Ingestive Verbs, Causatives, and Object Symmetry in Lubukusu
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1 Introduction

Research into object symmetry compares the grammatical function of two objects in a ditransitive predicate. Of particular interest are derived ditransitives where a valency-changing morpheme increases the valency of a transitive verb. The central question is whether an object licensed by the base verb and an object licensed by, say, an applicative morpheme have the same grammatical function. Several aspects of grammar have been proposed to account for object (a)symmetries: for example, syntactic differences, especially the height of argument-licensing heads (Baker 1988, Ngonyani 1996, McGinnis 2001, Harley 2002, McGinnis and Gerds 2003, Jeong 2007); differences in thematic role (Bresnan and Moshi 1990, Alsina and Mchombo 1993); and the animacy and person features of the two objects (Morolong and Hyman 1972, Aranovich 2009, Baker, Safir, and Sikuku 2012). In this squib, I make the novel claim that verb meaning is an additional component in determining symmetry.¹ I present a case study from Lubukusu (Bantu; Nasimile). This research was funded in part by NSF grant 1451566.

¹ In Jerro 2016b:172–191, I discuss the considerable variation in symmetry facts for Lubukusu and other Bantu languages: in particular, symmetry varies across various aspects of grammar, such as (minimally) the thematic role of the applied object, the diagnostic in question, and the animacy of the objects. Here, I take as a starting point that it is not clear how the different aspects of symmetry interact to determine symmetry in a given clause, as previous accounts have not addressed the breadth of crosslinguistic variation. I focus on showing that there is an additional aspect (i.e., verb meaning) that needs to be taken into consideration as work proceeds toward understanding how various aspects of grammar conspire to determine the symmetricality facts for a particular language.
Kenya) where the general pattern with morphological causatives is asymmetry, but caused ingestive verbs are symmetrical.

I sketch a brief analysis of these facts by building on the observation that ingestive verbs in many languages behave distinctly under causativization (Masica 1976, Amberber 2002, Næss 2007, 2009, Krejci 2012). I propose that the symmetry of caused ingestives in Lubukusu follows from a principled difference in the lexical semantics of these verbs; adopting an approach from Krejci (2012), I analyze ingestive verbs as inherent reflexive events wherein an agent causes him- or herself to digest something. With caused ingestives, there is a delinking of the reflexive relationship between the causer and the ingester, and thus caused ingestives already have a causal relationship in their event structure. This contrasts with other verbs for which causativization adds a wholesale new causal subevent. It is this difference in the lexical semantic nature of the verb that provides a starting point for explaining the divergent behavior of caused ingestive verbs with respect to object symmetry.

2 The Morphological Causative and Object Symmetry

Lubukusu is a Bantu language spoken in western Kenya (Mutonyi 2000, Wasike 2007, Sikuku 2011). Causatives in Lubukusu are marked by the morpheme -esy (or the allomorph -isy, determined by vowel harmony), and with many verbs the objects are asymmetrical. For example, with the verb khu-pa ‘to hit’ in (1), the causee object can be the subject of the passive in (2a), but the verbal object cannot in (2b).

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(1) O-mw-ekesi 0-a-p-isy-a o-mu-khangarani
    1-1-teacher 1.SBJ-PST-hit-CAUS-FV 1-1-warrior
    li-sisi.
    5-wall
    ‘The teacher made the warrior hit the wall.’

(2) a. O-mu-khangarani 0-a-p-isy-ibw-a li-sisi
    1-1-warrior 1.SBJ-PST-hit-CAUS-PASS-FV 5-wall
    ne o-mw-ekesi.
    by 1-1-teacher
    ‘The warrior was made to hit the wall by the teacher.’

b. ??Li-sisi ly-a-p-isy-ibw-a o-mu-khangarani
    5-wall 5.SBJ-PST-hit-CAUS-PASS-FV 1-1-warrior
    ne o-mw-ekesi.
    by 1-1-teacher
    ‘The wall was made to be hit by the warrior by the teacher.’

2 The data presented here were elicited by the author in Eldoret, Kenya, in July–September 2013 and in Bungoma, Kenya, in August 2015.

With the ingestive verbs *khu-nywa* ‘to drink’ and *khu-lia* ‘to eat’, on the other hand, both objects can appear as the subject of the passive, as shown in (4) for the former verb and in (6) for the latter.³

3 The stem of the verb *khu-lia* ‘to eat’ in (5) is modified for phonological reasons (see Marlo 2002).

(3) Wafula 0-a-nyw-esy-a Wekesa ka-ma-lwa.
    Wafula 1.SBJ-PST-drink-CAUS-FV Wekesa 6-6-beer
    ‘Wafula made Wekesa drink the beer.’

    Wekesa 1.SBJ-PST-drink-CAUS-PASS-FV 6-6-beer by Wafula.
    ‘Wekesa was made to drink the beer by Wafula.’

b. Ka-ma-lwa k-a-nyw-esy-ebw-a Wekesa ne
    6-6-beer 6.SBJ-PST-drink-CAUS-PASS-FV Wekesa by Wafula.
    Wafula
    ‘The beer was made to be drunk by Wekesa by Wafula.’

(5) Wafula 0-a-lis-isy-e o-mw-ana ku-mu-chele.
    Wafula 1.SBJ-PST-eat-CAUS-FV 1-1-child 3-3-rice
    ‘Wafula fed the child rice.’

    1-1-child 1.SBJ-PST-eat-CAUS-PASS-FV 3-3-rice
    ‘The child was fed rice.’

    3-3-rice 3.SBJ-PST-eat-CAUS-PASS-FV 1-1-child
    ‘The rice was fed to the child.’

The difference in symmetry between ingestive verbs and other transitive verbs is evidence that verb meaning plays a role in the argument realization facts of object symmetry—a fact not previously noted in the literature. The question that arises, then, is why this particular class of verbs behaves differently with respect to object symmetry. In what follows, I outline a preliminary account based around the lexical
semantics of ingestive verbs, which in many languages behave differently with respect to causativization.4

3 Ingestive Verbs Crosslinguistically

A number of unrelated languages treat ingestive verbs distinctly from other syntactically transitive verbs, such as Malayalam (Mohanam 1983:105–106), Berber (Guerssel 1986:36ff.), Tariana (Aikhenvald 2000), Jarawara (Dixon 2000), Cora (Vázquez Soto 2002), and Hindi (Masica 1976:46) (see also Nedjalkov and Silnitsky 1973, Shibatani 2002, and Shibatani and Pardeshi 2002). Consider an example from Amharic (Semitic; Ethiopia), which has two distinct causative morphemes: a- and as- (Amberber 2000, 2002). The causative a- is reserved for intransitives, as shown in (7), where the prefix cannot appear with the transitive verb k’warrat’a ‘cut’.

(7) a. k’om ‘stand (intr.)’ → a-k’om ‘stand (tr.)’
   b. k’warrat’a ‘cut’ → *a-k’warrat’a
   (Amharic; Amberber 2002:2, (2))

The prefix as-, on the other hand, appears with both transitives and intransitives.

(8) a. mat’t’a ‘come’ → as-mat’t’a ‘make x come’
   b. k’warrat’a ‘cut’ → as-k’warrat’a ‘make x cut y’
   (Amharic; Amberber 2002:2, (3))

Given that the verb bolla ‘eat’ is syntactically transitive, it is not expected to appear with the prefix a-, but in fact it can.

(9) aster lemma-n dabbo a-bolla-čč-ıw
   Aster Lemma-ACC bread CAUS-eat.PF-3F-3MO
   ‘Aster fed Lemma some bread.’
   (Amharic; Amberber 2002:3, (5))

This pattern is found with other predicates describing both literal and figurative ingestion, such as laso ‘lick’, t’əba ‘suck’, k’əmməso ‘taste’, lək’k’əma ‘pick up’, t’ərrasə ‘take a mouthful’, and gat’ə ‘graze’ (Amberber 2002:3). In sum, ingestive verbs pattern distinctly from other transitive verbs despite their syntactic transitivity.

4 Baker, Safir, and Sikuku (2012) show that when the causee is a local pronoun (i.e., first and second person), the result is asymmetry, despite symmetry elsewhere. All the objects discussed here are intentionally third person singular in order to control for person effects; thus, the only difference between (2) on the one hand and (4) and (6) on the other is the class of the verb. Because verb class is not held constant in Baker, Safir, and Sikuku 2012, it is difficult to say how the authors’ findings coincide with the current proposal. Ultimately, I posit that both the person of the object NPs as well as verb class should be considered in future work as potential factors in determining object symmetry in various languages.
To capture the divergent syntax of ingestive verbs, Krejci (2012) makes the case that ingestive verbs are semantically reflexive, drawing on both crosslinguistic and lexical semantic evidence. First, ingestive verbs in some languages, such as the Bolivian language Movima (Haude 2006), pattern with inherent reflexives in appearing with middle morphology. Further, Krejci shows that while the default in many languages is for inherent reflexive verbs (e.g., to wash) to be derived from causatives via reflexivization (such as Spanish lavarse ‘to wash’ (intr.) from lavar ‘to wash’ (tr.), in other languages inherent reflexives are the base form that causatives are derived from (such as the Hindi causative uth-aa ‘to raise’ from the intransitive uth ‘to rise’; Masica 1976:319). For these latter languages, causative morphology does not add a new periphrastic causative subevent to the verb; rather, it delinks the reflexive nature of the base verb. Krejci shows that crosslinguistically, ingestives often pattern with inherent reflexives in the directionality of marking with respect to causatives. Finally, Krejci looks at lexical entailments of ingestive verbs in English and Marathi and concludes that there is a bieventive, reflexive meaning in the event structure of ingestive verbs (see also Jackendoff 1990:53–55, 253, Amberber 2002). In other words, the single subject of eat is associated with various lexical entailments (e.g., the manipulation of food and the chewing of the food) that are split across two arguments in the predicate feed.

4 Toward an Analysis of Lubukusu Object Symmetry

I extend Krejci’s (2012) analysis of ingestive verbs to Lubukusu, as a starting point for understanding their distinct pattern with respect to object symmetry. Specifically, caused ingestives retain the ditransitive event structure of their corresponding noncausative verbs; these are distinct from the causatives of most verbs, where the causal morpheme is a productive operator that adds a new causal subevent to the event structure of the verb. I outline this account using a typed lambda calculus in which hierarchical relationships of the verb’s meaning are defined via lexical entailments of the verb (adopting the formal approach in Jerro 2017). I assume a domain of discourse $U$ that consists of two major sorts: the subsets $U_I$ of individuals and $U_E$ of eventualities. Variables in the set $U_I$ are $x$, $y$, and $z$. The variables $v$, $s$, and $e$ represent events. The event variable $e$ represents a complex event that is the summation of all subevents of the predicate, and each subevent is causally linked to the other subevents in $e$. Finally, subevents within $e$ are causally ordered with respect to one another as specified by the lexical entailments of the verb. These constraints are indicated by the relations init’ and fin’, which state that a particular named event must

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5 I treat all subevents as events; I do not deal directly with states here. I assume that the event variables are bound off at a later stage of the derivation.
be initial or final in the event $e$, respectively. Consider the denotation of *khu-lia* ‘to eat’ in (10), adapted from Krejci 2012:42, (37a).

\[
(10) \quad [khu-lia] := \lambda x \lambda y \lambda x' \lambda e [ag'(v, y) \land th'(v, x) \land ag'(s, y) \\
\land th'(s, x) \land s \subseteq e \land v \subseteq e \land manipulating.food(v) \land \\
fin'(s, e) \land \diamond digesting(s)]
\]

In (10), there are two subevents: a causing event $v$ of manipulating food and a caused change of state $s$ of prospective digestion. Crucially, the agent of the causing event (the manipulator of the food) and the agent of the change of state (the ingester) are the same individual—hence the reflexive nature of these verbs. The change of state $s$ must be final in the causal chain, as specified by $fin'(s, e)$. Consider the Lubukusu sentence in (11a) and its semantics in (11b).

(11) a. Wafula 0-a-li-le ku-mu-chele.
Wafula 1.SBJ-PST-eat-FV 3-3-rice
‘Wafula ate the rice.’

b. $\exists s \exists v \exists [ag'(v, wafula') \land th'(v, rice') \land ag'(s, wafula') \\
\land th'(s, rice') \land s \subseteq e \land v \subseteq e \land manipulating.food(v) \\
\land fin'(s, e) \land \diamond digesting(s)]$

This sentence means that Wafula acted to manipulate food and, as a result of this action, he (potentially) digests the rice.

The analysis of *khu-lia* ‘to eat’ as a bieventive, causative verb predicts that it should be possible to separate the causing event from the result state (unlike in the case of a noncausative, monoeventive verb such as *khu-chekha* ‘to laugh’, where such a division is not possible). A classic diagnostic for this is ambiguity under modification by ‘again’ and its crosslinguistic counterparts (Morgan 1969, McCawley 1973:342–343, Dowty 1979:250ff., Beck and Johnson 2004:106ff., Krejci 2012:61–71). A bieventive predicate should be ambiguous between two possible readings: a restitutive reading where ‘again’ has scope over just the result and a repetitive reading where ‘again’ has scope over the entire event.\(^6\)

\(^6\) The conclusions in this squib are drawn from two ingesive verbs in Lubukusu: *khu-lia* ‘to eat’ and *khu-nywa* ‘to drink’. Whether the observed pattern with symmetry arises with figurative ingesive verbs such as ‘learn’ and inherent reflexives such as ‘wash’ (intr.) is a question for future work.

\(^7\) The truth conditions of *khu-lia* ‘to eat’ in Lubukusu do not entail that the food be digested; this is indicated formally with the possibility modal operator $\diamond$. For example, the digestion described in (11a) is cancelable, as in a context where the food is eaten but subsequently thrown up.

\(^8\) Finding an appropriate pragmatic context for ingesive verbs is somewhat difficult because the edible object must be eaten twice, an event that does not happen in real-world contexts. The context in (12) is that the rice is cursed so that it is regenerated to appear in its original state. Krejci (2012) achieves a similar effect using a video game context where players eat coins that are regenerated.
The sentence in (12) has both readings. On the repetitive reading, *lundi* ‘again’ takes scope over the entire event (i.e., Wekesa performing the entire eating event again). Crucially, (12) also has the restitutive reading: Wekesa did not eat the rice the first time (e.g., Wekesa’s friend Wafula ate the rice, and then the rice regenerated to its original state), and then Wekesa ate it a second time. The ambiguity in scope over the subevents supports the analysis of *khu-lia* ‘to eat’ as having a bieventive, causal structure. By means of comparison, consider the monoeventive verb *khu-chekha* ‘to laugh’ in (13).

(13) *Wekesa ð-a-chekh-ele* lundi.

Wekesa 1. SBJ-PST-laugh-FV again

‘Wekesa laughed again.’

This sentence has only the repetitive reading: Wekesa laughed before and then laughed again.

Causation can be diagnosed with modifiers meaning ‘by oneself’—crucially, on the reading that the event occurred without external help (Siewierska 1984:78–79, Chierchia 2004:42–44, Koontz-Garboden 2009:106–110, Krejci 2012:87–90, Beavers and Zubair 2013: 15–16). The ability of *omwene* ‘by oneself’ to appear with *khu-lia* ‘to eat’ in (14) is further evidence of a bieventive analysis of the verb *khu-lia* ‘to eat’.

(14) *Wekesa ð-a-l-ile omwene.*

Wekesa 1. SBJ-PST-eat-FV by.himself

‘Wekesa ate by himself (i.e., Wekesa ate without external help).’

(15) #*Wekesa ð-a-chekh-ele omwene.*

Wekesa 1. SBJ-PST-laugh-FV by.himself

‘Wekesa laughed by himself.’

The infelicity of *omwene* ‘by oneself’ with the monoeventive verb *khu-chekha* ‘to laugh’ in (15) is evidence that the modifier indeed probes causation. From these diagnostics, I conclude that ingestive verbs in Lubukusu have a bieventive, causative semantics, as described by the denotation of *khu-lia* ‘to eat’ in (10).

Returning to caused ingrestives, let us consider the causative *khu-l-isy-a* ‘to feed’. Following Krejci’s (2012) analysis of antireflexiviza-
tion, there are crucially no subevents added to the event; instead, the causer and the ingester (which are the same individual for khu-lia ‘to eat’) are two distinct individuals in the causative in (16).\textsuperscript{10}

\[
(16) \ [khu\,lisya] := \{\lambda y \lambda x \lambda z \lambda s \lambda v \lambda e (ag'(v, z) \land th'(v, x) \land ag'(s, y) \land th'(s, x) \land s \subseteq e \land v \subseteq e \land manipulating\,food'(v) \land fin'(s, e) \land \Diamond digesting'(s))\}
\]

The event structure in (16) is the same as the one in (10), the crucial difference being that the agent of the event of manipulating food is not the same as the participant that prospectively digests it. Consider the reading of khu-l-isy-a ‘to feed’ in (17).

\begin{enumerate}
\item a. Wafula 0-a-lis-isy-e o-mw-ana ku-mu-chele.
  \[\text{Wafula 1.SBJ-PST-eat-CAUS-FV 1-1-child 3-3-rice}\]
  ‘Wafula fed the child rice.’
  #‘Wafula made the child eat rice.’
\item b. $\exists x \exists y \exists z [ag'(v, wafula') \land th'(v, rice') \land ag'(s, child') \land th'(s, rice') \land s \subseteq e \land v \subseteq e \land manipulating\,food'(v) \land fin'(s, e) \land \Diamond digesting'(s)]$
\end{enumerate}

In (17), the reading is that Wafula is feeding the rice to the child—for example, by taking the rice and putting it directly into the child’s mouth. Crucially, the agent of the manipulation of the food and the prospective digester are distinct. Note that the reading is not that of a periphrastic causative, that is, where someone caused the child to eat rice. Thus, the event structure of khu-l-isy-a ‘to feed’ has no additional causal subevent, as compared to the event structure of the base verb, and the nature of causation is the same as for the noncausative variant khu-lia ‘to eat’.

Turning to transitives like khu-funa ‘to break’, I assume a periphrastic causation analysis for these verbs where the causative adds a new causer subject (via an additional causal subevent) to the clause. Consider the meaning of the causative morpheme in (18), developed from an analysis of the cognate morpheme -ish in Kinyarwanda (Jerro 2017).\textsuperscript{11}

\begin{enumerate}
\item a. Wafu 0-a-lis-isy-e o-mw-ana ku-mu-chele.
  \[\text{Wafu 1.SBJ-PST-eat-CAUS-FV 1-1-child 3-3-rice}\]
  ‘Wafu fed the child rice.’
  #‘Wafu made the child eat rice.’
\item b. $\exists x \exists y \exists z [ag'(v, wafula') \land th'(v, rice') \land ag'(s, child') \land th'(s, rice') \land s \subseteq e \land v \subseteq e \land manipulating\,food'(v) \land fin'(s, e) \land \Diamond digesting'(s)]$
\end{enumerate}

\textsuperscript{10} There are several ways of capturing antireflexivization compositionally (antireflexivization being an operation that takes a reflexive verb as input and outputs the same event structure but with non-identified arguments). I assume, however, that in the case of ingestive verbs in Lubukusu, the causative and noncausative verbs are in a lexical paradigmatic relationship (see Cooper 1976 and Jerro 2013 for discussion of lexical causatives in Bantu), and so I leave a compositional analysis of antireflexivization aside here. Furthermore, I assume that the lexicalized form in (16) blocks application of the productive causative in (18); compare the blocking relation between the causatives sas and sase in Japanese (Miyagawa 1984) and the blocking of causative readings with particular verbs in Kinyarwanda (Jerro 2017).

\textsuperscript{11} The causal subevent introduced by the causative morpheme -esy in Lubukusu must be the initial subevent, indicated here with the relation init'.
(18) \[ [-esy] := \lambda P \lambda x_1 \ldots \lambda x_n \lambda z \lambda e_1 \ldots \lambda e_m [P(x_1 \ldots x_n, e_1 \ldots e_m) \land \exists e'[e' \subseteq e_m \land ag'(e', z) \land init'(e', e)]] \]

Here, the causative morpheme licenses a new causative subevent that precedes the subevents described by the verb. I assume the denotation in (19) for the verb *khu-funa* ’to break’, where there is an agent \(x\) that is linked to the causing event \(v\), which causes the result \(s\) of the object \(y\) being broken.

(19) \[ [khu-funa] := \lambda \lambda \lambda \lambda \lambda \lambda \lambda \lambda \lambda \lambda \lambda \lambda \lambda [ag'(v, y) \land th'(s, x) \land v \subseteq e \land s \subseteq e \land breaking'(v) \land broken'(s) \land fin'(s, e)] \]

Composing the meaning of the verb *khu-funa* ’to break’ and that of -esy gives (20).

(20) \[ \lambda \lambda \lambda \lambda \lambda \lambda \lambda \lambda \lambda \lambda \lambda \lambda \lambda \lambda \lambda \lambda \lambda [ag'(v, y) \land th'(s, x) \land v \subseteq e \land s \subseteq e \land breaking'(v) \land broken'(s) \land fin'(s, e) \land \exists e'[e' \subseteq e_m \land ag'(e', z) \land init'(e', e)]] \]

The denotation in (20) corresponds to a sentence like that in (21).

(21) Wafula a-kha-fun-isy-a bi-kombe o-mw-ana.

\begin{verbatim}
Wafula 1.SBJ-TNS-break-CAUS-FV 8-cup 1-1-child
\end{verbatim}
‘Wafula is causing the child to break the cups.’

Here, there is a causing event \(e'\) in \(e\) that precedes the subevents described by the verb *khu-funa* ’to break’, as is typical of periphrastic causatives. Thus, *khu-l-isy-a* ’to feed’ and *khu-fun-isy-a* ’to cause to break’ differ in the nature of causation: with the former, there is no additional causal subevent, and the ditransitive event structure is not derived; with the latter, however, a new causal subevent (and associated causer argument) is added to the event structure, deriving a ditransitive event structure. I propose that it is this difference in how the causative verbs arise that corresponds to the two classes’ distinct symmetry properties.

Because caused ingestive verbs have a nonderived ditransitive event structure, it is expected that other semantically ditransitive verbs should pattern similarly with respect to symmetry. This is borne out with the verb *khu-wa* ’to give’, which—parallel to caused ingestives—is symmetrical under passivization.\(^{12}\)

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\(^{12}\)The verbal root is deleted in the passive in (22) for phonological reasons.
‘The book was given to Wekesa by Wafula.’
‘Wekesa was given a book by Wafula.’

The symmetrical behavior of khu-wa ‘to give’ fits with the analysis of caused ingresses as ditransitive verbs, as these verbs pattern the same as a lexically ditransitive verb in the language.13

5 Conclusion

In this squib, I have presented evidence that in Lubukusu, causation with ingestive verbs is an operation of antireflexivization, which is distinct from the general causative operation in the language that adds a wholesale new causal subevent. I have proposed that this distinction in the semantics of causation provides a starting point for analyzing the difference with respect to object symmetry. More broadly, I have shown that object symmetry can vary according to verb class, an empirical fact that has not been considered in previous work on object symmetry. Furthermore, verb meaning has been shown to determine the thematic role and syntactic function of other valence-increasing morphemes such as locative applicatives in Kinyarwanda (Jerro 2016a) and to influence whether a full object or an object prefix will appear, as in the Bantu languages Kinyakyusa (Lusekelo 2012) and Kiluguru (Marten and Ramadhani 2001). Thus, the influence of verb meaning on argument realization is an important factor to consider in future work on valency-changing morphology.

Many questions remain—in particular, what determines the sizeable variation in object (a)symmetries across languages. However, what both this squib and other studies are bringing to light is that a comprehensive theory of object symmetry requires a mixture of several interrelated factors in addition to syntax, such as the noun cast of the objects (Morolong and Hyman 1972, Aranovich 2009, Baker, Safir, and Sikuku 2012), the thematic role of the applied object (Baker 1988, Bresnan and Moshi 1990, Alsina and Mchombo 1993, Ngonyani 1996, McGinnis 2001, McGinnis and Gerdts 2003, Jeong 2007), and—as I argue here—the meaning of the base verb. The interrelation of these different aspects of grammar opens up a rich domain of inquiry for future work.

13 To my knowledge, khu-wa ‘to give’ is the only lexical ditransitive in the language, as also noted by Baker, Safir, and Sikuku (2012:57n5). Should any other lexical ditransitive verbs be found, however, the expectation given the current analysis is that their objects would also be symmetrical.
References


Jerro, Kyle. 2016b. The syntax and semantics of applicative morphology in Bantu. Doctoral dissertation, University of Texas at Austin.


