

# Thematic Roles and Argument/Oblique Alternations

## Dissertation Proposal Talk

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## 1 Introduction

- My goal in this dissertation is to explore the semantic basis of argument realization:

- (1) For a verb describing an event with various participants, what are the semantic factors that determine how each participant is realized morphosyntactically?

**Q:** What kinds of meanings are relevant, and what semantic notions are relevant?

**Q:** What grammatical categories map onto what semantic notions?

- I look at argument/oblique alternations, which exhibit interesting semantic properties:

- (2) **Locative Alternation (DO ↔ OBL):**

- a. John loaded the hay onto the wagon. (hay all moved, wagon filled)
- b. John loaded the wagon with the hay. (wagon all filled, hay moved)
- c. John sprayed the paint onto the wall. (paint all moved, wall covered)
- d. John sprayed the wall with the paint. (wall all covered, paint moved)

- (3) **Dative Alternation (FO ↔ OBL):**

- a. John mailed Mary the letter. (Mary is a possessor)
- b. John mailed the letter to Mary. (Mary is a goal)

- (4) **Reciprocal Alternation (SU ↔ OBL):**

- a. The truck and the car collided. (car and truck in motion)
- b. The truck collided with the car. (truck in motion)

- One participant is a direct argument in one variant and an oblique in another. I focus on such distinctions as indicated by case (regardless of grammatical function).
- These alternations also exhibit semantic contrasts.
- Is there anything unified in these contrasts that tells us (a) what direct arguments vs. obliques do and (b) something about the semantics of argument realization in general?

- (5) **Alignment of Specificity to Realization (ASR):**

Direct argument variants in argument/oblique alternations entail more properties about the role of the alternating participant than oblique variants.

- Underspecificity (not entailing nor contradicting) is a relevant semantic notion.
  - Oblique is a grammatical category with a unified semantic function:
    - \* Oblique markers carry inherent semantics (old news).
    - \* Obliques are underspecified for verbally-assigned semantics (new news).
  - Whatever the semantics is, it has to cash out in verb-specific lexical entailments.
- These are factors any theory of argument realization must capture.
  - I propose an analysis of alternations based on proto-roles (Dowty 1989, 1991), which I argue gives us the fine-grained semantics necessary to capture these generalizations.

## 2 Background - Three Theories of Argument Realization

### 2.1 Thematic Roles

- The earliest theories of alternations involved labeling participants with thematic role labels and positing rules linking labels to realization (Fillmore 1968).
- Locative alternations involve three thematic roles (Agentive, Objective[=Locatum], Locative); independent rules allow either Objective or Locative to be DO.
- Thematic roles ran into trouble (Anderson 1971, 1977, Fillmore 1977, Dowty 1989):
  - Failed to provide a coherent, testable semantics for each role.
  - Problematic for alternations where realization affects interpretation.

### 2.2 Predicate Decompositions

- Predicate decompositions are a way to systematize the contrasts (Jackendoff 1976, 1990, Levin and Rappaport (Hovav) 1988, 1998, Gropen et al. 1989, Wunderlich 1997).

(6) a. John loaded hay onto the wagon. (change-of-location)  
        $[x \text{ cause } [y \text{ to come to be at } z]/\text{LOAD}]$

b. John loaded the wagon with hay. (change-of-state)  
        $[[x \text{ cause } [z \text{ to come to be in STATE}]]$   
       BY MEANS OF  $[x \text{ cause } [y \text{ to come to be at } z]/\text{LOAD}]$

(7) When the LCS of a verb includes one of the substructures in [(8)], link the variable represented by  $x$  in either substructure to the direct argument variable [the direct object - JTB] in the verb's [Predicate Argument Structure].

(8) a. ... $[x \text{ come to be at LOCATION}]$ ...

b. ... $[x \text{ come to be in STATE}]$ ...

(cf. Levin and Rappaport 1988, (24), (21)-(22), p.25-26)

- Lexical-Conceptual Structures (LCSs) contain a small number of basic predicates (CAUSE, BECOME, HAVE, etc.) and a root (Levin and Rappaport Hovav 1998).
- Realization partly determined by *structure* of semantic representation.

- Suffers from some drawbacks (Koenig and Davis 2004):
  - Assumes structure to semantics but rarely semantically motivated.
  - Connection of root/basic predicate semantics unclear.
  - May not capture generalizations I purport above to hold (more below).

### 2.3 Proto-Roles

- Proto-roles attacked the problem of thematic roles in another way (Dowty 1991; see also Ladusaw and Dowty 1988, Dowty 1989, Primus 1999, Ackerman and Moore 2001).
- In Dowty (1991), thematic roles are sets of verb-specific “lexical entailments” which define explicitly the participant’s role in the event.
- A thematic role may be more or less like one of the following prototypes:

- (9) Dowty’s proto-agent and proto-patient (cf. Dowty 1991, (27),(28)):
- |   |   |
|---|---|
| (a) Agent Proto-Role:   | (b) Patient Proto-Role:                                       |
| i. volitional involvement in the event or state                 | i. undergoes change of state                                  |
| ii. sentience (and/or perception)                               | ii. incremental theme   |
| iii. causing an event or change of state in another participant | iii. causally affected by another participant                 |
| iv. movement (relative to the position of another participant)  | iv. stationary relative to movement of another participant    |
| (v. exists independently of the event named by the verb)        | (v. does not exist independently of the event, or not at all) |

- (10)  $\text{Subj}_V = V$ ’s most proto-agent role  
 $\text{DO}_V = V$ ’s most proto-patient role (cf. Dowty 1991, (31))

- (11) a. John built the house. (John is proto-agent, the house is proto-patient)  
 b. i. John loaded the hay onto the wagon. (hay is incremental theme)  
 ii. John loaded the wagon with the hay. (wagon is incremental theme)

- Suffers from some drawbacks:
  - No worked out theory of oblique marking (except Ackerman and Moore 2001).
  - Counting method questionable since some properties outrank others (Davis 2001).
- However, entailment-based theory is a crucial first step to understanding alternations.
- A lot left out: Construction Grammar (Goldberg 1995), Lexical Mapping Theory (Bresnan and Kanerva 1989, Alsina 1992), Role and Reference Grammar (Van Valin and LaPolla 1997), HPSG (Wechsler 1995, Davis and Koenig 2000, Davis 2001), the UTAH (Baker 1988), cognitive grammar/force-dynamics (Langacker 1990, Croft 1991). But these share properties with the three approaches above.

- I motivate my main empirical claims in the next sections. I focus purely on the roles that participants play in the event, ignoring:
  - Referent properties (animacy; Schachter 1977, Evans 1997)
  - Discourse properties (topicality; Givón 1984)
  - Grammatical properties of argument expressions (heaviness; Wasow 2002)
- I ignore argument/argument alternations (causative/inchoative, voice) and non-semantic alternation (*John blamed his problems on Mary/blamed Mary for his problems*).

### 3 Direct Object Alternations - Affectedness

#### 3.1 Locative Preposition Drop Alternation

- Consider the following alternation (Levin 1993; see also Goldberg 1995):

- (12) a. John walked the Barton Springs Trail. (traversed entire trail)  
 b. John walked up the Barton Springs Trail. (not necessarily entire trail)
- (13) a. John walked up the Barton Springs Trail, arriving at the end by noon.  
 b. John walked up the Barton Springs Trail, but failed to make it to the end.  
 c.#John walked the Barton Springs Trail, but only went down a quarter-way.

- Similar data for Hebrew and Japanese (albeit with a goal-marker):

- (14) a. *aliti et (kol) ha-madregot*  
 go.up-pst.1.sg ACC (all) the-stairs  
 ‘I climbed the stairs.’
- b. *aliti ba-madregot*  
 go.up-pst.1.sg in.def-stairs  
 ‘I climbed up the stairs.’ (Hebrew; Itamar Francez, p.c.)
- (15) a. (*\*Helicopter-de*) *yama-o nobotta*  
 (Helicopter-with) mountain-ACC climb.PAST  
 ‘I climbed the mountain.’
- b. (*Helicopter-de*) *yama-ni nobotta*  
 (Helicopter-with) mountain-DAT climb.PAST  
 ‘I climbed (to the top of) the mountain (by helicopter).’ (Japanese)  
 (cf. Kuno 1973, (11), p.98)

- There is a distinction like the following for traversal verbs:

- (16) 

<b>Direct Object</b>	<b>Directional Oblique</b>
<i>x</i> is completely walked/climbed/etc.	<i>x</i> is walked/climbed/etc.

### 3.2 Search Alternation

- This alternation is similar to the preposition drop one above (Levin 1993, p.70):

- (17) a. Ida searched the woods for the fox. (woods totally searched)  
b. Ida searched in the woods for the fox. (not necessarily totally searched)
- (18) a. Ida searched in the woods, but only explored half of it.  
b. Ida searched in the woods, examining every inch.  
c.#Ida searched the woods, but only explored half of it.
- (19) Direct Object                      Locational Oblique  
*x* is completely searched    *x* is searched

### 3.3 Conative Alternation

- Consider (Levin 1993, van der Leek 1996, Broccias 2003):

- (20) a. John ate the sandwich. (sandwich necessarily totally affected)  
b. John ate at the sandwich. (sandwich not necessarily totally affected)
- (21) a. John ate at the sandwich but was so upset he barely ate any at all.  
b. John ate at the sandwich for over two hours before he'd finally finished it.  
c.#John ate his sandwich, but was so upset he barely ate any at all.
- (22) a. John wrote his dissertation. (dissertation comes to completely exist)  
b. John wrote on his dissertation. (dissertation may not fully exist)
- (23) a. John wrote on his dissertation, but never finished it.  
b. John wrote on his dissertation, finishing just in time to graduate.  
c.#John wrote his dissertation, but never finished it.

- Similar data attested in German (Frense and Bennett 1996), Danish (Durst-Andersen and Herslund 1996), Walpiri (Laughren 1988); absent from Berber and Winnebago (Guerssel et al. 1985).
- Guerssel et al. (1985) and Laughren (1988) argue that the necessary conditions are *contact* and *affectedness* (more on this below).
- Antipassives sometimes exhibit a similar semantic contrast (e.g. Mittimatalik, Spreng 2001; Polynesian, Chung 1978).
- Thus we see the following contrast for dynamic verbs:

- (24) Direct Object                                      Conative Oblique  
*x* is completely eaten/written/etc.    *x* is eaten/written/etc.

### 3.4 The Locative Alternation

- This alternation involves two participants (Fillmore 1968, Anderson 1971, Levin and Rappaport 1988, Pinker 1989, Gropen et al. 1989, Dowty 1991, Jackendoff 1996):

- (25) a. John loaded the hay onto the wagon. (hay all moved, wagon filled)  
 b. John loaded the wagon with the hay. (wagon all filled, hay moved)

- The direct object in both cases is completely moved or completely changed (when one controls for bare mass/plural NPs; more below):

- (26) a. i. John loaded the hay onto the wagon, and extra room for the grain.  
 ii. John loaded the hay onto the wagon, filling it up completely.  
 iii.#John loaded the hay onto the wagon, but needed a truck for the rest.  
 b. i. John loaded the wagon with the hay, but needed a truck for the rest.  
 ii. John loaded the wagon with the hay, leaving none behind.  
 iii.#John loaded the wagon with the hay, and had plenty of extra room.

- Must be careful to control for quantitative indeterminacy (bare plural and mass nouns), which can have an effect on affectedness:

- (27) a. John loaded the hay onto the wagon. (hay all moved)  
 b. John loaded hay onto the wagon. (not necessarily all hay moved)

- But this alternation does not indicate differences in quantitative determinacy.
- Comes in numerous varieties:

- (28) a. John sprayed/showered/drizzled the paint onto the wall.  
 b. John sprayed/showered/drizzled the wall with the paint.

- (29) a. John smeared/caked the mud onto the wall.  
 b. John smeared/caked the wall with the mud.

- For *spray* verbs (liquid locatum), “holistic” effect is less clear (Levin 1993, p.118-119).
- Attested in other languages (verbs vary slightly) — Hungarian (Ackerman 1992), Italian (Farrell 1994), Spanish (Mateu 2000), French (Tremblay 1991), German (Brinkmann 1997), Dutch (Laffut 1998), Danish (Herslund 1995), Japanese (Kageyama 1980), yielding the following general picture (modulo aforementioned speaker-to-speaker variation):

(30)	Direct Object	Oblique
LOCATUM	$x$ is completely moved	$x$ is moved
LOCATION	$x$ is completely loaded/etc.	$x$ is loaded/etc.

### 3.5 More on the Conative and Locative Alternations

- The conative also contrasts simple affectedness with underspecified for affectedness:

- (31) a. John slashed the curtain. (curtain necessarily slashed)  
 b. John slashed at the curtain. (curtain not necessarily slashed)
- (32) a. John angrily slashed at the curtain with his sword, slicing it clean in two.  
 b. John drunkenly slashed at the curtain, but managed to miss it entirely.  
 c.#John slashed the curtain, but managed to miss it entirely.

- The *against*-alternation likewise (Fillmore 1970, 1977):

- (33) a. John broke the stick against the fence. (stick breaks, not sure about fence)  
 b. John broke the fence with the stick. (fence breaks, not sure about stick)

- Variations on (33) are similar to the locative alternation:

- (34) a. John broke the stick on the fence. (stick breaks, not sure about fence)  
 b. John broke the fence with the stick. (fence breaks, not sure about stick)
- (35) a. John cut his foot on the rock. (foot cut, not sure about rock)  
 b. John cut the rock with his foot. (rock cut, not sure about foot)
- (36) a. John tore the mainsail on the jib. (mainsail torn, not sure about jib)  
 b. John tore the jib with the mainsail. (jib torn, not sure about mainsail)

- They share these semantic properties:

- (37) a. LOCATUM is causally intermediate in force-dynamic chain (Croft 1991):
- |              |   |     |   |       |  |               |   |       |   |       |
|--------------|---|-----|---|-------|--|---------------|---|-------|---|-------|
| x            | → | y   | → | z     |  | x             | → | y     | → | z     |
| ***load***** |   |     |   |       |  | ***break***** |   |       |   |       |
| John         |   | hay |   | wagon |  | John          |   | stick |   | fence |
- b. LOCATION is a static location

(38)

	<i>load/etc.</i>	<i>break/etc.</i>
LOCATUM	causally intermediate comes to rest at LOCATION	causally intermediate
LOCATION	static location contains/holds LOCATUM	static location

- Locative alternation is goal-oriented, *against*-type alternations are not. Semantic changes exhibited by conative and *against*-alternations:

(39)

	Direct Object	Oblique
PATIENT	<i>x</i> is slashed/etc.	nothing known of <i>x</i>
LOCATUM	<i>x</i> is broken/cut/etc.	nothing known of <i>x</i>
LOCATION	<i>x</i> is broken/cut/etc.	nothing known of <i>x</i>

### 3.6 Summary

- From the above we see the following general correspondences of entailments:

(40)

V-Specific	More General	Most General
<i>slash at x</i>	nothing known of <i>x</i> 's affectedness	<i>x</i> is a PARTICIPANT
<i>load NP with x</i>	<i>x</i> ends up somewhere $\neq$ source location	<i>x</i> is AFFECTED "x is changed"
<i>break x</i>	some property of <i>x</i> changes	
<i>walk up x</i>	<i>x</i> is traversed/searched	
<i>write on x</i>	<i>x</i> comes into existence	
<i>load x onto NP</i>	all of <i>x</i> is all moved	<i>x</i> is HOLISTICALLY AFFECTED "all of x is all changed"
<i>load x with NP</i>	all of <i>x</i> is all changed	
<i>walk x</i>	all of <i>x</i> is all traversed/searched	
<i>write x</i>	all of <i>x</i> all comes into existence	

- Two kinds of DO alternations, conforming to ASR:

(41)

General Contrast	:	HOLISTICALLY AFFECTED		AFFECTED		PARTICIPANT
Conative w/ <i>eat</i>	:	DO	→	OBL		
Conative w/ <i>slash</i>	:			DO	→	OBL

- Collapsing these contrasts is not unmotivated:

- Coming to exist/state change/motion related via measuring out (Tenny 1994)
- All moved/all changed parallelism in the locative alternation telling.
- DO linking rule collapses moved/changed in (7) (Levin and Rappaport 1988)
- Traversal/searched are related in that searching involves a sort of traversal.

- Can be given a more uniform mereological treatment (cf. Krifka 1998) in terms of scales of change following Beavers (to appear) (cf. Hay et al. 1999, Kennedy and Levin 2001).

- A quick note on telicity. It is important to determine the source of an alternation:

(42)

a.	<i>Ma ehitasin endale suvila (kahe nädalaga).</i>	
	I-NOM built-PAST-1ST myself-ALL cottage-GEN (two-GEN week-COM)	
	'I built the cottage for myself (in two weeks).'	
b.	<i>Ma ehitasin endale suvilat (kaks nädalat).</i>	
	I-NOM built-PAST-1ST myself-ALL cottage-PART (two-NOM week-PART)	
	'I was building the cottage for myself (for two weeks).'	(Estonian)

(cf. Ackerman and Moore 2001, Ch.4, (2), p.84)

- Estonian partitive correlates with (a) atelicity and (b) quantitative indeterminacy. Finnish similar but more complicated (Kiparsky 1998, 2001).
- None of the oblique markers in §3.1-§3.5 are general atelicity markers, suggesting an affectedness-based account.
- **Conclusion:** The main conclusion is that there are specificity contrasts in terms of affectedness when alternating from direct objects to obliques.

## 4 Indirect Object Alternations - Goals

- In the English dative alternation, first objects (FO) are possessors, *to*-obliques are goals (Jackendoff 1972, Green 1974, Oehrle 1976, Levin and Rappaport Hovav 2002):

- (43) a. John mailed Mary a letter. (Mary is a possessor)  
 b. John mailed a letter to Mary. (Mary is not necessarily a possessor)
- (44) a. John mailed a letter to London. (London is a goal)  
 b.??John mailed London a letter. (only OK if London is possible possessor)
- (45) a. John mailed [a letter for Ed Koch] to New York.  
 b.#John mailed New York [a letter for/to Ed Koch].

- Benefactive yields similar effects, as does the *teach*-alternation. Following Green (1974), FO adds *have* meaning (and there are as many FOs as there are *haves*):

(46)

V-Specific	More General	Most General
<i>mail x NP</i>	<i>x</i> (intended to) have theme and theme (intended to) arrive at <i>x</i>	<i>x</i> is a POSSESSOR
<i>mail NP to x</i>	theme (intended to) arrive at <i>x</i>	<i>x</i> is a GOAL

- Also various motion-based alternations, including *throw FO/to/at* and goals in path-languages (Talmy 2000), which alternate between *to* and *until*-markers (Beavers 2004).

## 5 Subject Alternations - Directness of Causation

- Hard to find; languages seem to resist them (whence GB's EPP, RG's Final-1 Law, LMT's Subject Condition, etc.). You get them when something holds down the fort:

- (47) a. The truck and the car collided. (car and truck in motion)  
 b. The truck collided with the car. (truck in motion)
- (48) a. The truck collided with the car, which was parked on the side of the road.  
 b. The truck collided with the car, which was rolling down the hill.  
 c.#The truck collided with the car while the truck was standing still.  
 d.#The truck and the car collided while the car was standing still.

- Volitionality-based nom/dat alternations (Russian, Hindi; Ackerman and Moore 2001).
- A better place to look is demoted subject marking in causativization (Shibatani 1976). Many languages exhibit causee-marking alternations reflecting the specificity of how manipulated the causee was (French, Authier and Reed 1991; Hungarian, Hetzron 1976; Chicheŵa, Alsina 1992; Japanese, Shibatani 1973).

## 6 Summary and Discussion

- All of the above alternations conform to this principle:

(49) **Alignment of Specificity to Realization (ASR):**

Direct argument variants in argument/oblique alternations entail more properties about the role of the alternating participant than oblique variants.

- The following chart summarizes the contrasts seen above (focusing just on DOs):

(50)

Property Hierarchy			Realization		
V-Specific	More General	Most General			
<i>load x onto NP</i>	all of <i>x</i> is all moved	<i>x</i> is HOLISTICALLY AFFECTED	DO		
<i>spray x onto NP</i>					
<i>load x with NP</i>	all of <i>x</i> is all changed				
<i>spray x with NP</i>					
<i>walked x</i>	all of <i>x</i> was all traversed/searched				
<i>searched x</i>					
<i>written x</i>	all of <i>x</i> comes/ceases to all exist				
<i>built x</i>					
<i>moved x</i>	<i>x</i> moved somewhere $\neq$ source	<i>x</i> is AFFECTED	OBL DO		
<i>pushed x</i>					
<i>broken x</i>	some property of <i>x</i> has changed				
<i>cut x</i>					
<i>walked up x</i>	<i>x</i> was traversed/searched				
<i>searched in x</i>					
<i>written on x</i>	<i>x</i> came into/went out of existence				
<i>built on x</i>					
<i>slashed at x</i>	no affectedness known of <i>x</i>			<i>x</i> is a PARTICIPANT	OBL
<i>touched x</i>					

– Moving left to right we see:

- \* *V*-specific properties clustering together for particular alternations.
- \* These general properties clustering together across alternations.

– Moving top to bottom we see increasing underspecify keyed to morphosyntactic contrasts for a given alternation with a single verb (the **ASR**).

- Ideally, a theory of argument realization should capture both types of generalizations in a transparent way: a transparent way of relating the ultra-specific to the ultra-general and a way of capturing the ASR.
- **Thematic roles** don't work for obvious reasons: they don't vary according to realization, and sweep too much idiosyncrasy under the rug.

- **Predicate decomposition** theories fare better but miss major generalizations:

- (51) a. John loaded hay onto the wagon. (change-of-location)  
           [x cause [y to come to be at z]/LOAD]  
       b. John loaded the wagon with hay. (change-of-state)  
           [[x cause [z to come to be in STATE]]  
           BY MEANS OF [x cause [y to come to be at z]/LOAD]]  
       (cf. Levin and Rappaport 1988, (24), p.26)

- Alternating verbs are polysemous.
- LCSs share the same components but restructured (“paraphrase” relationships).
- Restructuring changes semantic structure which determines syntactic structure.

- **ASR:** There is no a priori association of direct arguments to more entailments (see e.g. Gropen et al. 1989), nor *which* entailments those would be if there were.
- Linking rules are not inherently semantic in nature; no link to root, decompositions basically just represent proto-syntactic structure (cf. Baker 1997).
- **Semantic Clustering:** Does not explain how the “same” alternations contrast in *V*-specific ways (e.g. *spray* vs. *load*) or more radical ways (e.g. *spray/load* vs. *break/cut*), or how different alternations relate (completeness vs. affectedness for locative/conative).
- Predicate decompositions not semantically fine-grained enough, too much left to root, yet root to LCS connection rarely explicated.
- Could be modified, but predicate decompositions lack the basic ingredients to state the appropriate generalizations: they’re about structure, not semantic content.
- **Proto-role** theories provide the entailment basis of argument realization.
- Thematic roles are sets of entailments:

- (52) **Individual Thematic Role:** The set of entailments a verb *V* associates with a participant *x* describing its role in an event *e* (Dowty 1989), including:
- V*-specific entailments
  - General entailments shared across *V*s (implied by *V*-specific ones)

- Individual thematic roles include increasingly general information about a participant.

(53)	Make-Up Of Individual Thematic Role		
	<i>V</i> -Specific	More General	Most General
LOCATUM <sub>load</sub>	{ <i>x</i> loaded onto sth, ...,	<i>x</i> is moved, ...,	<i>x</i> is affected, ..., }
LOCATUM <sub>spray</sub>	{ <i>x</i> sprayed out of sth, ...,	<i>x</i> is moved, ...,	<i>x</i> is affected, ..., }

- If alternations are keyed to very general entailments, the effects chain backward, capturing semantic clustering in (50).
- But how to capture ASR?

## 7 A Sketch of an Analysis

### 7.1 Thematic Role Types

- ASR can be easily captured in terms of subsets:

(54) For two thematic roles  $P$  and  $Q$ ,  $P$  is more specific than  $Q$  if  $Q \subset P$ .

(55) **ASR:** In a given alternation, the direct argument realization has individual thematic role  $P$  and the oblique realization has role  $Q$  where  $Q \subset P$ .

- But *which* contrasts will we see? Consider the two conative alternations:

(56) a. John ate the sandwich. (sandwich all eaten)

b. John ate at the sandwich. (sandwich not necessarily all eaten)

(57) a. John slashed the curtain. (curtain slashed)

b. John slashed at the curtain. (curtain not necessarily slashed)

- These correspond to these general properties:

(58) General Properties : HOLISTICALLY AFFECTED      AFFECTED      PARTICIPANT  
*eat* : DO → OBL  
*slash* : DO → OBL

- How to capture this with sets of entailments? I first define a proto-role (Dowty 1991):

(59) **Proto-Role:** The set of general entailments that define a canonical agent/patient.

- For purposes of this sketch I assume the following proto-patient definition:

(60) **Contributing Properties for the Proto-Patient Role (cf. Dowty 1991):**

a. Affected (cf. causally affected, undergoes change, no independent existence)

b. Holistically affected (cf. incremental theme)

- Second I define a thematic role type (cf. Dowty 1989):

(61) **Thematic Role Type:** The set of proto-role entailments an individual thematic role contains, used for computing subject/object selection.

- Holistic affectedness implies affectedness, so (60) determines three thematic role types, which line up with the three general properties in (58):

(62) Thematic Role Types :  $\left\{ \begin{array}{c} \text{Holistically Affected} \\ \text{Affected} \end{array} \right\}$       {Affected}      { }  
 General Properties : HOLISTICALLY AFFECTED      AFFECTED      PARTICIPANT  
*eat* : DO → OBL  
*slash* : DO → OBL



- Thus there are *two* ways to realize patient of *slash/eat*: direct argument or *at*.
- If no appropriate oblique marker exists in the language, no alternation (e.g. Romance languages have no dative alternation but also no allative prepositions/cases).
- Since oblique markers determine alternations, one could generally just think of alternations as a purely lexical process:
  - Verbs assign thematic roles to direct arguments.
  - Oblique markers assign thematic roles to obliques (a superset of the inherent role and a subset of the verb role).
- Thus licensing alternations is a lexical process top to bottom.
- Still not the entire story (cf. *\*break at*; no contact?) but a step forward.

### 7.3 Summary

- Thematic roles as sets of entailments provides nice way to capture:
  - *V*-specific semantics and general correlations across alternations.
  - Specificity contrasts as subset relations.
- The properties of alternations are determined as follows:
  - (68) a. **General:** Alternations licensed by roles verbs assign to direct arguments and oblique marker inventory.
  - b. **Morphosyntax:** Determined by oblique marker inventory. For English:
    - i. Only *at* describes intended contact.
  - c. **Semantics:** Individual thematic roles vary according to general principles.
- Goes beyond Dowty (1991):
  - Actually predicts oblique semantics (for Dowty underspecificity is not predicted).
  - Applicable to wider range of predicates/roles (covers transitivity alternations).
- Goes beyond Ackerman and Moore (2001), who make a similar proposal:
  - (69) PARADIGMATIC ARGUMENT SELECTION PRINCIPLE:  
 Let  $P(\dots, arg_i, \dots)$  and  $P'(\dots, arg'_i, \dots)$  be related predicates, where  $arg_i$  and  $arg'_i$  are corresponding arguments. If  $arg_i$  and  $arg'_i$  exhibit different grammatical encodings and  $arg_i$  is more prototypical with respect to a particular proto-role than  $arg'_i$ , then  $arg_i$ 's encoding will be less oblique than  $arg'_i$ 's encoding. (*ibid.*, Ch.7, (2), p.169)
    - Doesn't say what "prototypicality" is; I argue it is greater specificity.
    - Assumes proto-role basis, but there's no evidence that FOs are proto-role based.
    - Doesn't provides basis for oblique marker selection.

## 8 Conclusion

- The empirical generalization is the **Alignment of Specificity to Realization (ASR)**:

(70) Direct argument variants in argument/oblique alternations entail more properties about the role of the alternating participant than oblique variants.

- Regarding argument realization in general:

**Q:** What kinds of meanings are relevant, and what semantic notions are relevant?

**A:** Verb-specific entailments, cross-cutting entailments, and semantic underspecificity. So far, only proto-role theories provide a rich enough semantics for this.

**Q:** What grammatical categories map onto what semantic notions?

**A:** Oblique markers carry not just inherent semantics but correlate with underspecificity. The necessary relationship (subsets) comes for free in proto-role approaches.

- Argument realization is lexically driven: verbs determine alternations, oblique markers determine shape of alternation, general principles determine semantic contrasts.
- But why these contrasts? Why this kind of “minimal thematic role type contrast”?
- I have no idea. Looks like a privative contrast but why not something else?
- But, at least, why underspecificity? Here I have an idea:

- There’s only one way to to be a prototypical/canonical participant in an event.
- That one way maps to the most economical encoding: direct argument.
- There are an infinite number of ways to deviate from canonicity.
- One of these is even underspecificity: not knowing a certain factor of the event.
- Thus the best way to encode general non-canonicity is underspecificity:

<b>Direct Arguments</b>	<b>Obliques</b>
Canonicity	Non-Canonicity (of any type)
Less Marked	More Marked

- Underspecificity is a way to make a simple, binary canonical/non-canonical contrast.

## A Double Argument Alternations - The Locative Typology

- These alternations licensed because of semantic compatibility:

(71) *with* : { causally intermediate }      LOCATUM<sub>V</sub> : { causally intermediate, ... }  
 LOC : { static location }                      LOCATION<sub>V</sub> : { static location, ... }

- The full locative typology:

(72) a. John loaded the hay onto the wagon.                      (hay all moved, wagon filled)  
 b. John loaded the wagon with the hay.                      (wagon all filled, hay moved)

(73) a. John broke the stick against the fence.                      (stick breaks, not sure about fence)  
 b. John broke the fence with his stick.                      (fence breaks, not sure about stick)

(74) a. John put the hay on the table.                      (all hay moved, table not all covered)  
 b. \*John put the hay with the book.

(75) a. John filled the bathtub with the water.                      (bathtub filled, not all water used)  
 b. \*John filled the water into the bathtub.

- Symmetric thematic role types yield alternations, asymmetric types non-alternations:

(76) Participants are assigned individual thematic roles of the following types:

	<b>locatum</b>	<b>location</b>
<i>load</i>	HOLISTICALLY AFFECTED	HOLISTICALLY AFFECTED
<i>put</i>	HOLISTICALLY AFFECTED	AFFECTED
<i>fill</i>	AFFECTED	HOLISTICALLY AFFECTED
<i>break</i>	AFFECTED	AFFECTED

- Semantic contrasts determined by same general principles as for conative.

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