

Acts and Implicatures: how Gricean Conversational Implicature addresses empirical gaps in Austin's Speech Act theory

LS 261: Pragmatics
Auromita
H00MAENG20190259

Prompt: Does the Speech Act Theory of Austin provide a satisfactory account of the part of meaning that is related to the context of an utterance? In what ways is that approach extended and sharpened in Grice's theory of Conversational Implicature?

This paper is structured around the following questions:

- i. What are the aspects of meaning that relate to the context of an utterance?
- ii. Which of these is Austin's theory of Speech Acts trying to address?
- iii. How well does it account for them?
- iv. Are there relevant observations that the theory fails to address?
- v. How can Grice's theory of Conversational Implicature be employed to address these questions?

1 Meaning and Context

In this paper, I take the ‘meaning’ of an utterance to be loosely equal to whatever is required for the recipient to ‘understand’ it. One part of this meaning clearly depends on the choice of words and how they are put together—this is an aspect of meaning to access which one only needs to have a knowledge of the language. However, it is intuitively obvious that some part of ‘meaning’ is also contingent on the context in which the utterance is produced. It is not easy to delimit exactly what ‘context’ means. Attempts to define the notion of context generally agree that it should include both linguistic features and some information about the participants, space, and time, but a more fine-grained characterization seems to be a futile exercise. In this paper, the term is used loosely and in an intuitive way to refer to features of the situation that are linguistically and culturally relevant to the production and interpretation of utterances. There could be aspects of the context that are coded into the language structure. Thus, to interpret these parts of the meaning, one requires access to the relevant contextual information that is coded. E.g. tense morphology encodes a certain feature of the context—time—into the utterance. To decode this, the listener needs to have an idea of when the sentence was uttered. Alternatively, there are principles of language use that allow the speaker to express, and the receiver to ‘read in’, meaning into the utterance that was not encoded in the structure itself, and we could say that the principles governing this are provided by the context.

Therefore, the context in which an utterance is produced can be understood to provide many types of information that arguably relate to the meaning in some way. These include, but are not limited to, (i) the values of the elements of language structure that make reference to different aspects of the setting, i.e. the interpretation of deictic elements like tense, honorifics, pronouns, etc, (ii) the activity in which the utterance is being used, (iii) the intent of the speaker in making a particular utterance, (iv) the conventions related to the setting/activity, etc. Therefore, there are potentially multiple aspects of meaning that are related to the context. Which of these does Austin’s theory of Speech Acts try to address? The next section discusses this.

2 What is Austin’s theory a theory of?

The previous section highlighted that the context could potentially provide many types of linguistically relevant information. We want to consider whether Austin’s Speech Act theory provides a satisfactory account for some of these in how they contribute to meaning. Towards this, the present section discusses which of these aspects Austin’s theory is concerned with i.e. is trying to account for.

An issue that cannot be separated from this question is that whether or not a certain aspect of the context is considered as essential to the meaning of an utterance (and thus needs to be accounted for) depends on how we define ‘meaning’. That is, what we think it means for an utterance to be ‘meaningful’, and what it means for a hearer to understand the utterance. Here, Austin’s theory of Speech Acts must be understood in light of the philosophical background against which it was developed.

Logical positivism It is generally recognized that truth-conditional semantics is a narrow and highly constrained treatment of sentence meaning. However, in the 1930s a predominant philosophical doctrine was that of Logical Positivism. This approach took the meaning of a sentence to be exclusively concerned with the issue of truth and falsity, to the extent that a sentence which was

not verifiable was in principle considered *meaningless*. This means that most of the language use in daily life, as well as language used primarily for aesthetic purposes such as poetry, was devoid of meaning under this approach. This is an approach to meaning that treats it as removed from actual use. Under such an approach, there aren't too many aspects of meaning that are related to the context and need to be accounted for. Austin's theory challenged this very notion of meaning. Through a series of arguments (elaborated in sec. 3), he argued convincingly that all utterances, in addition to (conventionally) meaning something, also *do* something. Utterances whose truth/falsity can be verified are only a special sub-case. Thus, any theory of meaning that does not consider how an utterance is used in a context to do what it does, is inadequate. This sentiment is also found in the later work of Ludwig Wittgenstein in his insistence that language can only be understood in relation to its use, c.f. 'language-games'. However, the two philosophers developed their theories independently.

To return to the question of what Austin's theory is about—there are two things that the theory does:

- i. It argues that all utterances are Speech Acts—uttering a sentence amounts to doing something. 'Understanding' an utterance thus involves understanding what the utterance does. Thus, one component of sentence meaning lies in facts about its use, provided by the context. By doing this, he argues that there is indeed a major component of meaning that is related to the context.
- ii. It provides a proposal about *how* an utterance does what it does, i.e. how these contextual facts contribute to meaning.

Therefore, Austin's theory of Speech Acts aims to give an account of one of the contributions of context listed in sec. 1: providing the information that allows the hearer to understand what kind of action the speaker is performing by making a particular utterance, and thereby the intention behind an utterance. The next section details the argument in Austin's theory, focusing on what it says about the relevance of context to sentence meaning.

3 The Speech Act theory

The main ideas of the Speech Act theory are found in a collection of Austin's lectures published under the title *How To Do Things With Words* (Austin, 1975). In it, he first argues that the positivist doctrine of truth and falsity as being central to meaning is inadequate. Secondly, he outlines a proposal as to how a more complete and satisfactory notion of 'meaning' can be developed. The major arguments are outlined below:

Performatives First, Austin notes some examples of what appear to be a special class of declarative sentences that do not seem to be used to make statements or describe the state of affairs, but rather to *do* something. E.g.:

- (1)
 - a. I promise to be there tomorrow
 - b. I object
 - c. I bet you they will win the match
 - d. I dub thee Sir Walter

These seem to belie the positivist attempt of verification—trying to judge any of the sentences above as true or false is absurd. He calls these types of sentences ‘Performatives’, and contrasts them with so-called ordinary declarative sentences such as statements and assertions which are verifiable, called ‘Constatives’. The special feature of Performatives is that the issue of truth/falsity does not apply to them. However, there are situations where the utterance of a performative can ‘go wrong’. This happens when the context in which they are uttered fails to meet certain conditions. These ‘felicity conditions’ are dimensions along which the success of a performative can be assessed, parallel to truth conditions for constatives. Thus, just as a truth-conditional treatment of meaning will take truth conditions to constitute an important part of the meaning of a sentence, felicity conditions are the major dimension along which the meaning of performatives can be understood. Austin classifies felicity conditions into categories as follows:

- (2) A. There must be a conventional procedure having a conventional effect, and the persons and circumstances must be appropriate as specified in the procedure
- B. The procedure must be executed (i) correctly and (ii) completely. If this involves some specific response on the part of the hearer, this must happen (satisfactory ‘uptake’)
- C. The participants must have the requisite thoughts and intentions, and follow up with any specified consequent action, i.e. the action should be sincere

Violations of A and B lead to ‘misfires’, whereas violations of C are ‘abuses’ of the action to be performed by the performative. As the list above shows, these felicity conditions can only be evaluated with information about the context. Moreover, they rely on specific conventions that link words to institutional procedures. Since felicity conditions relate to features of the context, this means that the context of utterance plays a crucial role in understanding the meaning of a performative.

Performatives vs Constatives Once it is established that the meaning of a performative sentence is inextricably tied to the context of utterance, Austin now scrutinizes the validity, and indeed feasibility, of distinguishing them from constatives. If this distinction encodes the boundary between sentences that are to be understood purely truth-conditionally and those that are to be understood in terms of felicity, then it should be possible to characterize this distinction. However, this turns out to be a futile exercise: we could say that performatives are first person indicative sentences in the present tense, but this fails to exclude sentences like the following which are not understood as performative:

- (3) I now mix the red and blue paints

Another possibility is to say that performatives are characterized by the use of ‘performative verbs’:

- (4) a. I hereby find you guilty
- b. ? I hereby mix the red and blue paints

The verb in (b) is incompatible with ‘hereby’, and hence not a performative. However, it is possible to express a meaning like (a) without using the performative verb:

- (5) You are guilty

Austin thus makes a division between utterances like 4a which are ‘explicit performatives’ and 5, which are ‘implicit performatives’, but can in principle be stated explicitly (c.f. principle of expressibility; Searle et al. (1969)). This already starts to expand the range of sentence types that are performatives and thus to be understood primarily with reference to the context of utterance. His next argument extends this further.

Speech Acts From the initial suggestion that the class of performatives might be much larger than they seem at first sight, Austin eventually asserts that the dichotomy itself is untenable. Instead, both constatives and the different types of performatives are all particular subtypes of what he calls ‘Speech Acts’. The argument is outlined below.

As the class of performatives slowly increases to include more types of sentences, it becomes clear that most utterances in fact seem to be ‘doing’ something, and the nature of this action can be understood only with reference to the context. For example: an utterance like *Don’t leave!* could be an act of requesting, ordering, warning, advising etc, depending on the context. Thus it would appear that the only types of sentences that do not seem to be doing something are those that state facts, i.e., constatives.

However, Austin points out that even this distinction is not substantial. Evidence for this:

- i. It is not necessary that constatives cannot have a performative aspect. There is no incompatibility between an utterance bearing a truth value and performing an action. E.g.:

(6) I assure you that Sana will be on time

This simultaneously performs the action of assuring, and provides information that can be true or false.

- ii. Constatives are liable to the same kinds of felicity conditions as performatives, suggesting that facts about the context are also important to their meaning. E.g.:

- (7)
 - a. presupposition failure makes a constative infelicitous just as the absence of appropriate circumstances makes a performative misfire (condition A): saying *Ali’s car is yellow* is infelicitous if Ali does not in fact own a car.
 - b. just as making a promise without the sincere intention to follow through constitutes an abuse, uttering a constative without a sincere belief in the assertion is infelicitous (Moore’s Paradox): an utterance like *It’s raining outside and I don’t believe it* is anomalous for this reason.

- iii. It could still be argued that truth and felicity are essentially different kinds of properties, since the latter can hold in degrees, but truth is ‘all or none’. However, Austin argues that this is not in fact necessary. Things can be ‘roughly true’. E.g.: in most ordinary contexts, saying *The wall is 10 feet high* will be considered true even if the wall is in fact 9.5 feet high, and certainly ‘more true’ than a statement like *The wall is 15 feet high*. Thus, truth can also have degrees, and moreover the acceptability of a statement as ‘true’ depends on the context of utterance (consider the preceding remark being made as a casual observation by a passer-by vs by the architect in order to get the measurements for installing a gate in the wall).

Thus, the dichotomy between constatives and performatives is rejected. Instead, Austin posits that all utterances are ‘Speech Acts’– in addition to whatever conventional ‘meaning’ they have, utterances also ‘do’ specific actions, and this can only be recovered by reference to the context. Thus, he successfully argues that there is indeed an aspect of meaning that is related to the context, and that any successful theory of meaning must be able to account for it. He then goes on to propose a possible way in which this aspect of meaning comes about. This is discussed in the next section.

Forces: how do utterances do things? As discussed above, Austin at first distinguishes between performatives (utterances which constitute an action) and constatives (‘ordinary’ statements which can be true or false), but eventually discards this distinction to say that all utterances, in addition to meaning something, also do something. It now becomes necessary to clarify how an utterance does what it does. Towards this, Austin introduces the notion of ‘force’– an utterance, in addition to a meaning component, is associated with some force that allows it to perform a particular type of action in a given context. In producing an utterance, a speaker is simultaneously performing three kinds of acts, and thus three basic types of force are identified:

- i. Locutionary force: What is generally referred to as the ‘meaning’ of an utterance, arising from its syntactic/semantic properties– uttering any sentence with determinate sense and reference constitutes a locutionary act
- ii. Illocutionary force: the expected effect of the utterance based on mutually agreed-upon/institutionally established convention, and thus (theoretically) determinate.
- iii. Perlocutionary force: All the intended or unintended effects/consequences that an utterance has in a particular situation (not necessarily automatically achieved anytime the utterance is issued). These are dependent on the exact circumstances of utterance, and are thus indeterminate

For example, uttering the sentence *You must not leave your room* has the locutionary force of expressing a certain proposition which refers to the listener, relates them to an action through a modal verb and a negation, etc. The possible illocutionary forces include issuing an order, an entreaty, a warning, etc. In a particular circumstance (e.g. said by a parent to a misbehaving child), the utterance could have the perlocutionary effect of meting out a punishment.

In practice, however, the distinction between (ii) and (iii) is often troublesome to pinpoint, and it is possible that what is a perlocution in one language is an illocution in another (the language has a conventionally determinate expression to express/bring about the same effect). In practice, the term ‘Speech Act’ has now come to refer exclusively to the illocutionary act.

This characterization of speech acts, however, makes it clear that understanding an utterance involves, in addition to understanding its content (given by (i), traditionally studied as ‘meaning’), also understanding the force behind it. This is crucially dependent on properties of the speaker, the conditions, and appropriate uptake by the listener– in sum, the context of utterance. Without the notion of a speech act or force, there would be no systematic way to explain in our semantic theory when/how an utterance like *Go!*, for example, can be understood as a request vs a warning– we would either have to say that the verb “go” is polysemous between the two meanings, or say that the interpretation is completely extra-linguistic and thus unpredictable, neither of which capture our intuitions about its meaning. Thus, Austin’s theory of speech acts successfully accounts for a part of meaning that is systematically related to the context.

4 Limitations of Austin’s Speech Act Theory

Austin’s theory showed that language use and context must be central to any complete theory of meaning, and outlined a way in which such context-sensitive aspects of meaning can be modeled. While this contributed significantly to the understanding of certain aspects of meaning that are related to the context, many questions remain to be worked out. Some of these include:

- i. In Austin's theory, all speech acts are subject to certain felicity conditions. These conditions concern the properties of the speaker, hearer, and other aspects of the utterance context. However, it is not explicit on how the different forces associated with an utterance are linked to the set of felicity conditions that govern them.
- ii. What happens when the felicity conditions are not met?
- iii. Is it possible to delimit the types of possible illocutionary forces that can occur across languages? Austin briefly suggests that a typology of the performative verbs could be a starting point for such an exercise, but does not work this out in greater detail.
- iv. Beyond institutionally-based conventions and procedures, can the various possible illocutionary forces be motivated from more general principles? Since we want the theory of speech acts to be a language- and culture-general theory of meaning, this would be desirable.
- v. Following from the previous point, if illocutionary forces are primarily tied to convention, and speech acts involve illocutionary acts, then how do children acquire them?
- vi. There are cases where the intended action of the speaker does not seem to match the force conventionally associated with the particular performative verb or sentence type used. E.g. the imperative sentence *Please leave*, the interrogative sentence *Would you mind leaving?*, the declarative *I am sorry to have to tell you to please leave* and the overt performative *I request you to leave* all seem to convey the same illocutionary force— that of requesting the hearer to leave. How are these indirect speech acts (ISAs) performed, and how do listeners understand them?

Here, some insights from Paul Grice's theory of Conversational Implicature (Grice, 1981) can prove useful, and can potentially extend the coverage of Austin's Speech Act theory along these lines. The following section discusses this.

5 Links to Grice's theory of Conversational Implicature

Grice's Conversational Implicature is a theory of how people use language to communicate. A prerequisite to this is Grice's earlier theory of non-natural meaning or 'meaning-nn' (Grice, 1957): communication is achieved when the speaker's communicative intention becomes mutual knowledge between the speaker and the hearer. Thus, it is possible to communicate much more than the 'natural meaning' of the utterance. Conversational Implicature gives one way in which such non-conventional meaning, or inferences, can be communicated. Grice identifies four conversational maxims that allow for efficient, cooperative use of language:

1. Maxim of Quality: Try to make your contribution one that is true
2. Maxim of Quantity: Make your contribution as informative as required, and no more
3. Maxim of Relevance: Make your contribution relevant
4. Maxim of Manner: Be perspicuous

Together, these jointly express a general Cooperative Principle. The theory proposes that conversation is guided by the overarching assumption that the cooperative principle is being observed. This is straightforwardly the case when the maxims are followed. However, when an utterance appears

to violate one of these maxims, the hearer assumes that contrary to appearances, the speaker is adhering to the maxims on some deeper level. Inferences arise in order to preserve this assumption. Importantly, these maxims are not conventional or stipulative, but rather express rational ways of conducting any cooperative exchange. The rest of this section suggests some ways in which this theory can address some of the questions that Austin's original account of Speech Acts leaves unanswered.

How are illocutionary forces linked to felicity conditions? This question was first addressed by John Searle in his systematization of Austin's work (Searle et al., 1969). He attempted to explain how a particular illocutionary force comes to be associated with a particular 'illocutionary force indicating device' (IFID). To do this, he invokes John Rawls' 1955 notion of 'constitutive rules'—rules which constitute the activity itself (as opposed to 'regulative rules', which control a previously existing activity) and asserts that the rules relating an IFID to its associated illocutionary force are constitutive. This means that uttering the IFID *constitutes* the illocutionary force.

Since an illocutionary act is 'successful' only when certain felicity conditions are met, this suggests that subsets of these felicity conditions together constitute the illocutionary forces associated with the utterance. Thus, he proposes a classification of felicity conditions based on what types of conditions they specify—propositional content, preparatory preconditions, conditions on sincerity, and the essential condition. The essential condition states that 'Uttering IFID X counts as doing Y'. E.g. if the speaker S utters the sentence *Please close the door*, then in order for S to have successfully made a request, the essential condition is that the utterance counts as an attempt by S to get the hearer H to close the door.

Searle then uses this as a schema to map out the different types of illocutionary forces. E.g., a 'request' is constituted of a certain set of felicity conditions, while a 'warning' is constituted of a different combination of felicity conditions. The basic insight here is that the conditions that make an utterance successful actually *constitute* its meaning. Grice's theory can extend this idea in the following way:

Strawson (1964) notes that what lies at the heart of most everyday communication is not culture-bound illocutions of the kind discussed by Austin, but rather specific communicative intentions as understood by Grice (1957). This means that the fundamental part of context-dependent meaning is not so much about what the utterance by-default *does*, but rather about what the speaker *intends to communicate* by making the utterance. Grice's theory of Conversational Implicature is an account of how such intention can be conveyed by the speaker (and understood by the hearer) through general principles of cooperation, by observing or intentionally flouting a set of maxims. Thus by thinking of illocutionary force in terms of communicative intent, it is possible to say that given the essential condition (Searle et al., 1969), the felicity conditions on an illocutionary act are predictable by these general maxims. This would provide a principled way of linking specific illocutionary forces to the particular felicity conditions that govern them.

An advantage of such an account is that these principles are general and arguably universal, rather than bound to specific cultural conventions.

Is it possible to delimit the types of possible illocutionary forces that can occur across languages? As noted above, Searle proposes a particular classification of felicity conditions and then uses this as a schema to map out the different types of illocutionary forces. Using this method,

he attempts an exhaustive classification of the possible utterance-types that a language can have. He identifies five basic types of utterances, based on what kinds of actions they can perform: representatives, directives, commissives, expressives, declarations. The main limitation of this approach is that the typology lacks a principled basis— why certain felicity conditions should come together into these particular combinations to give these particular utterance-types is not adequately motivated. Thus, such a list of utterance types cannot be said to be exhaustive, and later researchers proposed alternative schemes.

There is reason to believe that the prospects for such a classificatory exercise might in general be bleak, given the fact, mentioned earlier, that there could potentially be an infinite number of perlocutions, and what is a perlocution in a language could easily be an illocution in another. However, a typology of this kind could potentially account for persistent sentence-types such as declaratives, interrogatives, and imperatives that appear to be present, and are conventionally associated with particular illocutionary forces (asserting, questioning, requesting/ordering respectively), across languages.

If we were to attempt such a classification, then here too linking illocutionary forces with Grice's meaning-nn as suggested above could provide a potential avenue for such an exercise that is arguably less stipulative: a principled classification of illocutionary forces could be based on the nature of the communicative intentions themselves, and the kinds of effect they aim to bring about on the hearer. An additional advantage is that this acknowledges the role of the recipient in the successful completion of the speech act, which was somewhat overlooked in Searle's account. Such an attempt at classification was made by Schiffer (1972).

Indirect Speech Acts (ISA) Austin claims that illocutionary force and its indicators are 'conventional' – the force of an utterance can be recovered from its form, either through the presence of a certain performative verb, or its sentence-type (e.g. an interrogative is conventionally associated with the illocutionary force of questioning). This means that in some way, the illocutionary force is built into the sentence form. Let us call this the 'Literal Force Hypothesis' (LFH). Indirect speech acts pose problems for this hypothesis. E.g.:

- (8) a. I request you to lend me some money
- b. It would be great if you could lend me some money
- c. Do you think you could lend me some money?
- d. Can you to please lend me some money?
- e. You wouldn't be able to lend me some money by any chance, would you?

All these sentences are understood to have the same illocutionary force. The forms in b–e are indirect ways of making the request expressed in a. However, the LFH predicts that b should have the force of an assertion and c–e that of a question. Then how does the recipient recover the intended force from these? A closer look at language use reveals that most illocutionary acts of this kind are in fact indirect. Thus in actual usage, what people can do with these sentences appears to be largely unrestricted by the form, questioning the direct form–force correlation of the LFH. On the other hand, sentence c shows that the word 'please', a marker of a request-like force, can appear with the interrogative sentence if the sentence in fact expresses a request. It cannot appear with a question that does not express a request:

- (9) ?? Does this road please lead to the highway?

This means that the form can still take the marker of its indirect force. The Speech act theory as devised by Austin cannot provide a satisfactory answer to this puzzle. Here, Grice's theory of conversational implicature can greatly sharpen the explanatory power of the theory: we can say that the sentences in c–e above carry a literal force of a question, but additionally also carry an indirect force of a request, in the form of a conversational implicature. Thus in a context where the question reading is not likely, Grice's cooperative principle predicts that the literal force will be considered conversationally inadequate, and the inference of a request will be provided by implicature.

Appealing to Gricean theory, combined with theories of politeness, also gives a reasonable account for *why* speakers often choose to use the indirect way of performing a speech act over a direct one: the cooperative principle suggests that there must be a reason for deviating from the maxim of manner. Thus by implicature, the speaker is able to communicate that additional considerations of politeness are being taken into account in performing the speech act.

What happens when felicity conditions are not met? Following on from the line of thinking above, it is clear that Grice's theory of implicature addresses an important gap in the speech act theory of Austin, namely, what happens when a speech act fails to meet the relevant felicity conditions. Consider the following example: the felicity condition on sincerity requires that in order to successfully perform the act of asking a question, the speaker must sincerely want to know the answer, and commits the hearer to answering the question. Suppose I ask the person standing by the door,

(10) Do you think you could close the door?

This should be infelicitous for the reasons discussed above—given that the person is near the door and able-bodied, I know that they do, in fact, have the ability to close the door. In fact, a response like *Yes* would be strange. Thus Austin's theory predicts that I fail to perform the act of asking a question. But it does not address what the utterance *does* do in this case. It is clear that the listener in this case is unlikely to be nonplussed because the utterance is pragmatically anomalous, but is rather likely to simply interpret it as a request to close the door. This prediction is correctly made (parallel to the money-lending example in the previous section), by integrating Grice's theory of conversational implicature into the general theory of speech acts. The latter thus increases the explanatory power of the former, and sharpens it by bringing it closer to actual usage.

How are speech acts acquired? Lastly, another avenue of 'actual usage' is the acquisition of language by children. Research on the functions underlying a child's early utterances suggests that prior to the first syntactic utterances, the speech functions associated with utterances (e.g. requests, demands, calls) are already developed during the holophrastic stage. Here, thinking of speech acts in terms of Gricean communicative intentions seems to be empirically more viable than Austin's convention-based account.

6 Conclusion

Austin's Speech Act theory successfully argues that any satisfactory theory of meaning must necessarily take account of the contextual information, since a major part of understanding an utterance (and thus, meaning) involves understanding what the utterance *does* in a given speech context. It provides an account of the part of sentence meaning that depends on certain types of contextual

information— relating to the intention of the speaker, the effect on the hearer, the setting, and associated conventions. However, there are many questions that it does not address, and some of these can be approached by linking speech acts closely to the Gricean notion of communicative intention, and appealing to Grice’s theory of Conversational Implicature.

References

- Austin, J. L. (1975). *How to do things with words* (Vol. 88). Oxford university press.
- Grice, H. P. (1957). Meaning. *The philosophical review*, 66(3), 377–388.
- Grice, H. P. (1981). Presupposition and conversational implicature. *Radical pragmatics*, 183.
- Rawls, J. (1955). Two concepts of rules. *The philosophical review*, 64(1), 3–32.
- Schiffer, S. (1972). Meaning.
- Searle, J. R., Searle, P., Willis, S., Searle, J. R., et al. (1969). *Speech acts: An essay in the philosophy of language* (Vol. 626). Cambridge university press.
- Strawson, P. F. (1964). Intention and convention in speech acts. *The philosophical review*, 73(4), 439–460.