

**CASE, ASPECT, AND ARGUMENT STRUCTURE:
ONE CONLANGER'S INVESTIGATIONS**

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1. Encoding 'Who's doing what to whom'

The languages of the world distinguish argument functions by means of *case marking*, *agreement*, *word order*, or (most frequently) some combination of the above. As is well known, languages tend to favour a *nominative-accusative* (or 'accusative') alignment (1), where intransitive subjects pattern with transitive subjects and transitive objects are distinctively marked; or an *ergative-absolutive* ('ergative') alignment (2), where intransitive subjects pattern with transitive objects and transitive subjects are distinctively marked.¹

- (1) a. Juan aywan *Quechua (S. America)*
Juan.NOM go.3s
"Juan goes"
- b. Juan Pedro-**ta** maqan
Juan.NOM Pedro-ACC hit.3s
"Juan hits Pedro"
- (2) a. Mujam gali□ digarra-mu *Yidiny (Australian)*
mother.ABS go beach-ABL
"(My) mother is going from the beach"
- b. Wagaal-**du** mujam wawal
wife-ERG mother.ABS look.at
"(My) wife is looking at (my) mother"

Many languages exhibit both ergative and accusative alignments in different contexts (*ergativity splits*), suggesting that ergativity/accusativity are best thought of as features of particular construction types, rather than entire languages. A common kind of ergativity split is based on tense or aspect: past/perfective constructions show an ergative alignment while non-past/imperfective constructions show an accusative alignment:

- (3) a. Student-**i** midis *Georgian (Caucasian)*
student-NOM/ABS goes
"The student goes"

¹ Abbreviations used in the examples: ABL = ablative, ACC = accusative, ALL = allative, AUX = auxiliary, DAT = dative, ERG = ergative, INESS = inessive, INTR = intransitive, LOC = locative, NOM = nominative, OBL = oblique, PART = partitive, PL = plural, TNS = tense marker, TR = transitiv(izer).

verbs denoting psychological states) to receive non-canonical subject marking. Consider the following examples from Guaymí, where canonical transitive subjects take ergative marking (in the past tense only; cf. the Georgian examples in (3) above):

- (6) a. Toma-**gwe** Dori dëmaini *Guaymí (Chibchan, Costa Rica/Panama)*
 Tom-ERG Doris greeted
 "Tom greeted Doris"
- b. Dori-**gwe** blitani
 Doris-ERG spoke
 "Doris spoke"
- c. Nu □atani
 dog died
 "The dog died"
- d. Toma-**e** Dori hatuaba
 Tom-DAT Doris saw
 "Tom saw Doris"
- e. Davi-**bötö** Dori hurö rïbaba
 David-LOC Doris fear felt
 "David was afraid of Doris"

A striking example of the effect of animacy on case marking comes from the Papuan language Dani: Here, transitive subjects and objects are prototypically unmarked; however, the subject takes a special 'ergative' marker just in case it is less animate than the direct object:

- (7) a. Ap palu nasikhe *Dani (Papuan, New Guinea)*
 man python 3s.ate.3s
 "The man ate the python"
- b. Ap palu-**nen** nasikhe
 man python-'ERG' 3s.ate.3s
 "The python ate the man"

Some languages (so-called *split-S languages*) divide intransitive predicates into two classes, based roughly on volitionality and eventiveness: subjects of volitional, eventive intransitives pattern with transitive subjects; while subjects of non-volitional, non-eventive intransitives pattern with transitive objects:

- (9) a. Baba-**k** me□aps skiri-s cxeni *Laz (Caucasian; Turkey)*
 father-ERG 3s.3s.3s.give child-DAT horse.ABS
 "The father gives his child a horse"
- b. Bere-**k** imgars
 child-ERG 3s.cry
 "The child cries"
- c. Bere oxori-s doskidu
 child.ABS house-DAT 3s.stay
 "The child stays in the house"

2.2. Aspect and telicity/punctuality

In some languages, case marking is determined in part by the type of event denoted by the clause, or the temporal/aspectual viewpoint from which that event is regarded. Relevant factors can include *eventivity*, *telicity*, *punctuality*, and *perfectivity*:

Stative	Predicate denotes a property or state-of-affairs
Eventive	Predicate denotes an activity or change of state
Telic	Event has an endpoint, and necessarily terminates once that endpoint has been reached
Atelic	Event does not have a (specified) endpoint, and can continue indefinitely
Punctual	Event is conceived of as instantaneous
Non-punctual	Event is conceived of as non-instantaneous: some amount of time must pass before the endpoint is reached
Perfective	Event is complete(d) (aspectual viewpoint follows the endpoint)
Imperfective	Event is on-going (aspectual viewpoint precedes the endpoint)

In Finnish, direct objects generally take the accusative or partitive case. One of the factors determining the choice of case include the aspect of the clause, with accusative case preferred in perfective clauses and partitive in imperfective clauses (other factors include the definiteness of the direct object, and whether the predicate is stative or eventive; cf. the Estonian examples in (18) below):

- (10) a. Liikemies kirjoitti kirje-n valiokunna-lle Finnish
 businessman wrote letter-ACC committee-ALL
 "The businessman *wrote* a letter to the committee"
- b. Liikemies kirjoitti kirjet-tä valiokunna-lle
 businessman wrote letter-PART committee-ALL
 "The businessman *was writing* a letter to the committee"

Compare also the following Samoan examples: In the first example, where the verb is formally intransitive and takes an absolutive subject, the clause denotes an atelic, non-punctual event. In the second example, where the verb is formally transitive and takes an ergative subject, the clause denotes telic, punctual event:

- (11) a. S□ manatu le tama i le teine Samoan (Polynesian)
 TNS think the boy OBL the girl
 "The boy thought about the girl"
- b. S□ manatu-a le teine e le tama
 TNS think-TR the girl ERG the girl
 "The boy remembered the girl"

2.3. Individuation/affectedness of the object

In many languages, special direct object marking (as distinct from subject marking) is reserved for situations where the object is highly *individuated*—that is, definite, specific/referential, and/or high in animacy. Turkish (12) and Hebrew (13) are nominative-accusative languages in

which only specific or definite direct objects take overt accusative marking (non-specific/indefinite objects are non-distinct from nominatives):

- (12) a. Ali hemen bir piyano kiralamak istiyor Turkish
 Ali immediately one piano to.rent wants
 "Ali wants to rent a piano immediately" [any piano will do]
- b. Ali bir piyano-yu hemen kiralamak istiyor
 Ali one piano-ACC immediately to.rent wants
 "Ali wants to rent a [specific] piano immediately"
- (13) a. David natan matana l↔-Rina Hebrew
 David gave present to-Rina
 "David gave a present to Rina"
- b. David natan et ha-matana l↔-Rina
 David gave ACC the-present to-Rina
 "David gave the present to Rina"

In Spanish (14), direct objects take special marking (the dative preposition *a*) when they are both specific/ referential and highly animate (human or human-like). Direct objects in Hindi likewise take dative marking if they are high in animacy and/or definiteness (15). In such languages, the more individuated the direct object of a monotransitive is, the more likely the language is to exhibit a *primary/secondary object-type* pattern (cf. (5) above).

- (14) a. Busco mi sombrero Spanish
 seek.1s my hat
 "I am looking for my hat"
- b. Busco a mi amigo
 seek.1s to my friend
 "I am looking for my friend"
- (15) a. Machuee-nee machlii pak□ii Hindi
 fisherman-ERG fish caught
 "The fisherman caught a fish"
- b. Machuee-nee machlii-koo pak□aa
 fisherman-ERG fish-DAT caught
 "The fisherman caught the fish"

Objects which are low in animacy/definiteness/referentiality tend not to receive special marking. In many languages they undergo incorporation, or otherwise form a tight unit with the verb, and show properties of non-arguments (e.g., failure to passivize, trigger agreement on the verb, etc.):

- (16) a. Tumg-e nant↔wat↔n kupre-n Chukchi
 (Siberia) friends-ERG set.TR net-ABS
 "The friends set the net"
- b. Tumg-↔t kopra-nt↔watg'at

friends-ABS net-set.INTR
 “The friends set nets”

Individuation of the object and aspect/telicity may come together in the notion of *affectedness*: Canonical or discrete case marking for transitive objects is preferred in cases where the event is carried out to completion, and the object is completely affected. Object individuation interacts with telicity in English, for example:

- (17) a. Daniel ate the apple. [telic – event has an identifiable endpoint]
 b. Daniel ate apples. [atelic – event is open-ended]

Consider Estonian, where direct objects typically take either the genitive/accusative case or the partitive case. The partitive case is used in the following situations: [i] The direct object is indefinite/non-specific:

- (18) a. Me peame kohe bensin-i võtma Estonian
 we AUX right.away petrol-PART take
 “We’ll have to get some petrol right away”

[ii] The event is on-going/imperfective, and hence the direct object is not completely affected by the action:

- b. Mu sõber pakkis oma asj-u
 my friend packed his thing-PART.PL
 “My friend was packing his things”

[iii] The predicate is non-agentive or stative, and denotes an event where the direct object is unaffected (does not undergo any change of state):

- c. Ma nägin oma sõpr-a kohviku-s
 I saw my friend-PART coffeehouse-INESS
 “I saw my friend in the coffeehouse”
 d. Ma armastan park-i väga
 I like park-PART much
 “I like the park very much”

[iv] Finally, partitive case is dispreferred when the event has an endpoint, and that endpoint has been successfully reached. Note the following pair: Adding the directional particle *ära* to the clause renders the predicate telic and punctual (it denotes a change of state rather than a state/property), in which case the direct object appears in the accusative/genitive rather than the partitive, even though it need not be understood as affected by the action.

- e. Ta tundis seda nais-t
 he knew this.PART woman-PART
 “He knew this woman”
 f. Ta tundis selle nais-e ära
 he knew this.ACC/GEN woman-ACC/GEN away
 “He recognized this woman”

3. Conlang applications: A Tokana case study

Tokana is a conlang I have been working on for the last 15 years or so. Over that time it has gradually evolved into free word order language (unmarked order SOV) where the syntactic functions of core arguments are encoded by a combination of case marking on noun phrases, and agreement on verbs (person/animacy agreement prefixes or proclitics + plural number agreement suffixes). Early on I settled on three core case roles, *absolutive*, *ergative*, and *dative*. Ergative and dative are marked by endings on the noun phrase (the dative morpheme infixes before a stem-final consonant under most circumstances), and each of the three cases triggers a separate set of agreement markers:

- (18) a. Sakiala moihai halma inunioktie
 Sakial-a moiha-i halma in-un-i-uktie
 Sakial-ERG girl-DAT book.ABS 3ERG-3DAT-3ABS-gave
 "Sakial gave the book to the girl"
- b. Sakiala totsat epaim kopo inueteune
 Sakial-a totsat e-pam-i kopo in-u-e-teune
 Sakial-ERG table 3ABS-top-DAT pot.ABS 3ERG-3DAT-3ABS-put
 "Sakial put the pot on the table"

Originally the case system worked much like in a 'normal' ergative language, with ergative case used for transitive subjects, absolutive case for intransitive subjects and transitive objects, and dative case for recipients/goals. But then, in considering the relationship between case marking and aspect, definiteness, volitionality, etc., I began to work the idea of a case system based not on transitivity, but on the logic of event structure. What would such a language look like if taken 'to extremes'? How naturalistic would it be?

Taking ditransitive sentences like those in (18) as my model, I noted that in such sentences a THEME (marked absolutive) is transmitted from a SOURCE (marked ergative) to a GOAL (marked dative), where the event is initiated by the source. Generalizing this under the inspiration of languages like those discussed above, I hit upon the following schema for mapping case roles onto event participants:

Ergative	Denotes a (usually volitional) participant which is the source of an action or change of state
Dative	Denotes the goal or endpoint of a telic event
Absolutive	The 'elsewhere case': Denotes a participant which occupies (or come to occupy) a location, which is transmitted from a source to a goal, or mediates in some way between a source and a goal

The experiment was then to see how far I could extend this schema without creating a system that seemed incoherent to me. How would these 'rules' dictate the assignment of cases to core arguments?

3.1. Extension to monotransitives: Affectedness of the object

If absolutive, ergative, and dative case are assigned based on event structure rather than number of core arguments, then in principle the two arguments of a monotransitive verb might bear any combination of these three cases.

In ditransitives, dative case marks the endpoint of a motion event. Generalizing this to endpoints of *non*-motion events, it follows that the patient argument in a telic change-of-state event should get dative case—in other words, the marking used to express *arrival at a location* is extended metaphorically to cover *entry into a state*. In (19), the direct object is marked with

dative case since the event necessarily ends once the patient has been completely affected by the action:

- (19) a. Ounà kahoi inuniase
 ouna-a kahu-i in-un-iase
 bear-ERG fish-DAT 3ERG-3DAT-ate
 "The bear ate the fish"
- b. Mikala kopoi inutsitspe
 mikal-a kopo-i in-u-tsitsp-e
 boy-ERG pot-DAT 3ERG-3DAT-smash-PR
 "The boy smashed the pot"

It follows that if an event lacks an endpoint, its object cannot bear dative case. In the examples in (20), the event is atelic (open-ended), and therefore the object takes absolutive case:

- (20) a. Ihà kopo inikyppyi
 iha-a kopo in-i-kyppyi
 woman-ERG pot.ABS 3ERG-3ABS-is.carrying
 "The woman is carrying the pot"
- b. Sakiala lihpa innetsule
 Sakial-a lihpa in-ne-tsule
 Sakial-ERG sister.ABS 3ERG-3ABS-visited
 "Sakial visited (his) sister"

Since telicity is a property of entire *predicates* rather than *verbs*, it also follows that a given verb might take either a dative or an absolutive object, depending on telicity. This is illustrated below, where (21a)/(22a) denote a telic event and (21b)/(22b) an atelic event:

- (21) a. Ounà kahoi inuniase
 ouna-a kahu-i in-un-iase
 bear-ERG fish-DAT 3ERG-3DAT-ate
 "The bear ate the fish"
- b. Ounà kahu iniase
 ouna-a kahu in-iase
 bear-ERG fish.ABS 3ERG-ate
 "The bear ate fish"
- (22) a. Hauata moil iokiospe
 hauat-a mul-i i-u-kiospe
 fire-ERG cloth-DAT 3ERG-3DAT-burned
 "The fire burned up the cloth"
- b. Hauata mul iekiospe
 hauat-a mul i-i-kiospe
 fire-ERG cloth.ABS 3ERG-3ABS-burned
 "The fire burned [i.e., singed] the cloth"

3.2. Extension to monotransitives: Volitionality of the subject

Turning to the ergative: If ergative case marks a participant who initiates an event, then ergative subjects will be limited to eventive verbs. Stative predicates in Tokana therefore take subjects in

some other case. Those denoting psychological states general take one of the four oblique cases (allative, ablative, locative, instrumental):

- (23) a. Sakiale Elim nkuaita
 Sakial-e Elim n-huaita
 Sakial-ALL Elim.ABS 3ABS-like
 "Sakial likes me"

Consider also the following examples: Verbs of spontaneous and/or self-directed motion – whether literal motion (24a) or figurative motion (24b) – take a dative argument and an absolutive argument, but no ergative argument:

- (24) a. Ihamit sihkunoi uenesten
 iha-mit sihkunu-i ue-n-este-n
 woman-PL.ABS river-DAT 3DAT-3ABS-reached-PL
 "The women reached the river"
- b. Lyihpiyle sileip nemilhte
 lyihpiyle silip-i ne-milhte
 caterpillar.ABS butterfly-DAT 3aABS-turned
 "The caterpillar turned into a butterfly"

This pattern is also extended to punctual events where an individual receives or encounters an object, sensation, or idea, usually without any premeditation. Here the individual receiving the object/sensation/idea is identified as the endpoint of the event, and hence gets dative case:

- (25) a. Sakiail halma unitlelhe
 Sakial-i halma un-i-tlelhe
 Sakial-DAT book.ABS 3DAT-3ABS-found
 "Sakial found the book"
- b. Kaloin lhonko unole
 kalon-i lhonko un-ole
 boy-DAT loud.noise.ABS 3DAT-heard
 "The boy heard a loud noise"
- c. Moihai tlok tsanie unmoite
 moiha-i tlok tsanie un-moite
 girl-DAT shoe pair.ABS 3DAT-received
 "The girl got a pair of shoes"

3.3. Extension to intransitives

Case assignment based on event structure yields a system with three classes of intransitives: Intransitive verbs denoting a volitional activity assign ergative case to their subjects (26c). Intransitive verbs denoting a telic/punctual change of state, where the locus of the change of state is the subject, assign dative case (26b). Intransitive predicates denoting position or location take absolutive subjects (26a):

- (26) a. Pyi nueihta
 pyi n-ueihta
 child.ABS 3ABS-sit
 "The child is sitting down"

- b. Pyie untioke
 pyi-i un-tioke
 child-DAT 3DAT-died
 “The child died”
- c. Pyia inkakatle
 pyi-a in-hakatle
 child-ERG 3ERG-laughed
 “The child died”

In explaining the use of dative case to mark both goals and patients, I noted that this involves a metaphorical extension whereby *arrival at a location* is equated with *entry into a state*. Applying this same extension to the absolutive case, which marks arguments that *occupy a location* (26a), it follows that absolutive case will also be used with non-eventive verbs for arguments which *occupy a state of being*, or possess a particular property:

- (27) Pyi mpiha
 pyi n-fiha
 child.ABS 3ABS-be.young
 “The child is young”

Note also the following pair: The stative verb *ksohna* “be dark” takes an absolutive subject (26a). Adding the inchoative suffix *-al* converts it into a telic change-of-state verb *ksohnala* “become dark”. This verb patterns with the underived change-of-state verb *tioka* “die” in taking a dative subject (28b):

- (28) a. Halu eksohnanka
 halu e-ksohnanka
 room.ABS 3ABS-was.dark
 “The room was dark”
- b. Haloi ueksohnale
 halu-i ue-ksohn-ale
 room-DAT 3DAT-dark-became
 “The room got dark”

3.4. Further consequences: Additional uses of the absolutive and dative

Consider the following:

- (29) a. The boy pushed the stone.
 b. The boy pushed the stone into the ditch.

(29a) is atelic, while the addition of the prepositional phrase in (29b) renders the predicate telic by adding an explicit endpoint—the event of pushing a stone can go on indefinitely, but the event of pushing a stone into a ditch necessarily ends once the stone is in the ditch. If dative case is associated with endpoints, it follows that in the Tokana equivalent of (29b), *into the ditch* will be expressed using a phrase in the dative:

- (30) a. Mikala naka initlynke
 mikal-a naka in-i-tlynke
 boy-ERG stone.ABS 3ERG-3ABS-pushed
 "The boy pushed the stone"
- b. Mikala naka lahei inuetlynke
 mikal-a naka lahi-i in-u-e-tlynke
 boy-ERG stone.ABS ditch-DAT 3ERG-3DAT-3ABS-pushed
 "The boy pushed the stone into the ditch"

Likewise, compare the following:

- (31) a. The boy pushed the stone.
 b. The boy pushed the stone seven feet.
 c. The boy pushed the stone for two hours.
 d. The boy pushed the stone until he got tired.

(31a) is again atelic, but (31b-d) are arguably telic. Here, though, the sentence does not include a goal phrase, but rather a phrase which indicates a spatio-temporal limit: The event of pushing the stone ends as soon as it reaches the point denoted by "seven feet", "two hours", or "he got tired". Inasmuch as measure phrases function to *delimit* (provide an endpoint for) an otherwise atelic event, I decided that, by the logic of the system, measure phrases must appear in the dative case in Tokana:

- (32) a. Mikala naka katlam ehte initlynke
 mikal-a naka katlam ehte-i in-i-tlynke
 boy-ERG stone.ABS cubit three-DAT 3ERG-3ABS-pushed
 "The boy pushed the stone three cubits"
- b. Mikala naka luom hein initlynke
 mikal-a naka luom hen-i in-i-tlynke
 boy-ERG stone.ABS hour two-DAT 3ERG-3ABS-pushed
 "The boy pushed the stone for two hours"
- c. Mikala naka initlynke haktalai
 mikal-a naka in-i-tlynke hakt-ala-a-i
 boy-ERG stone.ABS 3ERG-3ABS-pushed tired-become-ing-DAT
 "The boy pushed the stone until he got tired"

Metaphorically, the boy is transmitting the stone to an abstract endpoint, whose relationship to the starting point is defined by the measure *katlam ehte* "three cubits", *luom hen* "two hours", *haktalà* "(his) getting tired". I know of no language which expresses measure phrases consistently in this way, but the results strike me as entirely naturalistic, and I would therefore predict this feature to occur in some natural language. This seems to me to be a nice example of how playing around with conlangs can inform one's linguistic research...

My case marking schema similarly suggests various extensions of the absolutive: If transitive verbs denoting telic events assign dative case to their objects, this 'frees up' the absolutive case to express other semantic roles. The 'basic' function of absolutive case is to mark entities which undergo movement from a source to a goal. Given the logic of the system, whereby spatial relations are metaphorically extended to other kinds of relations, there are a number of roles that an extra absolutive argument could play:

The absolutive argument could be thought of as ‘mediating between’, or ‘bridging’, a source and a goal. Hence, in cases where the source is an agent initiating a change of state, and the goal is a patient undergoing a change of state, absolutive case could be used to mark the *instrument* manipulated by the agent to bring about the change of state:

- (33) a. Ihà kahoi tiku inuntahe
 iha-a kahu-i tiku in-un-tahe
 woman-ERG fish-DAT harpoon.ABS 3ERG-3DAT-kill
 “The woman killed the fish with a harpoon”
 or “The woman harpooned the fish”
- b. Elima totsait mul inupatle
 Elim-a totsat-i mul in-u-patl-e
 Elim-ERG table-DAT cloth.ABS 3ERG-3DAT-covered
 “Elim covered the table with a cloth”

Likewise, with verbs of creation or transformation, the absolutive argument could express the material being transformed, while the dative argument represents the object/substance being created or transformed (e.g., in the first example below, the woman metaphorically transmits the clay into the form of a pot):

- (34) a. Ihà kopoi sute inuoste
 iha-a kopo-i sute in-uoste
 woman-ERG pot-DAT clay.ABS 3ERG-shaped
 “The woman shaped a pot out of clay” or “The woman shaped clay into a pot”
- b. Kotoi lotsan inutiespanka
 kotu-i lotsan in-u-tiespanka
 house-DAT wood.ABS 3ERG-3DAT-built
 “He built (his) house out of wood”
- c. Motlà tsimok sofoi initlule
 Motla-a tsimok sofo-i in-i-tlule
 Motla-ERG corn.ABS flour-DAT 3ERG-3ABS-pounded
 “Motla pounded/ground the corn into flour”

Finally, consider examples like the following:

- (35) a. He built the house.
 b. He built the house in four months.

In (35b), as in (31b-d), a measure phrase has been added. However, here the measure phrase does not convert an atelic predicate into a telic one, since the predicate *build the house* is already telic. Rather than identifying the endpoint, the measure phrase in (35b) indicates the span of time that separates the endpoint from the point at which the event began. Inasmuch as the measure phrase can be thought to trace the distance from the source of the building event to its goal/result, I chose to express the Tokana equivalent using the absolutive:

- (36) Kotoi ilme kè inutiespanka
 kotu-i ilme kè in-u-tiespanka
 house-DAT month four.ABS 3ERG-3DAT-built
 “He built the house in four months”
 or “It took him four months to build the house”

As with the dative measure phrase construction in (32), I don't know of any natural language that works quite this way. But I think that the construction in (36) follows as a reasonable extension of my core definition of absolutive case in Tokana. It would be interesting to see if there are any natural languages which express measure phrases of this type in (the equivalent of) absolutive case...

4. Conclusion

The primary function of core case/agreement systems is to discriminate the arguments of multi-argument verbs—i.e., to express 'who's doing what to whom'. However, in many if not most languages, case/agreement systems also show sensitivity to grammatical features of the arguments they mark (definiteness, specificity, referentiality, animacy, volitionality) as well as features of the predicate (eventivity, telicity, punctuality) or the clause as a whole (tense, aspect). Case/agreement systems thus reflect not merely the number of arguments in the clause, but how the event denoted by the clause is conceived.

Inspired by phenomena in a number of natural languages, I have used my conlang Tokana as a laboratory for exploring the relationship between case/agreement and event structure. I have attempted to incorporate and extend event-sensitive case marking as far as it will go, to see what would happen. The results are sufficiently bizarre to satisfy my taste for the exotic, while still (I think) retaining the feel of a natural human language.

Interestingly, my attempts to make my system as coherent and consistent as possible have led me to posit various patterns and syncretisms which don't exist in any natural languages that I know of, but which *should* exist in *some* language if my theories about case and event structure are on the right track. This illustrates one of the ways in which experimenting with conlangs can inform one's understanding and exploration of 'real' language phenomena.