be interesting to link this improvement in word pronunciation with vocabulary growth ease (Section 4.4 Vocabulary Growth Ease).
10. Indeed, this **shouldn't** be surprising considering the fact that children **might** utilize speech sounds idiosyncratically, they **might** assign idiosyncratic meanings to their words, they **might** even idiosyncratically coin novel words.

The evaluative-epistemic use of *should* is found in *"should be interesting"* and *"shouldn't be surprising"* where the modality marker is followed by personal evaluation of sensation. It adds to the previous sensation expression by *would*. Interestingly, both what *"should be interesting"* and *"shouldn't be surprising"* are done, i.e., data analysis is conducted. There may be a concessive sense here, i.e., whether *"interesting"* or *"not surprising"*, data analysis is conducted in linking pronunciation improvement to vocabulary growth in (9) and in presenting the data of idiosyncrasies in (10). In this case, concession may be sort of indifference. Epistemically, those two judgments are possibly based on a personal or commonly-held assumption that sensation will vary across people and, therefore, allow readers to have different sensations or different degrees of the proposed sensation. A pragmatic reason may arise, e.g., to draw the readers' attention to what is interesting and immediately presented in (9) or to show some respect the readers who are experienced or an

expert in such a field. This would be an epistemic notice that they are pleased to skip the relevant part in (92).

Another probability marker is epistemic *should* to be paraphrased by "It is probable that" or "It is likely that", as exemplified below.

11. Logically, this preference **should** be of two types: *for* and *against* a specific pattern.

12. The next four items in Table 5.5, Items 5 through 8, are included to display the one-step-at-a-time progress, although this **should** also be apparent in all the other items.

Example (11) mentions logic as the source of the judgment as manifested in "logically" and assigns two values to "preference". This personal logic might be contrary to this gradable single-valued item because there is no implication of hatred ("preference against") or there is no binary mutual exclusivity between x and y in "*prefer x to y*". This is concessive or simply entertained for some consideration if one wants it, but the investigator does not consider it. This is a commodity-on-sale in the interactional market place. Statement (12) may be paraphrased by "Because *all the other items* are described with the purpose of making apparent *the one- at- a- time progress and because* the table of items 5 through 8 is intended to make apparent and to display *the one- at- a- time progress*, *the one- at- a- time progress is likely to be apparent in all the other items*". This is an epistemic (reasonable) judgment and the reason is derived from the purpose and the way the purpose is approached, i.e., the visual table. This might reflect an assumption of high accessibility of visual presentation that is in conflict with the possibility of table browsing. The visual presentation is highly accessible but it respects the browsers and another opportunity is given. The readers are assigned to a convenient place. The operator *should* is evidentialized by the nature of the presentation and is interpreted in its relation to a possible instance of reading.

The importance of the writer-reader interaction may account for the epistemic-deliberative face of *probably*, as exemplified below.

13. It is **probably** appropriate to repeat here that culture is not static but adaptive and constantly changing.

14. It is **probably** appropriate to repeat here some of the remarks made in this section (4.1) about the rhetorical structure of the students' essays.

Examples (13 − 14) question the appropriateness of the repetition and at the same time introduces the repetition. The investigator makes his decision in giving the repetition and the possible effect is mitigated by *probably*. He would not question the appropriateness for the repetition is given; he questions whether it is appropriate to the readers. This may be a

politeness strategy in making a decision. A complaint from the readers against the repetition is mitigated. The decision might be as strong as "Whether appropriate not, the repetition is given". With *probably*, this is reserved. With this interpretation, epistemic probability is motivated by a non-epistemic volition. Although an option is probable or compatible, it is adopted.

3. Interactional-Factive

The interactional-factive use presents the completion of the event and serves some purposes in the writer-reader interaction. It can be classified into these types: volitive-factive, indicative-factive, and co-subtantial-factive.

3.1. Volitive-Factive

Epistemic probability is different from existential probability (used as an analogy to existential possibility). In the following examples, *would* is interpreted within recursiveness of the whole source, i.e., writing goes from the beginning to some end and returns to some points in the beginning, and so forth. It assumes some accuracy in distinguishing facts from opinions. The operator *would* is existential (or non-epistemic) in so far as the predicated event is found. It may be formally introduced by *therefore* to introduce unavoidability or a definite plan that is completed.

15. Therefore, the step to compensate such case **would** be to use only one of the highly correlated predictor variables (Byrkit 1987:820).
16. Therefore, interpretation of problems and strategies at this level **would** also take into consideration problems and strategies at the lexical item level.

The plans are reasoned from the possibility of more than one highly correlated variable in (15) and the possibility of analyzing clausal miscomprehension as deriving from lexical miscomprehension in (16). The possibility and probability are existential; and the existential possibility is used to justify (by means of "therefore") the plan that is completed (factive). With the assumption of recursiveness, the nuance of futurity is one of spatial immediacy not the chronology of the predicated event. The difference is that existential possibility mainly highlights the findings and existential probability informs completed activities in the research plans. They help the readers to identify the highlights of the research findings and follow the steps.

3.2. Indicative-Factive

The category "existential" refers to the presence of the relevant phenomena resulting from data analysis. In the following examples, the probable events are observable or indicated.

17. Here again, the subject's translation *jarak* (distance) followed by her remark *mungkin* (perhaps, maybe) showed that she was **probably** guessing the meaning of 'circumstances' without the help of other words in the sentence…The **possible** explanation of the problems identified when guessing strategies were conducted was that there were limited contextual clues surrounding the problematic lexical items. In fact, Haynes (1995) found out that many unfamiliar words are not accompanied by any immediate context clues, which are needed for guessing.

18. All the subjects had difficulties understanding sentence 4 **probably** because it contained many unfamiliar words… All the subjects were not familiar with 'invariance', *'prevail'*, *'deny'*, *'subscribing'*, *'haphazard'*, *'capricious'* and *'chaotic'*, which made it **impossible** for them to guess the meaning of the sentence.

In (17), the evidentials are the translation and "*mungkin*" and the investigator interprets "*mungkin*" as "probably guessing … without the help of other words in the sentence". It is empirically valid, i.e., "mungkin" plus no other indicators means "without the help of other words". The interpretation becomes her decision in formulating the subtitle of "guessing wildly". This turns to be an interactional-existential where probably is motivated by her decision to subtitling. In (18), *probably* might epistemically question "many" in a trivial way in the sense that the difficult words are mentioned. The difficulty in understanding the sentence is decisively analyzed in terms of the difficult words. This might be that she was so occupied with causal reasoning that a reflexive relation is split in a causal relation. This reflexivity might be glossed by "All the students had difficult words in understanding sentence 4 because probably this sentence contained difficult words". That might be restructured to show the triviality of *probably*: "All the subjects had difficulties understanding sentence 4 that contained …". This is again related to the decision in presenting the subtitle of "too many unfamiliar words". This operator is comparable to existential possibility in indicative *seem*; the difference being the presence of the decision. The decision in the subtitle formulation could be treated as the volitive and deliberative context, as also found with the unavoidable "repetition" above. An event is probable here when it is found and needed. When causal reasoning takes place, *possible* is entertained through an authoritative finding.

3.3. Co-substantial-Factive

Epistemic probability in the typical examples above where conditionality is involved results from some inferential processes, as held by Palmer (1988; 137) that the inferential process typifies epistemic probability by suggesting this paraphrase: "It is reasonable to infer" or "A reasonable inference is that". This inferential process goes from a certain condition to its inference. The condition-inference relation seems to be very close in such a way as to result in near-tautologies, which are, therefore, least challenging, i.e., it might not be worth arguing against near-tautologies. Epistemic probability that can be more challenging might now be less challenging than epistemic possibility because that epistemic probability applies to near-tautologies. This warrants considerable caution in epistemic modality or some proper use of different values of epistemic modality: possibility for causality and probability for near-tautologies. Had causality been expressed in probability and near-tautology in possibility, there would have been a judgment of improper use.

Near-tautological causality in epistemic probability might be influenced by some motivation for elaboration. A comparison can be made between purely descriptive and elaborated causal relations.

19. Inaccurate pronunciation and/or spelling of an unfamiliar word **may** have caused the reader to treat it as if it were a **different** word he already knew. The "mismatches" found in the present study happened when the reader "recognized" a word, which he actually did not know because he had **mispelled** or **mispronounced** it to look or sound like a word he already knew.

20. Lexical items such as 'rationale', 'consequent', 'duplicate', 'complication', and 'introduction' **can** cause problem because they are false cognates with *rasional* (rational), *konsekuen* (being responsible), *duplikat* (spare as in spare key), *komplikasi* (said of an illness or a problem made worse because of another illness or problem), and *introduksi* (getting to know something or somebody), respectively…False cognates found in two different languages are **potential** causes of miscomprehension (Grabe, 1991; Holmes and Ramos, 1995).

It mentions a causal relation in "may have caused" for existential possibility that matches the causal factivity in "because he had misspelled". This existential and factive causality may have derived from, or a variety of, its adjacent simultaneity marker "when" in this rephrases: "Inaccurate pronunciation and/or spelling happened when an unfamiliar word was treated differently. These mismatches happened when it was mispronounced or misspelled". This may exemplify how "may have cause" is used for factive causality, replaceable by "when" as used in the original example, and referentially circular, i.e., "mispronunciation and/or spelling" refers "mispronounced or misspelled" that refers to "treat it as it were a different word". The two sentences in the example may, therefore, be simplified into one sentence. There is circular referentiality introduced by "because", i.e., "problem" refers to "false

cognates", with the assumption that there are no problems when there are no false cognates. It mentions a causal relation in "can cause problem" and "potential causes of miscomprehension", which is existential by exemplification and replaceable by "can be problematic" followed by the relevant data of false cognates. A sentence to simplify it may read "There can be false cognates in comprehending 'rationale', …, e.g., *rasional*, …". This gloss would not show any existential cause; it exemplifies some false cognates to show that certain lexical items are problematic. This simplified (one-sentence) gloss reads as simple as (21) by the same investigator.

21. Some learners **tended** to overgeneralize that BE is a copula, whose Indonesian **equivalent** is *adalah*, as in 'John is a teacher' *(John [**adalah**] seorang guru)*.

22. To some subjects any form of 'have' was believed to show possession, as **signaled** by the Indonesian word *mempunyai*. As a consequence, the next word following 'have' was expected to be a noun or a noun phrase. For some subjects, any verb in the '-ing' form was believed to show that an action was in progress or that somebody was in the process of doing something. This was **signaled** by the Indonesian word *sedang*.

In (21), prototypical referentiality operates through "is" and "equivalent" with no causal relation although it can be elaborated into a causal relation in a similar way as the other examples, e.g., "Problems can be caused by the overgeneralization that results in the mistranslation of the copula BE because the subject misinterpreted the copula.", or, "Problems can be produced by overgeneralization because the subject tended to mistranslate BE into *sedang*. This is (probably) because the Indonesian equivalent of BE is *sedang*". This elaborated version introduces "because" for co-referentiality of "problem", "mistranslation" and "overgeneralization" in an ascending order of specification. This may exemplify how existential causality through possibility ("can be produced") and probability ("probably because") can be inserted for the sake of elaboration. As far as elaboration involves causality, it might show the popularity of causality in data commentaries or it might be intended for clarity. In (22), referentiality takes the form of the indicational relation in "signaled by". There is a causality marker "as a consequence" derived from the co-occurrence in the finding of *mempunyai* and *catatan* for "has noted". This factive causality derives from an assumption of grammaticality of the verbal phrase.

Again, in (23), elaboration involves two possibility operators for causality in "can be produced" and "may result" in the presence of the relevant data.

23. This strategy is considered to be a fruitful strategy in the interactive reading processes. However, problems **can** be produced by the guessing activities, which **may** result in inaccurate or even wrong interpretation.

It is theoretically justified to assign existential possibility to both operators in the presence of the relevant data and, therefore, *can* varies with *may*. It might also be that the first operator serves a conceptual possibility to prepare existential possibility in *may*. The first interpretation, however, seems stronger with the presence of the data and with the assumption that the primary function of data commentaries is to report the findings and not to report a general conceptual possibility in such a very specific case as guessing. Another assumption is that there is a distance to follow from conceptual possibility through epistemic possibility to existential possibility and finally existent findings. With any interpretation, this causality lends itself to this referentiality: "problems" (in guessing), which indicate "wrong interpretation" are found in "guessing activities". In this example, "can be produced" and "may result" specify the sufficient cause, i.e., guessing causes guessing "problems" that are indicational of, or consubstantial with, "wrong interpretation", like the example of "ant bite" caused by "an ant". But, there might be a claim to refer "problems" to miscomprehension problems and to specify the observable condition ("guessing activities"). This would specify a necessary and factive condition that may be introduced by "when" to refer to one of the intra-textual conditions (observable in the text analyzed). The reconstruction strategy through paraphrases may illustrate how simple description in (21 − 22) may evolve into elaborated causation in (19 − 20). Simple description, a finding is indicated by its "equivalent" in (21) and is "signaled by" its reference in (22); elaborated description involves a causal relation through existential possibility ("can cause", "can be produced", "potential causes") and through unmodalized causality ("because he had misspelled"). These two strategies share the same feature, i.e. co-referentiality, and show how syntactic elaboration results in factive causal relations.

It might be that near-tautological *probably* for causality develops from this elaboration strategy. The operator *probably* and the existential possibility operators *can* and *may*, and the unmodalized operator "had" are used for causality, which can be analyzed as deriving from co-referentiality and a necessary condition to be introduced by "when". Both possibility and probability above are governed by factivity or observability. In so far as factivity is concerned, probability varies with possibility in their necessary conditions. Causality through existential possibility is found with its comparable unmodalized causality and relevant findings; and, in the analysis proposed, existential possibility through existential possibility may derive from a necessary condition introduced by "when" (as also found); as proposed in the analysis, causal probability may derive from an observable condition that might also be introduced by "when" for an observable condition. Upon this

variety is a question of the quality of that necessary condition, i.e., whether there are two qualities for possibility and probability in terms of their necessary conditions. And if there is a quality difference, the question is whether it comparable to the near-tautological feature of probability.

The case of co-referentiality in possible causality above is one of a process e.g., "inaccurate pronunciation", "mismatches", "misspelled", "mispronounced", "false cognates", "miscomprehension" "inaccurate or even wrong interpretation" in the elaborated examples. In the simple examples, such a process as "misinterpretation" may readily be inserted after "as signaled by" and "was signaled by". In the simpler example, such a process is mentioned as "overgeneralization" followed by the referentiality marker "is". They refer to the subjects' activities as evidentialized by the findings and serve as possible causes-and-effects (termed as co-referentiality or circularity). In the case of probability, the data *"mungkin"* leads to "probably guessing the meaning of 'circumstances' without the help of other words in the sentence". This "mungkin" is not followed by any other data of using other words to help guessing. The dictionary was at hand throughout the test, as reported, but there is no data to support using the dictionary for that problem. With the assumption that what is written shows what has happened, there is no effort for using other words and the dictionary. The probable causal relation, therefore, questions the validity of the working assumption of the instrument. The introduction of "when" would be awkward but methodologically valid: "The subject said *mungkin* when he did not use other words for guessing". But the strength of "probably" seems to the presence of the single piece *"mungkin"* that methodologically allows only that interpretation, not any other interpretation. This is, then, an example of one-to-one relation that questions the validity of the method. This relation seems comparable to co-referentiality in possible causality: "misspelling possibly because/when misspelled"; "only *mungkin* probably because/when no other words used". But the relations are different: co-reference and inference, i.e., "misspelling" refers to "misspelled", and *"mungkin"* indicates "no other words used". Both are (near-) tautological) or very strong or in a different way: co-reference valid by itself; inference valid by method.

It might be these features that distinguish probable causality from possible causality. They are absent in possible causality for the sake of optionality. Authoritative sources do not seem to distinguish epistemic probability from epistemic possibility. Authoritative and personal assumptions may be found with these two epistemic values and a category or a feature of a certain set of data might be treated as a showing a condition from which a possible state of affairs can be inferred. It might psychologically be sufficient to regard them as showing different degrees of personal certainty through different linguistic modality

values. There may be one or several options given in epistemic possible causality but there seems only one option for epistemic probable causality. One option for epistemic possible causality may stem from some failure in providing more options whereas one option in epistemic probability may show a higher degree of defensibility of the option and, therefore, this option is selected. One might argue for some failure in providing other options in epistemic probability. This failure would possibly be justified in epistemic modality since epistemic modality is concerned with certain amount of subjective or personal knowledge and it is lack of knowledge that motivates it. This lack of knowledge resides as non-factuality in epistemic modality. It might be lack of co-occurrence frequency in epistemic possibility.

Summary

Throughout the analysis, epistemic probability is also a strategy in data commentaries, i.e., it explains and, starts from, the findings. It may employ personal search for semantic compatibility in the presence of interactional features, such as a deontic convention, personal decision, and an assumption of seniority in research. Within these features, interpretation results in relevant interactional motives such as an epistemic warning, epistemic notice, and co-substantiality. The inferential process in epistemic probability may be characterized by inherency between an activity and its purpose in the research context or in the authoritative assumption. This inherency seems to arrive at a higher degree of co-substantiality that results from splitting a phenomenon into its product and process and syntactic assignment of these two entities into two clauses in the form of a causal relation. This inherency metaphorically applies to the relation between the probable claims and the claim makers, i.e., they have their decisions and act upon these decisions on the basis of these probable claims, e.g., in presenting some repetition and formulating subtitles.

References

Budiharso, T. 2001. *Rhetoric and the Linguistic Featurres of English and Indonesian Essays by EFL Undergraduate Students.* Unpublished Dissertation. Universitas Negeri Malang.

Covino, W. A. 1991. The Grammar of Advanced Writing in K. H. Adams and J. L. Adams. 1991 (31-42).

Djiwandono, P. I. 1998. *The Relationship between EFL Learning Strategies, Degree of Extroversion, and Oral Communication Proficiency: A Study of Second-Year Secretarial Students at Widya Karya University.* Unpublished Dissertation. IKIP Malang.

Downing, A and P. Locke. 1992. *A University Course in English Grammar.* Englewood: Prentice Hall.

Fowler, R. 1986. *Linguistic Criticism.* Oxford: Oxford University Press.

Givon, T. 1993. *English Grammar.* Amsterdam: John Benjamins Publishing Company.

Halliday, M. A. K. 1985. *An Introduction to Functional Grammar.* London: Edward Arnold.

Harjanto, I. 1999. *English Academic Writing Features by Indonesian Learners of English.* Unpublished Dissertation. IKIP Malang.

Huddlestone, R. 1988. *Introduction to the Grammar of English.* Cambridge: Cambridge University Press.

Lyons, J. 1977. *Semantics (Vol. II).* Cambridge University Press.

Mukminatien, N. 1997. *The Differences of Students' Writing Achievements across Different Course Levels.* Unpublished Dissertation. IKIP Malang.

Ney, J. W. 1976. *The Modals in English.* Journal of English Linguistics (Volume X). Washington.

Olson, G. A. and E. A. Jones. 1991. From Artifact to Utterance: Toward a Revised Conception of Critical Thinking. In K. H. Adams and J. L. Adams. 1991.

Palmer, F. R. 1981. *Semantics.* Cambridge: Cambridge University Press.

Palmer, F. R. 1987. *Modality and the English Modals.* London: Longman.

Palmer, F. R. 1998. *Mood and Modality.* Cambridge: Cambridge University Press.

Raja, P. 2003. *The Language of an Indonesian Child Named Mika in the Telegraphic and Simple Sentence Stages.* Unpublished Dissertation. Universitas Negeri Malang.

Regina. 2003. *The Nature of Taboos in Dayak Kanayatn Community.* Unpublished Dissertation. Universitas Negeri Malang.

Salija, K. 2004. *The Effects of Using Formal Outlines in Writing Exposition. Unpublished Dissertation.* Universitas Negeri Malang.

Simpson, P. 1993. *Language, Ideology and Point of View.* London: Routledge.

Susilo. 2004. *Thought Patterns as reflected in the Linguistic Features in Indonesian and English Letters Written by Indonesians.* Unpublished Dissertation. Universitas Negeri Malang.

Young, R. E. 1991. The Rhythm of Education and the Teaching of Writing. In K. H. Adams and J. L. Adams (Eds.).