• Verbs from various semantic fields are often classified as either manner or result verbs:

(1) a. **MANNER VERBS**: specify a manner of carrying out an action.
    *cry, hit, pound, run, shout, shovel, smear, sweep, ...*

    b. **RESULT VERBS**: specify the result of an event.
    *arrive, clean, come, cover, die, empty, fill, put, remove, ...*

• This distinction, which crosscuts the transitive/intransitive verb distinction, is grammatically relevant: each type of verb shows its own cluster of argument realization properties (Fillmore 1970, RH&L 1998), and, thus, the distinction figures centrally in discussions of argument realization.

• The distinction was first attributed to verbs and later to their roots, thus presupposing that roots have an ontological type, a position that not all accept (Acedo-Matellán & Mateu 2014).

• Result roots are found in a couple of syntactic contexts: causative contexts where their patient argument is realized as direct object and noncausative contexts where their patient is subject.

(2) Pat broke the mug./The mug broke.

— RH&L (2005) suggest the following generalization to unify these distributional properties:

(3) The patient—the entity that the result is predicated of—**MUST** be realized and **CAN ONLY** be realized as a direct object.

— Essentially, these distributional properties are attributed to the need to express the argument that the result is predicated of, even if this analysis is variously lexically and syntactically implemented. In syntactic implementations, the argument and predicate together form a small clause.

• Manner roots, in contrast, are found in a wide range of syntactic contexts, with some variation depending on the root itself, and apparently no single generalization unifies these contexts.

• Even if no such generalization exists, the notion of manner root—and manner more generally—deserves a closer, systematic look, especially as it interacts with transitivity.

**Goal**: Present a case study of a subset of manner verbs, hitting verbs, to draw attention to issues that need to be confronted in the domain of manner by future research.

**Why these manner verbs?**
— As two-argument transitive manner verbs, they offer more complexity than one-argument verbs.
— Considerable crosslinguistic hitting event data is available.

(Focus on ‘simple uses’, rather than ‘complex’ uses as in nonselected argument resultatives or *out-* prefixation, which might involve a ‘high’ or ‘relational’ manner (Rappaport Hovav 2015).)
Overview
— Survey hitting events descriptions across languages, including locus of manner encoding.
— Compare properties of hitting verbs and wiping verbs.

Conclusions previewed: In hitting event descriptions:
— some languages must express at least part of the manner outside the verb.
— some languages resist expressing the surface argument as an object, especially when inanimate.

1 Verbs with manner roots: An introduction

Verbs with manner roots are often characterized with reference to the notion of result, rather than on their own terms.

• RH&L (2010) propose that manner verbs, unlike result verbs, are nonscalar change verbs.

A SCALAR CHANGE, the semantic notion associated with result roots, is a change in the value of a scalar attribute in a particular direction on the relevant scale (Hay, Kennedy & Levin 1999, McClure 1994, Rappaport Hovav 2008).

• Regarding argument realization, RH&L (1998, 2005, 2010) propose manner verbs, unlike result verbs, are not subject to (3), as reflected in the examples (4), which all lack result verb analogues.¹

(4) a. UNSPECIFIED OBJECTS: The horse kicked.
b. NONSELECTED OBJECTS: She kicked her way through the fallen leaves.
c. CONATIVE CONSTRUCTION: Kim hit at the mosquito.
d. POSSESSOR RAISING: Kelly hit me on the arm.
e. With/against ALTERNATION (Fillmore 1977:75):
   Sam hit the fence with a stick./Sam hit a stick against the fence.

2 Hitting verbs: Setting the stage

• English hitting verbs are verbs with manner roots that describe events involving surface contact with a physical object via a forceful impact.

(5) HITTING VERBS: bash, beat, hit, kick, pound, punch, slap, smack, tap, whack, . . .

• Though they lexicalize ways of potentially damaging entities, they do not entail a physical change.

• Hitting verbs contrast with breaking verbs, result verbs which describe changes in a physical object’s ‘material integrity’ (Hale & Keyser 1987);

(6) BREAKING VERBS: bend, break, crack, shatter, splinter, split, snap, . . .

¹Unspecified and nonselected objects may be found in generic or repetitive contexts with result verbs (Rappaport Hovav 2015, RH&L 1998, Wright & Levin 2000, though see Goldberg 2001, 2005, Grône 2014, Mittwoch 2005).
Breaking verbs describe specific types of changes that often result from forceful impact, but they are silent about the manner in which the result comes about.

(7) The rock hit/broke the windshield, but luckily it wasn’t damaged.

Thus, hitting and breaking verbs are manner and result subclasses within the larger domain of verbs used to describe events in which physical objects are forcefully impacted.

Although hitting events are described in English using transitive verbs, there is considerable crosslinguistic diversity in the description of such events, which bears on the notion of manner.

Sections 3 and 4 present the bottom line generalizations concerning the description of such events; for case studies of individual languages, see Levin (2012, in press).

3 The crosslinguistic encoding of the manner component of a hitting event

Components of a hitting event: An actor, a surface, a manner (degree of force, nature of force application, iteration of force), which may include use of an instrument (tool, body part).

A major dimension of crosslinguistic variation in the encoding of hitting events involves the locus of expression of the manner component.

The observation: The manner component is lexicalized in a simple verb in some languages, while (at least some of) it is preferentially expressed outside the verb in other languages.

3.1 Richness of hitting verb inventories

English has a rich—that is, large and diverse—inventory of hitting verbs, consisting of ‘two-tiers’ (cf. Slobin 1997:459 on manner of motion verbs):

(8) BASIC (FIRST-TIER) VERBS: beat, hit
(9) MORE SPECIFIC (SECOND-TIER) VERBS, GENERALLY HYPOYMS OF BASIC VERBS:
   a. INVOLVING A BODY-PART: bite, butt, claw, elbow, kick, knee, nip, paw, peck, pinch, punch, scratch, slap, slug, smack, spank, ...
   b. INVOLVING A TOOL: belt, birch, bludgeon, cane, club, cosh, cudgel, cuff, flog, hammer, knife, lash, paddle, paddywhack, stab, strap, truncheon, whip, ...
   c. INVOLVING DEGREE/NATURE OF FORCE: bash, batter, bonk, bop, bump, clobber, conk, dash, drum, knead, knock, poke, pound, pummel, ram, rap, smash (where no effect implicated), strike, swat, tamp, tap, thrash, wallop, whup, ...
   d. INVOLVING A SOUND ON IMPACT (ONOMATOPOEIC): bang, clink, clank, clatter, thud, thump, thwack, whack, ...(Richardson 1983, Stringer 2011:18)

Most (all?) languages have at least a monomorphemic translation equivalent of English hit.

But not all languages have a rich hitting verb inventory (e.g., Lhasa Tibetan; DeLancey 2000:13).

However, such languages use other strategies to encode manner outside the verb, allowing finer distinctions to be made in the hitting domain, including some lexicalized by English hitting verbs.
3.2 Attested strategies for encoding manner content outside the verb

Strategies involve varying types of non-verbal content, typically nominal:
- Body part or tool used as instrument: Emai, Nakh-Dagestanian languages, Lhasa Tibetan
- Action nominal derived from body part, tool, or other manner content: Romance languages
- Ideophone evoking the sound produced by the contact: Emai, Japanese
- Cognate object (reiterates manner lexicalized in verb): Vietnamese [not discussed; Pham 1999]

**Basic hitting verb plus noun designating body part or tool**

- Notions lexicalized as second-tier hitting verbs in English are expressed via a basic hitting verb in combination with a noun denoting a tool or body part.


(10) óhí só ójé èkpà.
    Ohi smack Oje fist
    VERB SURFACE BODY PART
    ‘Ohi punched [smacked his fist against] Oje.’ (Emai; Schaefer & Egbokhare 2004:309, (1a))


    cerjg tuoxan, literally ‘tooth strike’, means ‘bite’, not ‘hit with a tooth’
    urs tuoxan, literally ‘knife strike’, means ‘stab’, not ‘hit with a knife’
    tuop tuoxan, literally ‘rifle strike’, means ‘shoot’, not ‘beat with a rifle’

(13) as phagalna tuop q।ॣ OSSIRA.
    I-ERG rabbit-DAT rifle-NOM threw
    ‘I shot at the rabbit with a rifle.’ (Ingush; Jakovlev, 1940:43; from Nichols 1984:189, (12c)

- As with English denominal verbs, some of these verb-noun combinations take on conventionalized meanings, as in (12).

**Light verb plus ‘contentful’ noun**

- Notions lexicalized as second-tier hitting verbs in English are expressed via a light verb plus a ‘contentful’ noun; the noun often denotes an ‘action pattern’ (Jackendoff 1990), but may denote a body part or tool (cf. English give a kick).

- Attested in Italian (Masini 2012; cf. Folli & Harley 2013), Portuguese (Baptista 2004), Spanish (Palancar 1999).

- The light verb in Romance corresponds to ‘give’, but ‘put’ is a possibility in some languages.

- The object of the light verb is described by Baptista (2004:31) as a ‘violent action noun’ productively formed by adding –ada in Portuguese (or one of its Romance cognates) to a noun denoting a tool or body part used to hit or hurt.
(14) O João deu [uma bengalada] [ao Pedro].
the John give.PERFPST3s a caning to.the Peter
‘John gave a cane- ada, i.e. a caning, to Peter.’ (Portuguese; Baptista 2004:36, (18c))

(15) BASES FOR – ada NOUNS: agulha ‘needle’, bastão ‘club, staff’, bengala ‘cane’, chibata

• Basic hitting verb or light verb plus ideophone

— Notions lexicalized as second-tier hitting verbs in English are expressed via a basic hitting or
light verb together with an ideophone.

— Attested in Japanese (Kageyama 2007:47) with both light verbs and basic hitting verbs, Emai
(Schaefer 2001) with basic hitting verbs.


(17) BASIC HITTING EVENT:
Yukiko-ga doa-o tatai-ta.
Yukiko-NOM door-ACC hit-PST
‘Yukiko hit the door.’ (Japanese)

(18) BASIC HITTING VERB PLUS IDEOPHONE:
Yukiko-ga doa-o gongon(-to) tatai-ta.
Yukiko-NOM door-ACC ‘bang’(-ADV) hit-PST
ACTOR SURFACE IDEOPHONE VERB
‘Yukiko banged the door.’ (Japanese; based on Kageyama 2007:47, (36))

(19) LIGHT VERB suru ‘do/make’ PLUS IDEOPHONE:
Hahaoya-ga [akatyan-no senaka-o] tonton suru.
Mother-NOM baby-GEN back-ACC ‘tap’ do.PRES
ACTOR [ SURFACE] IDEOPHONE LIGHT VERB
‘Mother taps her baby on the back.’ (Japanese; Kageyama 2007:44)

— Emai can combine the ideophone and verb-tool noun strategies:

(20) ó fi ághán vbí óran gbógbógbó.
he hit sickle LOC tree with-a-smack
‘He smacked a sickle on the tree.’ (Schaefer 2001:349, (21c))

— This strategy extends to other manner domains: languages use verb-ideophone combinations to
express manners of motion (Akita 2008, Ibarretxe-Antuñano 2006, 2009, Matsumoto 2003, Schae-
as laughing (Shibatani 1990:155), crying (Shibatani 1990:155, Wienold 1995:320), and looking
(Tsujimura 2007:449).

Summary: In hitting event descriptions, the manner component is lexicalized in a simple verb in
some languages, while (at least some of) it is expressed outside the verb in others.
4 The crosslinguistic encoding of the surface argument of a hitting event

- The surface argument is a critical component of a hitting event due to the nature of the manner involved; thus, its argument realization options bear on the understanding of manner roots.

- In English, hitting verbs allow for alternate realizations of the surface:
  While it may be the object, it may also be expressed in a PP.

(21) Shawn hit (at) the fly.

- It is precisely in the realization of the surface that variation is observed across languages, with the attested options going beyond what English might suggest.

The observation: In hitting event descriptions, some languages resist expressing the surface as a direct object, especially when inanimate.

4.1 Attested patterns for the realization of the surface

- **Surface as object**: Smith hit *the fence*. (English, Vietnamese)
  \[
  [\text{VP} \ V \ \text{NPSURFACE-ACC}] 
  \]

- **Surface as oblique**: Smith hit at *the fence*. (English, Hebrew, Lhasa Tibetan, Ulwa)
  \[
  [\text{VP} \ V \ \text{NPSURFACE-OBL}_{\text{loc}}] \text{ or } [\text{VP} \ V [PP \ P_{\text{loc}} \ \text{NPSURFACE}]] 
  \]

(22) M raudi L *(kau) bau-t-ida.
    M SUBJ L at hit-TA-3SING
   ‘M hit L.’ (Ulwa; Koontz-Garboden field notes:0405-1024)

- **Surface as object if animate, but oblique if inanimate**: Smith hit *Jones/at the fence*. (Dutch, German, Russian, Swedish)
  — **Animate surface as object**: \[\text{VP} \ V \ \text{NPSURFACE-ACC}] 
  — **Inanimate surface as oblique**: \[\text{VP} \ V \ \text{NPSURFACE-OBL}_{\text{loc}}] \text{ or } [\text{VP} \ V [PP \ P_{\text{loc}} \ \text{NPSURFACE}]] 

(23) a. Jag sparkade *(på) bordet (flera gånger).
    I kicked (on) table.DEF (many times)
   ‘I kicked (on) the table many times.’ (Swedish; Lundquist & Ramchand 2012:224, (2a))

   b. Jag sparkade (på) honom (flera gånger).
    I kicked (on) him (many times)
   ‘I kicked him many times.’ (Swedish; Lundquist & Ramchand 2012, 224:(1a))

(As the data in (23) show, the alignment of animacy and objecthood is simplified somewhat here.)

- **Surface as oblique with instrument object**: Smith hit the stick against *the fence*.
  (Emai, English, Ingush, Lhasa Tibetan)
Across Nakh-Dagestanian, the surface, whether animate or inanimate, is expressed with an oblique case and the instrument with nominative (i.e. absolutive) (Nichols 1984:188, 2011:467–470, 746).

(24) Cuo mashienaa ghadzh tiexar.
3s.ERG car-DAT stick-NOM strike
‘He hit the car with a stick.’ (Ingush; Nichols 2011:340, (47))

• **Surface as oblique with a V-N combination:** The horse gave a kick to *my shin*.
(English, Hebrew, Ingush, Lhasa Tibetan, Portuguese, Spanish, Ulwa; see (13))

| [VP V N NPSURFACE-OBL ] | or | [VP V N [PP P NPSURFACE ] ] |
| Choice of case/P (e.g., locative vs. dative) may depend on animacy of surface.

**TYPES OF V-N COMBINATIONS:**
— V is a light verb: *give slap/slapping ‘slap’* (English, Hebrew, Italian, Portuguese, Spanish)
— V is a ‘basic’ hitting verb: *hit fist ‘punch’* (Emai, Ingush, Lhasa Tibetan, Ulwa)
— V is a hitting verb and N is a cognate object: *hitV hitN ‘hit a hit’* (Vietnamese) [not discussed]

• **Surface as first object with a V-N combination:** Jones hit *Smith* a fist. (Emai; see (10))

| [VP V NPSURFACE N ] |
| V is a ‘basic’ hitting verb: *smack fist ‘punch’*. |
| N provides semantic content to distinguish among types of hitting events.

• **Surface as object with a V-ideophone combination:** Jones hit *the fence* bang.
(Emai, Japanese; see (19))

| [VP V NPSURFACE ideophone ] |
| (There may be some variation in the expression of the surface depending on the language.)

**Summary:** Across the languages surveyed, there seems to be some resistance to expressing the surface as a canonical direct object, especially if inanimate, in hitting event descriptions.

**Compare:** The patient is always a direct object in causative descriptions of breaking events; animacy effects are not reported.

### 4.2 What gives rise to the different realizations of the surface?

#### 4.2.1 The contribution of manner encoding

• The realization of the surface depends in part on the locus of manner content.

• In a language that expresses manner outside the verb in a verb-noun combination, the noun is syntactically an object (though sometimes in an attenuated sense).

• Thus, unless the language allows for double objects as in Emai (cf. also English *give him a slap*) or has some other special morphosyntactic device, the surface cannot be realized as an object.
An oblique realization of the surface is needed, with the precise realization dependent on the verb involved: location if ‘put’/‘hit’, recipient/goal if ‘give’.

4.2.2 The contribution of other semantic determinants to the realization of the surface

- When the nominal encoding of manner is not at issue, the realization of the surface must reflect priorities among semantic determinants of argument realization.
- Potential semantic determinants are sketched, but a full analysis is beyond the scope of this talk. For more discussion see Levin (2012), Lundquist & Ramchand (2012), and de Swart (2014).
- The alternate realizations of the surface arise because no result state is necessarily entailed of it (i.e. it does not undergo a necessary scalar change)—so (3) does not constrain its realization.

⇒ Thus, it may be an object or oblique, as indeed is attested both within and across languages.

- The semantic determinants that appear to control the realization of the surface as an object fall under the rubric of affectedness. Possibilities include:
  - The notion of force recipient—an argument that is impinged upon by a force, but does not necessarily undergo a change of state (Croft 1991, RH&L 2001).
  - The notion of ‘potential for change’, one of the four increasingly weaker types of affectedness identified by Beavers (2010:835; see also 2011).
  - In languages with animacy sensitivity, the notion of ‘experiential affectedness’ may apply to sentient surfaces (Lundquist & Ramchand 2012:230; see also Dowty 1991:596, de Swart 2014).²

- An incompatibility between locative case markers and animate nominals in some languages (Aristar 1996:209) might also favor the realization of animate surfaces as objects. This incompatibility might reflect a difficulty in conceptualizing animates as locations and might extend to surfaces.
- The surface must be an oblique if a language only allows patients to be realized as objects—that is, it requires a strong degree of affectedness for objecthood.
- The surface may be an oblique if ‘moving entity’ qualifies as a semantic determinant of objecthood with at least the same priority as affectedness.
  - The instrument argument in a hitting event moves into contact with the surface: it is a theme in the localist sense (Gruber 1965, Jackendoff 1976, 1983) or a Talmyan figure (1975).
  - In English, the instrument may be expressed as an object, as in the with/against alternation: here a moving entity is given priority over the surface as object.

(26) Sam hit a stick against the fence./Sam hit the fence with a stick.

²For Lundquist & Ramchand this type of affectedness qualifies as being in a result state; this proposal requires further empirical study.
— Analogues of the *against* variant instantiate the major argument realization option for hitting verbs in some languages (e.g., Nakh-Dagestanian languages).

**Summary:** The availability of both object and oblique realizations for the surface in and across languages can be attributed to the locus of manner encoding and to semantic determinants for objecthood, as well as to the priorities among them.

5  **Hitting verbs as surface contact verbs**

• Hitting verbs belong to the larger manner class of surface contact verbs, where they should be distinguished, for instance, from wiping verbs, as in (27).

(27) a. **INVOLVING A BODY PART:** lick, suck, . . .
   b. **INVOLVING AN INSTRUMENT:** brush, comb, file, filter, iron, hoover, hose, mop, plow, rake, sand, sandpaper, shear, shovel, siphon, sponge, towel, vacuum, . . .
   c. **INVOLVING A VARIETY OF MANNERS:** buff, dab, polish, rinse, rub, scour, scrape, scrub, shave, skim, soak, squeeze, suction, swab, sweep, wash, wipe, wring, . . .

— Hitting verbs—and events—involve impact at a point on the surface, usually carried out with the intent of causing damage (although damage is not lexicalized by the verb).

— Wiping verbs—and events—involve a contact over an extended part of the surface, usually carried out with the intent of removing stuff from it (although removal is not lexicalized by the verb).

• A comparison of hitting and wiping verbs serves to illuminate how manner in general vs. the manner root of members of a specific manner verb subclass contribute to the properties of hitting verbs and the description of hitting events.

5.1  **Properties that wiping verbs and hitting verbs share**

• Like manner verbs in general, wiping verbs permit a wide variety of argument expression options.

(28) a. **UNSPECIFIED OBJECTS:** Cinderella swept/wiped/scrubbed.
   b. **NONSELECTED OBJECTS:** Cinderella scrubbed her fingers to the bone.
   c. **out-PREFIXATION:** Cinderella outswept/outscrubbed her stepsisters.

• English has a rich inventory of wiping verbs.

• Wiping verbs may be found with an instrument, and some wiping verbs allow the instrument to be realized as an object, giving rise to the *with/against* alternation.

(29) a. Kerry wiped the table with a damp cloth.
   b. Kerry wiped a damp cloth over the table.

• Less data is available about the description of wiping events in other languages, but in Tsez, which like Ingush is a Nakh-Dagestanian language, wiping events are described in the same way as hitting events, with a nominative instrument and an oblique surface (Polinsky 2015:33–37).
As in Ingush, the event description uses a general verb, with the manner content expressed outside the verb in the nominative NP.

• Wiping verbs need not realize a specific argument as direct object: It can be the surface, the instrument, the material on the surface (see below), or a nonargument.

5.2 Properties that set wiping verbs apart from hitting verbs

• The surface argument of a wiping verb may but need not be understood as an incremental theme.

(31) a. Kerry scrubbed the bathtub for hours. (quantized object; atelic)
    b. Kerry scrubbed the bathtub in three minutes flat. (quantized object; telic)

Wiping actions can in principle be applied indefinitely to a surface; however, when the surface has a quantized area, this area can be understood as an incremental theme, delimiting the event.

• Although the surface would be considered the ‘normal’ direct object of English wiping verbs, they may take an argument describing some material found at this location (L&RH 1991).

(32) a. Kerry is scrubbing the bathtub.
    b. Kerry is scrubbing the stains off the bathtub.

The material argument is often found in the presence of the surface, suggesting its presence in some instances is licensed by a locative relation between the material and surface (RH&L 1998).

• Unlike hitting verbs, wiping verbs do not seem to allow possessor raising.

(33) a. Kelly hit my arm./Kelly hit me on the arm.
    b. Kelly wiped my arm./*Kelly wiped me on the arm.

5.3 The sources and implications of the similarities and differences

• The argument realization properties of wiping verbs reinforce those of hitting verbs: the surface as an affected entity or the instrument as a moving entity both qualify for realization as an object; the material may also, sometimes due to its cooccurrence with a location.

• The shared properties of hitting and wiping verbs can be attributed to the manner root, and specifically, to a surface contact root.

• The differences might largely be attributable to the nature of the manners involved, as well as to differences in the types of results that these manners are intended to achieve.

— The material argument found with wiping verbs could be attributed to the intended result of their associated manner: removing stuff from a surface.
— The surface argument plays a somewhat different role in the two types of events: as a force recipient, it is a ‘goal’ in a hitting event, but as the location from which something is removed, it is a ‘source’ in a wiping event.

— Possessor raising with hitting verbs is usually associated with animate arguments; application of a force to a part of an animate may be seen as affecting the whole, while the type of surface contact associated with wiping verbs is less likely to be taken to experientially affect an animate surface.

6 In conclusion: Hitting the high points

6.1 Hitting verbs

• A survey of the encoding of hitting events within and across languages suggests that two factors underlie the attested encodings of hitting events:

(i) where the language prefers to encode the manner component, including the instrument:

Some languages must express at least some part of the manner component outside the verb, e.g., as a complement of a light verb or a basic hitting verb or as an adverbial element.

(ii) what degree of affectedness the language requires for realization as direct object:

Some languages resist expressing the surface as a direct object, especially when inanimate, apparently requiring a high degree of ‘affectedness’ for objecthood.

• These generalizations should serve as the basis for any analysis of hitting events; such an analysis should tie the strategies for event encoding used in a given language to properties of that language.

6.2 Manners and roots

• Locus of manner encoding has not been discussed under the rubric of roots, yet is clearly relevant.

• The loci of manner encoding, as well as the argument realization patterns of hitting verbs support a manner vs. result root distinction, in turn supporting providing roots with ontological types.

• The hitting/wiping comparison shows that although manner roots give rise to particular constellations of properties, there can be finer-grained differences among verbs with manner roots depending on particulars of the manner involved.

• This comparison suggests roots have more basic content that restricts their distribution.

• Hitting event descriptions show that manner roots have a certain amount of distributional freedom, with languages differing as to how much manner is encoded in the verb and, concomitantly whether two-argument manner verbs take objects.

• This freedom is compatible with accounts that take manner roots to be event modifiers (Acedo-Matellán & Mateu 2014, Harley 2005, RH&L 1998), as there are many ways to modify an event.

• Further work remains to be done regarding the notion of manner root to fully integrate the generalizations here into existing treatments of manner.
Acknowledgements: I thank Patrícia Amaral (Portuguese), Roey Gafter and Malka Rappaport Hovav (Hebrew), Andrew Koontz-Garboden (Ulwa), Paul Kroeger (Kimarang Dusun), Chigusa Krumada (Japanese), Francesca Masini (Italian), and Tanya Nikitina (Russian) for discussion of hitting and breaking in the languages that they are expert in. I am also grateful to Eve Clark, Boris Harizanov, Masha Polinsky, Malka Rappaport Hovav, and Judith Tonhauser for general discussion of this material.

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