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PLURALIZATION AND COUNTABILITY IN GHANAIAN ENGLISH AND TANZANIAN ENGLISH

State of the art
English plural morphology has received a great deal of attention in both formal semantics and sociolinguistics, because it is one of the key indicators of whether a noun is count or mass and because the count–mass distinction is the primary grammatical distinction in the English nominal system, however no formal semantic work has been done on countability in non-standard Englishes. Generally, plural morphology, which most commonly takes the form *-(e)s* as in *dishes*, marks reference to multiple entities, in alternation with its singular counterpart—e.g. *dish*—which refers to a single entity. This alternation has long been identified as the key indicator of countability since mass nouns—e.g. *equipment, juice*—are generally not found to have plural forms but are able to refer to multiple entities. The central issues in semantics and sociolinguistics related to plural morphology and its relation to countability have been the distribution and range of meanings that plural morphology has in Standard English (see, e.g. Acquaviva, 2008) and World Englishes (see, e.g Hall et al., 2013; Mohr, 2016, 2017; Schmidtke and Kuperman, 2017) respectively.

In formal semantics, the most widespread analyses of plurality are those following Sauerland (2003), Chierchia (2010) in which a plural noun refers to one or more individuals and is often accompanied by the implicature that strictly two or more individuals are being referred to. While singular–plural alternation is a key indicator of being a count noun, analyses have also been provided for cases in which substance denoting mass nouns like *juice* are plural in Standard English. The underlying assumption here is that a semantic shift occurs that allows the mass noun to be counted in terms of portions—e.g. glasses of juice—or kinds—e.g. apple juice and orange juice. Object mass nouns like *furniture* and *equipment*, do not allow this semantic shift in Standard English, and it has been proposed that this is due to the fact that these nouns are not encoded with the means to overcome the overlapping subkinds they denote—e.g. the subkind vanities overlaps with the subkind desks—while substance mass nouns do not have this issue of denoting overlapping subkinds—e.g. the subkind basmati rice does not overlap with the subkind jasmine rice (Sutton and Filip, 2018). Lastly, Acquaviva (2008) has discussed another kind of use of plural morphology on substance mass nouns in Standard English, namely that which occurs in literary contexts, such as *The Snows of Kilimanjaro*, and these have been compared to the so-called "abundance" plurals in Modern Greek. As most formal semantic studies of English focus on Standard English, there is little formal semantic work on non-standard Englishes. Doing formal semantic analyses of non-standard Englishes, is one aim of this project.

Corpus studies in the World Englishes framework have repeatedly shown that plural morphology has a different distribution in norm-developing, Outer Circle Englishes and norm-dependent, Expanding Circle Englishes—i.e. those like Ghanaian English and Tanzanian English that are used in government and education but not spoken as a native language by a majority of the population (see Kachru, 1986). In both Ghanaian and English and Tanzanian English it has been shown that certain object mass nouns—e.g. *equipment*—are used with plural morphology, which stands in stark contrast to the lack of plural object mass nouns in Standard English (Hall et al., 2013; Mohr, 2016, 2017; Schmidtke and Kuperman, 2017). As most sociolinguistic studies have looked quantitatively at the extent to which the use of plural morphology differs across Englishes, but not at the extent to which other characteristics of the count–mass distinction differ, this project will focus both on the extent to which the semantic contribution of plural morphology differs across Englishes and the extent to which this reflects further changes to the count–mass distinctions in these Englishes.

Research Questions
The general goal of the planned project is **to contribute to the formal semantic analysis of non-standard Englishes** by focusing on plurality and its role in the count/mass distinctions of Ghanain English and Tanza-

nian English. Working towards this goal will fill in two research gaps: (i) the gap in formal semantics because of the focus on Standard English to the exclusion of other Englishes, and (ii) the gap in sociolinguistics because of the focus on corpus methods, which overlooks some of the more nuanced data that is more easily addressed with semantic methods. Notably, Mohr (forthcoming) has begun to bridge this gap by combining corpus approaches with the framework of Barner and Snedeker (2005) in research on these and other Englishes in Africa.

The main research questions of this project are summarized below:

1. What exactly are the differences in the morphosyntactic characteristics of the count–mass distinctions of Ghanaian English and Tanzanian English as compared to Standard English?
2. To what extent do nouns differ with respect to their count or mass encoding across Ghanaian English and Tanzanian English?
3. To what extent does the semantics of individual nouns and/or plural morphology contribute to the existence of plural object mass nouns in Ghanaian English and Tanzanian English?
4. To what extent do the widespread analyses of plural morphology (e.g. Sauerland, 2003) and countability (e.g. Chierchia, 2010) capture the patterns in Ghanaian English and Tanzanian English?

Differences in the extent to which English was imposed upon the people of Ghana and Tanzania by British colonists entail differences in the languages' structure. Colonial administration in Ghana set up English schools in the 1880s, and today Ghanaian English has a small native-speaker population but is widely taught in schools in Ghana and, as it is part of a highly diverse linguistic context with 50 indigenous languages spoken by communities of various sizes, is used with a great deal of code-switching (Huber, 2004). While colonial rule began in Tanzania before the British took power in the early 1900s, widespread English education occurred towards the end of colonial rule, and this was soon supplanted by primarily Kiswahili education under Tanzania's Swahilisation policy after independence (Schmied, 2004b). While English is still widely taught in both countries, it is far more commonly used in Ghana than in Tanzania, where Kiswahili is used more frequently as a wide-spread lingua franca all over East Africa (Blommaert, 2014). Given frequency of use is known to impact language structure (e.g. Ellis et al., 2014), it follows that **Ghanain English and Tanzanian English are expected to differ from each other in addition to differing from Standard English**.

Mohr (2016) and Schmidtke and Kuperman (2017) have shown that certain mass nouns—e.g. *equipment, evidence*—often occur with plural morphology in Ghanaian English and Tanzanian English, which is one characteristic of the languages that set them apart from Standard English in which these nouns do not occur with plural morphology. The pluralization of nouns like *equipment* and *evidence* is even more perplexing given certain theories (e.g. Sutton and Filip, 2018) explicitly predict that this should not be semantically possible because of the characteristics of this particular class of mass nouns, which refer to discrete entities, but grammatically pattern with nouns like *mud*, which refer to undifferentiated stuff. What requires investigation is **the nature of this use of plural morphology on mass nouns**, for example whether it is L1 transfer, marks a novel, countable sense of the singular form, or whether it is a retention of the historical form[1] that might indicate something like abundance as is also seen on *water* and in Modern Greek (Tsoulas, 2008).

A larger, and related question is **the extent to which the count/mass distinction in Ghanaian English differs** from the vastly complex count/mass distinction seen in Standard English. A large number of determiners *a(n), each, every, many, much,* etc. have long been used to identify count and mass nouns in Standard English

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[1]"equipment, n.". OED Online. December 2020. Oxford University Press. https://www.oed.com/view/Entry/63796?redirectedFrom=equipment (accessed February 11, 2021).

(see, e.g. Pelletier, 1975), for example *many* is used with count nouns like *tools*, but *much* is used with mass nouns like *equipment*. In addition to the fact that plural morphology is used with a different distribution in Outer Circle Englishes, it is also known that the distribution of determiners also differs in Outer Circle Englishes (Meierkord, 2004), and that this has been reported for Ghanaian English as well (Huber and Dako, 2004). For example, singular nouns are often used without determiners in morphosyntactic environments were they would have them in Standard English—e.g. "I want to buy car" (Huber and Dako, 2004, p. 860), which is semantically predicted not to occur in English where singular count nouns are assumed to be arguments rather than predicates (Chierchia, 1998). One goal of this research project is **analyze the semantic status of singular nouns in Ghanaian English and Tanzanian English** and the consequences this has for semantic analyses with typological consequences like those of Chierchia (1998).

Outer Circle Englishes are also known to exhibit simplification, which results in a reduction of irregularities (Trudgill, 1986). In Ghanaian English, simplification has been observed in the pronouns system, whereby third person pronouns are often reduced to the masculine forms, *he/him*, only. A crucial point of investigation is the extent to which simplification has occurred within the set of morphosyntactic indicators of countability in Ghanaian English. Morphosyntactic indicators of countability such as the *many/much* distinction, can be considered irregularities in the crosslinguistic context: Standard English may be irregular in having specific proportional quantifiers for count nouns and mass nouns respectively—i.e. *many* and *much*—as nascent evidence suggests many other languages do not—e.g. Greek, Hungarian, Japanese (Erbach, 2020). A working hypothesis is simplification might lead to the loss of either *many* or *much* from Ghanaian English and Tanzanian English. These differences in the distribution of plural morphology and determiners, along with the possible loss of marked forms that constitute indicators of countability, suggest that the count–mass distinction has a distinct, possibly reduced form in Outer Circle Englishes, as reported by Schmied (2004a), who claims that, not only is plural morphology extended in Tanzanian English, compared to British English, but that there is little distinction between count and mass nouns in general, as seen in a tendency to omit articles and determiners. Furthermore, (Erbach, 2020) predicts that such reduction in morphosyntax also results in the reduction of the number of object mass nouns. It is the goal of this research project to **document the morphosyntactic indicators of countability in Ghanain English and Tanzanian English**, to examine the extent to which simplification has occurred, thereby providing the means to test theories like those of Chierchia (1998) and Erbach (2020).

Altogether, the project builds on the work of Mohr (forthcoming) and contributes to the nascent body of formal semantic analyses of Outer Circle Englishes by testing and eventually building formal models of plurality and countability against data from Ghanaian English and Tanzanian English, which will simultaneously help to raise the status of these languages in the post-colonial context. Formal analysis of such languages is needed to be able to fully capture the dynamic nature of language use.

Methods
A mixed-methods design will be used to answer this project's research questions. The methods will include a novel corpus study, elicitations with consultants, and questionnaires to build the data set, and formal semantic methods for building coherent analyses of the novel data. Importantly in order to conduct the necessary fieldwork, short trips to Tanzania and Ghana (approximately 3 weeks each in June-July 2022) will provide the needed contact with consultants in the first year of the fellowship.

The first work-package of this project aims to begin to answer research questions 1 and 2, by expanding on the aforementioned corpus studies which have begun to uncover the extent to which the use of plural morphology in Ghanaian English and Tanzanian English differs from Standard English (e.g. Mohr, 2016). This work will be expanded upon by investigating the use of morphosyntactic indicators of countability other

Table 1: Summary of Work-Packages and Research Questions.

Work Package (WP)	Research Question (RQ) for Ghanaian (GE) and Tanzanian English (TE)
WP1: Corpus Analysis	RQ1: Morphosyntax of the count–mass distinctions in GE and TE
	RQ2: Nominal countability classes in GE and TE
WP2: Fieldwork	RQ3: Nominal and plural semantics in GE and TE
WP3: Questionnaires	RQ1, RQ2, RQ3
WP4: Formal Analysis	RQ4: Formal analysis of plural morphology and countability in GE and TE

than plural morphology, for example *a(n), each, every, many, much,* etc. In addition to uncovering the extent to which the complexity of the count–mass distinction in Standard English is simplified in Ghanaian English and Tanzanian English, by following the methods of Grimm and Wahlang (2021), examining the classes of nouns that co-occur with different sets of determiners will begin to uncover the distribution of nouns across countability classes in Ghanaian English and Tanzanian English.

The second work-package will begin to answer research question 3 with fieldwork, eliciting novel data and felicity and grammaticality judgments from speakers of Ghanaian English and Tanzanian English of sentences that I have constructed following the semantic fieldwork methods of Matthewson (2004). The fieldwork will take place with the contacts of the host, Prof. Dr. Mohr, in Ghana and Tanzania, and their respective research networks. This work will provide the opportunity to explore with the necessary level of detail, the range of possible meanings had by the distinct, countability related constructions in Ghanaian English and Tanzanian English. This work-package will target the aforementioned pluralized object mass nouns and bare singular nouns, as well as other distinct phenomena uncovered in the first work package.

The third work-package will test the hypotheses made from the insights gained in the previous work-packages by using a series of questionnaires. The questionnaires will help to answer research questions 1-3, by aggregating judgments from a larger number of Ghanaian English and Tanzanian English speakers than is possible with fieldwork. The questionnaires will also constitute the culmination of the empirical phase of the project providing a well-rounded data set for testing and building formal semantic theories of pluralization and countability.

The fourth and final work-package will answer research question 4 by testing the leading theories of pluralization (such as Sauerland, 2003; Chierchia, 2010) and countability (such as Chierchia, 2010; Rothstein, 2010; Sutton and Filip, 2018). The results of the existing sociolinguistic studies of pluralization in Ghanaian English and Tanzanian English already suggest that pluralization occurs on nouns in countability classes that are predicted to not take plural morphology, namely object mass nouns (Hall et al., 2013; Mohr, 2016, 2017; Schmidtke and Kuperman, 2017). The previous work motivates either an analysis in which object mass nouns take plural morphology to indicate an abundance, or that certain object mass have become dual life in Ghanaian English and Tanzanian English, meaning that these nouns have both mass denotations that cannot take plural morphology and count denotations that can take plural morphology. These hypothesis will be tested with the research in work packages 1-3, allowing work package 4 to produce formal semantic analyses of pluralization and the count–mass distinctions in Ghanaian English and Tanzanian English.

By collecting and analyzing the data in the aforementioned manner and summarized below in Table 1, this project will provide an account of pluralization and countability in Ghanaian English and Tanzanian English. This will accomplish the main aim of the project, namely to provide a formal semantic analysis of Outer

Circle Englishes, and subsequently help to raise the status of Ghanaian English and Tanzanian English.

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