Because it's there: How linguistic phenomena serve as cognitive opportunities

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1. Introduction

We will look at examples of how the "same" linguistic forms provide varying expressive opportunities across the dimensions of both space and time; this will be a story of variations in cognitive strategies as they are played out both synchronically and diachronically. Across space, cross-linguistically, the "same" linguistic form provides varying expressive opportunities; we see the resulting diversity expressed in dialect geography. Across time, diachronically, the "same" linguistic form provides varying expressive opportunities; these variations are the material of historical linguistics.

We will examine what provisions there are in the theoretical framework of cognitive linguistics for linguistic variation across space and time. As we know, linguistic categories are grounded semantically in human experience, which also provides motivation for the extension of linguistic structures via metaphor, metonymy, and other mapping relations. However, human experience provides arrays of input far too vast to be thoroughly processed and interpreted, much less expressed by any single language. We can use as an analogy the *I spy* book series: on each page there is a beautiful photograph, and a brief poem describing various items in the photograph, and the game is to locate in the photograph all the things mentioned in the poem. We all see the whole photograph, and everything in it, but finding the items listed in the poem can be quite a challenge, and this is because we can't attend to everything we perceive at once. We have more input than we can fully process, even with a static photograph. In our day-to-day experience of the dynamic processes around us, the presence of excess perceptual input is greatly multiplied, providing much more material than any human being can meaningfully comprehend, or than any language can sanction in its category structures.

The aggregate result of human experience is a human conceptual space, which is probably largely the same for everyone (note that Croft states that human conceptual space is universal, although it may be influenced by linguistic conventions; this work is to some extent inspired by Croft's (2001) *Radical Construction Grammar*, but the goals are much more modest, remaining within a single language family rather than attempting broad typology). The fact that the conceptual space is basically the same makes it possible for us to make sense of the different utilizations of conceptual space that we encounter when learning foreign languages. For example, in many of the languages I work with, the eye of a needle and the rounded handles of mugs are all referred to as "ears", and we can readily appreciate the iconic mapping of an ear onto various rounded shapes with holes, even though this mapping is foreign to speakers of English. So conceptual space is probably the same, but we utilize it differently. And part of the reason for this difference in utilization is just that conceptual space is far too large and complex for us to use all of it, at least at any one time, in any one language.

Here are some principles concerning the selection and organization of information and means for metaphorical and metonymical extension, and we will see these principles in action in the examples we are about to analyze:

- Ultimately every linguistic community must make its own decisions about what aspects of sensory input will be foregrounded, backgrounded, or simply ignored, as well as how the used input is organized.
- Various linguistic communities make various decisions about the use of source domains for the extension of linguistic categories via metaphor and other mappings.
- Variations in the organization of knowledge teach us about the nature of human cognition, its dynamics and its limits.

Although this makes for a readily accessible model of some basic principles of cognitive linguistics, and we will use this simplified model in much of our discussion, we need to recognize that the picture is not entirely so simple. It is not exactly the case that we receive input, sort and organize it, and then decide how to use it in various mappings. Right at the outset, the various factors we have just so neatly separated are actually

confounded. I am speaking here of the fact that perception cannot be realistically separated from the organizational act of conception.

The moment of perception obligatorily includes the act of conception, coexisting as "ception" (Talmy 1996) and inherently involving decisions about the relationships among items. These relationships are not necessarily fixed by input, thus providing opportunity for linguistic variation in terms of categorization. As we will see, even closely related languages that share many of the "same" linguistic features show striking divergences in how they utilize the linguistic matter at their disposal. We will also see that these divergences are not random; they indicate the presence of significant cognitive junctures in our perceptual experience, places where what is foregrounded or what category an item belongs to are ambiguous questions. Cross-linguistic discrepancies of this sort offer us an opportunity to consider the different ways that people can interpret their experiences of reality and sanction these interpretations in their grammar. Divergences of this kind can also be played out diachronically, offering different interpretations over time.

One attraction of cognitive linguistics is that it enables the researcher to organize and analyze sets of data so messy that they appear intractable. Not only can we now make sense of formerly incoherent phenomena, we can even compare them cross-linguistically and diachronically. Cognitive linguistics enables us to take jumbled lists of usage attached to a given form and produce coherent analyses organized in a principled fashion, and it is far easier and more rewarding to compare the resulting principled coherent analyses across the dimensions of languages and their histories. After all, comparing chaos with chaos just yields more chaos, but if you can find discrete definite shapes where you thought there was chaos, you have something to discuss and compare. As an aside we should note that the facility with which cognitive linguistic analyses locate comprehensible patterns in otherwise intractable piles of information makes it a powerful pedagogical tool as well. Language students prefer principled organization over the dizzying and seemingly infinite chaos that grammatical systems appear to present, and the results of cognitive linguistics can be made accessible without use of intimidating linguistic terminology (cf. Janda & Clancy 2002 and forthcoming a).

The Slavic language family is a group of closely related, yet in many ways surprisingly diverse linguistic communities. The past twelve hundred years or so of Slavic language history is reasonably well-documented, enabling us to trace the development from a mother language (closely approximated by Old Church Slavonic) to the present (Townsend & Janda 1996). I will present contrastive and diachronic Slavic data, derived from years of empirical research on vast databases of natural language data, primarily on the material of Czech, Polish, and Russian. The remainder of this paper will be devoted to three detailed analyses examining the semantics of Slavic case usage, the use of case in time expressions, and the development of new semantic distinctions within the masculine gender category. As we will see, a prolific source of contrasts in case usage is indicative of the role of metonymy in language, connecting endpoints, paths, trajectories, and locations. An unusually large number of systematic differences in case use is generated by the semantic field of time. This is perhaps no surprise, since time is understood entirely in metaphorical terms, providing many opportunities for languages to use different metaphoric means to highlight parallels between time and space, while suppressing others. The issue of salience and individuation has been returned to again and again in the development of distinctions within masculine gender in the history of Slavic languages, often recycling "old" morphology to create "new" distinctions. These three types of variation will be considered in this examination of the multitude of expressive textures available for cross-linguistic and diachronic comparison in the Slavic languages.

All three types of variation (case meanings, time expressions, and gender distinctions) involve grammatical subsystems (such as case and gender) and the specific categories that comprise them (such as individual cases and case uses and specific distinctions within masculine gender). There is a dynamic semantic relationship between a grammatical subsystem and its component parts that covers the spectrum of determinedness. Whereas individual parts of a subsystem are underdetermined, meaning that each unit has abstract flexible meanings that support the creation of extensions, collectively, a subsystem containing such units is overdetermined, supporting ambiguity, contiguity, and overlaps. For example, a given case, say the dative case, is underdetermined, which means that it can be used creatively and extended to accommodate new needs (such as the borrowing of words similar to words already

associated with the dative case). The case system as a whole is, however, overdetermined, which means that it provides more distinctions than absolutely necessary for communication. In other words, for a given relationship, the case system often provides multiple options for expression. Let's say I did something for someone; I can either express this by referring to the beneficiary in the dative case, or by using a preposition and the genitive or accusative case (depending upon the language). The tension between underdetermined specific categories and overdetermined systems provides an environment where variation is nurtured. This tension motivates the deployment of existing means (linguistic forms) for various purposes, using various cognitive strategies to enable expression. All of the contributors to this volume address either underdetermined subsystems or overdetermined systems. Mitkovska provides a insights into the complexities of the subsystem of a single preposition in Macedonian; and Rakhilina does the same with a single motion verb. Both Nesset and Israeli focus their analyses at the level of the overdetermination of a system (or at least part of a system), examining the complexities of the various options that the locative and accusative case offer speakers of Russian. The purpose of this article will be to compare entire systems across languages (and in the third analysis across time as well), and observe how this tension between underdetermination and overdetermination plays out on a macroscopic scale. Clancy's analysis of the semantics of BE and HAVE verbs in Slavic in this volume serves a similar purpose, for he examines both the underdetermined polysemies of individual verbs and the overdetermined systems of how BE and HAVE are distributed in the verbal lexicon, and then proceeds to a cross-linguistic comparison.

2. Analysis I: Discrete Case Contrasts across Czech, Polish, and Russian

The grammar of noun phrases in most Slavic languages is dominated by a system of grammatical cases (Blake 1994, Chvany 1986, Dahl 1985, Isačenko 1965, Jakobson 1936/1971, van Schooneveld 1978). A case system describes not only the positions, orientations, and trajectories of all items the universe might contain, but also all conceivable relationships among items and activities. Grammatical cases form austere, efficient cognitive systems, enabling users to describe any and every conceivable relationship within the confines of a handful of abstract highly polysemous cases. Like snowflakes, no two case systems are identical, and even closely related languages that

have inherited the "same" cases show startling differences in how they are used. However, differences in case usage are not a random pile of trivial facts -- they suggest various imaginative strategies in response to alternatives: one has to choose both what to ignore, as well as how to resolve ambiguities. Systematic differences resulting from the selection of logical alternatives are conventionalized differently in different languages. We will focus on discrete differences in case distribution (when a given idea is expressed using one case in one language, but another case in another language) in Czech, Polish, and Russian (abbreviated as Cz, P, and R). The data and semantic analyses of case usage presentd here are based upon comparisons of the vast and comprehensive accounts of case usage represented by Janda & Clancy 2002 and forthcoming a, b. The semantic analyses rely heavily on the models of metaphor presented by Lakoff & Johnson 1980 and Lakoff 1987, and build upon the implications these have for case semantics suggested by Langacker 1987b and Nikiforidou 1991.

Here is a brief overview of case usage. At this level of abstraction the case systems of the three languages look identical (for more detail, see Janda & Clancy 2002 and forthcoming a):

Nominative (NOM):
- a name (naming, subject)
- an identity (predicate nominative)

Genitive (GEN):
- a source (prepositions and verbs expressing withdrawal)
- a goal (prepositions and verbs expressing approach)
- a whole (possession, 'of', quantification, secondary prepositions)
- a reference (negation, comparison, prepositions expressing nearness, dates)

Dative (DAT):
- a receiver (indirect object, words expressing giving of signals, money, self, etc.)
- an experiencer (words expressing benefit, harm, and modal uses)
- a competitor (words expressing matching forces, submission, domination)

Accusative (ACC):

- a destination (all uses are refinements of this one, on a continumm from simple destination to expressions closer to *through* or *through to the end*)

Locative (LOC):

- a place (all uses refer to literal or metaphorical places)

Instrumental (INST):

- a means (bare instrumental expressing means, instrument, path, agent)
- a label (predicate instrumental)
- an adjunct (preposition Cz, R *s*, P *z* 'with')
- a landmark (prepositions of proximal location Cz *před*, P *przed*, R *pered*; Cz/P/R *za*; Cz/P/R *nad*; Cz/P/R *pod*; Cz *mezi*, P *między*, R *meždu*)

The following series of six tables outline how the three languages use this same system in different ways. The noun phrases given in bold face show variations in case use, with the cases used cited below each example. Items marked with a "t" are time expressions and will be revisited in the second analysis. The tables list the most significant case contrasts that differentiate Czech, Polish, and Russian. Less than 20% of possible case contrasts are realized, and they are clustered in six groups showing alternative motivations for expressing perceptions of the "same" reality. In the tables the three languages are presented in the order Czech, Polish, and Russian, iconically representing their geographical distribution, with Czech in the West (left) and Russian in the East (right). The tables are thus iconic maps of the dialect geography of case semantics. It is significant to note that all of the case contrasts are repeated across a range different semantic situations, and all of the case contrasts have both a West vs. East and an East vs. West distribution. In other words, within a given cluster of contrasts there are both examples where case X in the West is contrasted with case Y in the East, and vice versa where case Y in the West is contrasted with case X in the East. For instance, in cluster 1, example set a) shows a distribution of genitive in the West vs. nominative in the East, whereas example set b) opposes nominative in the West with genitive in the East. To summarize: case contrasts are restricted to a small set of clusters, case contrasts are

realized multiple times, and case contrasts show both possible clines of distribution. These combined facts provide compelling evidence that the six clusters represent highly significant cognitive junctures, the "hot spots" where perceptual ambiguity and construal interact most vigorously. An examination of these contrasts will provide insights into how human beings perceive and manipulate ambiguous input, and how these strategies are ultimately sanctioned in grammar. Each cluster will be analyzed in turn below.

Cluster 1

Table 1. Nominative: a name vs. genitive: a reference/a source

Czech	Polish	Russian
a) [T] Today is/Tomorrow will be **the fourth**		
Dnes je/Zítra bude **čtvrtého**	*Dzisiaj jest/Jutro będzie* **czwarty**	*Segodnja/Zavtra budet* **četvertoe**
GEN	NOM	NOM
b) Ivan is older than **I**		
Ivan je starší, než **já**	*Iwan jest starszy niż ja/ode* **mnie**	*Ivan starše* **menja**/ *čem* **ja**
NOM	NOM/GEN	GEN/NOM

Cluster 1 presents the alternatives of simply naming an item as opposed to viewing it as something from which something else is separated, thus acting as a point of reference. Naming and reference are certainly cognitively similar activities, and this contrast is therefore well-motivated. The use of the genitive with dates in Czech (example set a) emphasizes the fact that dates are temporal reference points, whereas the use of the nominative in Polish and Russian merely names dates. The use of the nominative with comparatives in Czech (example set b) sets *Ivan* and *I* on similar footing, whereas the use of the genitive in Polish and Russian designates *I* as a standard value, from which *Ivan* is separated.

Cluster 2[i]

Table 2. Instrumental: a means/a landmark vs. accusative: a destination

Czech	Polish	Russian

a) We walked through **the forest**; The train goes through **the tunnel**		
*Šli jsme **lesem** (/skrz **les**); Vlak jede **tunelem** (/skrz **tunel**)*	**Szliśmy** lasem/**przez** las; **Pociąg jeździ** tunelem/**przez** tunel	*My šli čerez **les(/lesom)**; Poezd edet čerez **tunnel**'*
INST(/ACC)	INST/ACC	ACC(/INST)

b) Maybe you're saving **time**, but you're wasting **money**!		
*Třeba šetříte **časem**, ale plýtváte **penězmi**!*	*Może oszczędzasz **czas**, ale tracisz **pieniądze**!*	*Vy možet byt' èkonomite **vremja**, no vy tratite **den'gi!***
INST	ACC	ACC

c) The fascists were killing people **by the thousands**		
*Fašisté zabíjeli **tisíce** lidí*	*Faszyści zabijali ludzi **tysiącami***	*Fašisty ubivali ljudej **tysjačami***
ACC	INST	INST

d) [T] It lasted **centuries**		
*To trvalo **století***	*To trwało przez **wieki***	*Èto prodolžalos' **vekami***
ACC	ACC	INST

e) Please hang the lamp above **the table**		
*Prosím, pověs lampu nad **stůl***	*Powieś, proszę, lampę nad **stołem***	*Požalujsta, poves' lampu nad **stolom***
ACC	INST	INST

f) [T] We moved here **a year** ago		
*Přestěhovali jsme se sem před **rokem***	*Przenieśliśmy się tutaj **rok** temu*	*My sjuda pereexali **god** nazad*
INST	ACC	ACC

In cluster 2 the accusative case represents an item as the direct target of some action, whereas the instrumental case indicates a more peripheral relationship between an event

and an item. Example sets a) through d) contrast an accusative direct object, the patient of an action, with an instrumental conduit through which the action passes. In example set a), *the forest* and *the tunnel* can alternatively be construed as the paths of motion, or as destinations for motion. In example set b), Czech construes *time* and *money* as the means by which the actions of *saving* and *wasting* are realized. Polish and Russian, on the other hand, treat *time* and *money* simply as the destinations and therefore patients of these activities. The converse is true of example set c), where *thousands* are the patient of *killing* in Czech, but the channel through which *killing* passes in Polish and Russian. Example set c) treats time as a landscape similar to space. If an activity takes place over a duration, as in example set d), the duration can be understood either as a destination for activity (in Czech and Polish), or as a pathway through which the activity passes (Russian). The contrast in example set e) hinges on whether a given language makes a distinction between motion to a destination (marked accusative) and position (marked instrumental) when things are placed in proximal locations. When we move to the domain of time in example set f), the reverse obtains: Czech treats a prior time as a temporal location, whereas Polish and Russian treat a prior time as a destination. These last two example sets demonstrate that languages can treat positioning in two ways, either emphasizing motion or merely stating final location (thus metonymically accessing a path by referring to its endpoint).

Cluster 3

Table 3. Instrumental: a means/an adjunct vs. locative: a place

Czech	Polish	Russian
a) We ride **the train**; We speak **the literary language**		
Jezdíme **vlakem**; *Mluvíme* **spisovným jazykem**	*Jeździemy* **pociągiem**; *Mówimy* **poprawną polszczyzną**	*My ezdim na* **poezde (poezdom)**; *My govorim na* **literaturnom jazyke**
INST	INST	LOC (/INST)
b) [T] in **spring**, in **summer**, in **winter**, at **night**		
na **jaře**, *v* **létě**, *v* **zimě**, *v* **noci**	*wiosną/na* **wiosnę**, *latem/w* **lecie**, *zimą/w*	**vesnoj, letom, zimoj, noč'ju**

	zimie, ***nocą***/*w* ***nocy***	
LOC	INST/LOC (/ACC)	INST

Cluster 3 shows some similarity to cluster 2, since both clusters involve contrasts between items acting as channels for activity (marked instrumental) and items that designate the place where the activity winds up (here marked locative). Since channels are paths, they are also metaphorically locations, and this connection provides the motivation for this contrast. In example set a), for Czech and Polish *the train* and *the literary language* are the paths, or the means (since a path provides a way to go and thus a means for action) for *riding* and *speaking*. Russian, on the other hand, interprets *the train* and *the literary language* as merely the locus of *riding* and *speaking*. Example set b) involves the domain of time, where Russian treats major time periods as paths through which action progresses. Czech, on the other hand, tends to treat major time periods as locations (cf. also Nesset, this volume).

Cluster 4

Table 4. Genitive: a goal/a reference/a whole vs. accusative: a destination (occasionally locative: a place, instrumental: a landmark)

Czech	Polish	Russian
a) The children are walking to **school**		
Děti jdou do ***školy***	*Dzieci idą do* ***szkoły***	*Deti idut v* ***školu***
GEN	GEN	ACC
b) [T] on **that day**; **this year**		
toho dne; ***letošního*** ***roku***	***tego dnia***/*w* ***tym dniu***; ***tego roku***/*w* ***tym roku***	*v* ***ètot den'***; *v* ***ètom*** ***godu***
GEN	GEN/LOC	ACC; LOC
c) [T] during **the communist era**; at **Christmastime**		
za ***komunismu***; *o* ***Vánocích***	*w czasach*/*za* ***komunizmu***; *w* ***Święta*** *Bożego Narodzenia*	*pri* ***komunizme***; *na* ***Rождestvo***
GEN; LOC	GEN; ACC	LOC; ACC
d) I did it for **you**		

Udělala jsem to pro **tebe**	*Zrobiłam to dla* **ciebie**	*Ja èto sdelala dlja* **tebja**
ACC	GEN	GEN

e) He walked past our windows

Prošel mimo **naše okna**	*Przeszedł obok* **naszych okien**	*On prošel mimo* **našix okon**
ACC	GEN	GEN

f) I wish you a pleasant journey

Přeju Vám **šťastnou cestu**	*Życzę wam* **miłej podróży**	*Îelaju vam* **sčastlivogo puti**
ACC	GEN	GEN

g) That's beyond my strength

To je nad **mé síly**	*To jest ponad* **moje siły**	*Èto svyše* **moix sil**
ACC	ACC	GEN

h) The firemen saved all but two

Hasiči zachránili všechny až na **dva**	*Strażacy uratowali wszystkich poza* **dwiema osobami**/*oprócz* **dwóch osób**	*Požarnye spasli vsex krome* **dvoix**
ACC	INST/GEN	GEN

i) [T] **after lunch**

po **obědě**	*po* **obiedzie**	*posle* **obeda**
LOC	LOC	GEN

Cluster 4 contrasts the use of the genitive case as a goal or point of reference with the use of the accusative case to signal a destination. Certainly goals and destinations are cognitively very similar, and this is precisely what we see in example set a), where the goal of motion is marked genitive in Czech and Polish, but accusative in Russian. Example sets b) and c) deal with a similar contrast in the domain of time, though here the locative also appears as an alternative. When we move to the domain of purpose in

example set d), we observe the opposite distribution, where Russian and Polish treat the target of intention as a goal, but Czech treats it as a destination. In example set e), the *windows* serve as a reference point for *passing* in Polish and Russian, but as a destination in Czech. Example set f) involves the domain of emotions and intentions, where Polish and Russian interpret the item sought as a goal, but Czech interprets it as a destination. Example set g) is a metaphorical parallel to example set e), where the domain is scales of measure. Example set h) is cognitively similar to g), but here a list of items (the people needing to be saved) is substituted for a scale. Example set i) contrasts a temporal reference point for a later time with a temporal location.

Cluster 5

Table 5. Accusative: a destination vs. locative: a place

Czech	Polish	Russian
a) play **the piano**		
*hrát na **klavír***	*grać na **pianinie***	*igrat' na **rojale***
ACC	LOC	LOC
b) **What** are you talking about?		
Oč to jde?	*O **co** chodzi?*	*O **čem** idet reč'?*
ACC	ACC	LOC
c) [T] at **six** o'clock		
*v **šest** hodin/o **šesté** hodině*	*o **szóstej (godzinie)***	*v **šest'** časov*
ACC/LOC	LOC	ACC
d) put something on **the table**		
*položit něco na **stůl***	*położyć coś na stole/na **stół***	*položit' čto-to na **stol***
ACC	LOC/ACC	ACC

In cluster 5 a point or object can be alternatively viewed as either a destination or a location (this contrast is intensively investigated for Russian by Nesset and Israeli in this volume; Mitkovska's analysis of Macedonian *na* explores a similar range of semantic possibilities, including some identified in other clusters as well). Again we see either an entire trajectory (acknowledging motion) or just the endpoint (not emphasizing motion).

The cognitive relationship between these two construals is one of metonymy. Whereas Czech understands *playing* as an activity directed toward a musical instrument (example set a), in Polish and Russian the instrument is simply the location of the *playing*. Example set b) presents metaphorical extensions of the accusative and locative case to the domain of ideas and topics of conversation. Here Czech and Polish treat the topic as the destination of discussion, whereas in Russian it is a location. The time when an event takes place (example set c) is understood as a destination for the event in both Czech and Russian, although Czech also permits hours of the day to be locations for actions, as in Polish. All three languages have constructions with the accusative case for the placement of objects on surfaces, emphasizing motion along a trajectory (example set d). Polish additionally allows the use of the locative here, thus referring only to the endpoint of the trajectory.

Cluster 6

Table 6. Dative: a competitor/a receiver/instrumental: a landmark vs. genitive: a goal/a source/a reference

Czech	Polish	Russian
a) I'm not against **that**		
*Nejsem proti **tomu***	*Nie mam nic przeciwko **temu***	*Ja ne protiv **ètogo***
DAT	DAT	GEN
b) I did it for **my family**		
Udělal jsem to kvůli rodině	*Zrobiłem to dla **mojej** rodziny*	*Ja èto sdelal radi **sem'i***
DAT	GEN	GEN
c) [T] I'll be home by **ten** o'clock		
*Přijedu domů do **desáté hodiny***	*Będę w domu przed **dziesiątą***	*Prijedu domoj k **desjati časam***
GEN	INST	DAT
d) They took money from **me**		
*Vzali **mi** peníze*	*Wzięli ode **mnie**/Zabrali **mi***	*Oni vzjali u **menja** den'gi*

	pieniądze	
DAT	GEN/DAT	GEN

e) The deer ran away from the hunter

*Srnka utekla **myslivci***	*Sarna uciekła* **myśliwemu**	*Serna ubežala ot* **oxotnika**
DAT	DAT	GEN

f) I am writing to father

*Píšu **otci***	*Piszę do **ojca***	*Pišu **otcu***
DAT	GEN	DAT

Cluster 6 compares an interaction with an item that exerts a force (dative) with maneuvering or position relative to a salient item (genitive). The subject potential of the dative serves thus as an alternative to the salience of the genitive; in a sense force potential and salience (a sort of attentional force) are equated in this cluster of contrasts. In Czech and Polish the matching force of *I* competes with the force of *that* (example set a), whereas in Russian *that* is the goal of the activity (or non-activity) of opposition. In example set b), the use of the dative in Czech emphasizes the fact that the subject (*I*) is submitting itself to the forces of the *family*, which should be able to react to this selfless devotion (hopefully with appreciation). The use of the genitive in Polish and Russian, however, treats the *family* as the goal for the activity. In the domain of time (example set c), the distribution is reversed: Czech treats the deadline as a goal, whereas Russian treats it as an item that exerts a force to which one must submit, and Polish treats it just as a location. In all three languages, the indirect object that appears with verbs meaning 'give' is marked dative, emphasizing the fact that recipients are typically capable of serving as the subjects of further action (i.e. doing something with what they've been given). As we see in example set d), Czech equates the recipient of 'give' with the person who loses something as a result of 'take', marking both dative, and emphasizing the person's ability to experience the loss. In Russian, however, the person from which something is taken is merely the place from which the thing was taken. Polish allows either construal. Example set e) is very similar to d) in that *the deer* is taking itself (rather than something else) away from *the hunter*. Example set f) is semantically parallel to the indirect object 'give',

where the item given is something written (presumably a letter), and both Czech and Russian interpret it this way, assigning the dative case to the *father*. Polish, however, views the *father* instead as the goal of the *writing*.

Case Contrast Summary

The contrasts between dative and genitive and between genitive and accusative: a destination point to a semantic component of directionality shared by the dative, genitive, and accusative. The contrasts between accusative and locative, between accusative and instrumental, and between instrumental and locative are indicative of the role of metonymy in language, connecting endpoints, paths, trajectories, and locations (metonymy seems to receive less attention from cognitive linguists than metaphor, but note Kövecses & Radden. 1998). Nominative, genitive, and accusative can all be understood as having a referential function. Collectively, directionality, endpoint metonymy, the roles of items in clauses (Are they the means or the destination of action? Do they exert a force or are they salient?), and reference constitute the cognitive "hot spots", the places where various construals have competed for grammaticalization in the case systems of Czech, Polish, and Russian. The image schemas evoked by the various cases facilitate the meaningful comparison of the three languages.

The case systems of Czech, Polish, and Russian present choices of logical alternatives that have been conventionalized differently in the three languages. A contrastive study offers us an opportunity to consider the different ways that people can interpret their perceptions of reality and then sanction these interpretations in their grammar. The choices are not entirely equal, since the selection of one case over another means that certain concepts are emphasized and others are ignored.

The patterns of case contrasts, both in terms of the case meanings contrasted and their geographic distribution, are compelling. The data are anything but random, vindicating the case system analysis proposed at the outset. The cognitive motivations for the contrasts are transparent and meaningful. The geographic distribution is striking. Of the 29 example sets presented in the six clusters, only four (5c, 5d, 6c, and 6f) fail to show a smooth West-East cline. All other case contrasts (the overwhelming majority) show a difference between Czech in the West and Russian in the East, with Polish falling

somewhere between (patterning with either Czech or Russian). This means that semantic dialect geography can be accomplished and can produce significant results. Ultimately it should be possible to add isoglosses marking alternative semantic construals to those marking phonological, morphological, and lexical alternatives in our dialectal atlases.

3. Analysis II: Various Perspectives on Time

Nine of the twenty-nine example sets presented above (nearly a third) refer to time. Each cluster contains at least one time expression. Overall, time is the source of a significant portion of case contrasts across the Slavic languages. As we shall see, variations stem from the implementation of various space => time mappings.

Time is perhaps the only feature of our existence which we all agree exists although we have no direct evidence of its existence. We know time only via observation of present states in comparison with memories of former states. Some of these states have predictable cycles (such as day/night and seasons of the year, as well as other natural processes), permitting us to have the illusion that we are measuring time, but time itself is elusive, more of an abstract construct than a tangible reality.

It seems that all human beings use experiences of space to understand time, despite the obvious shortcomings of the space => time metaphor (for example, space has three dimensions, but time does not; space extends equally in all directions, but time does not; all points in space are equally accessible, but time is accessible only at the unique point of the present moment; we can move around in space, thus mastering it, but we are trapped in time and it masters us; etc.). There are many ways to perform the space => time mapping, as can be seen by comparing languages, or even by comparing time expressions within a single language (for a remarkable cross-linguistic comparison of space => time mappings involving 53 languages, see Haspelmath 1997). We will note that time can be understood in terms of points, lines, paths, spaces, and objects variously arranged with respect to a timeline, which can be conceived of as moving (stationary observer) or stationary (moving observer).

Aspect plays a fundamental role in the understanding of time in Slavic languages, so it is impossible to discuss time expressions without at least a rudimentary look at aspect (Comrie 1976, Binnick 1991; for a comparison across Slavic languages see Dickey 2000). A basic difference between nouns and verbs is that nouns describe items that are

independent of time, whereas verbs describe items (activities and events) that are not independent of time. What Slavic aspect does is to assign all verbal action event status that gives it some independence from time.

In Slavic languages, verbal stems do not exist without aspectual markers -- this means that Slavs do not talk about activity without designating aspect. There is no "pure" activity as such, but rather only events whose shape has been determined by aspect (the few existing biaspectuals are an unstable group and defectively biaspectual at that). We can say simply that aspect performs ontological metaphor (a linguistic process first identified by Lakoff & Johnson 1980) on all activities in Slavic, such that all activities are actually objectified as events, and thus metaphorically manipulable as objects. There are two types of event/objects: perfective event/objects, which are conceived of as occupying time the way that a discrete concrete object occupies space; and imperfective event/objects, which are conceived of as occupying time the way that a substance occupies space (this interpretation builds on and is entirely consistent with the count vs. mass comparison made in Langacker 1987a). Thus Slavic aspect can be understood as a classifier system for verbs, identifying two "temporal shapes" for events. By contrast, in English we worry first about where an activity is located in time -- what sort of event it constitutes is a secondary concern that need not be addressed at all. In Slavic, however, it is obligatory that we determine what sort of event is involved -- its location in time is a secondary concern. The ontological objectification of activities as events makes it possible to conceive of them as separable from the time line. In other words, event/objects have an existence of their own, independent of where they might ultimately be located in time.

This objective existence of events, imposed by aspect, facilitates two cognitive strategies for describing when an event takes place, best illustrated in example set 5c. One strategy parallels English and uses static locational expressions, indicating that a time when something happens is metaphorically equivalent to a place where something is located. The other strategy understands events as objects that can move, and the place where they enter the timeline, their temporal destination, is the time when they happen. It is as if we said in English *She arrived **into** six o'clock, which of course we can't say.

Aspect, in a sense, gives event/objects an identity, enabling motion. This option for an event to move into the timeline is exploited in most of the other example sets involving time, specifically 2f, 3b, 4b, 4c, and 6c. Along with 5c, all of these example sets contrast a conceptualization of an event as an object at a static location with an event as an object arriving at a temporal destination. Time when can be expressed as a location at a place using the following case meanings (as illustrated by the six example sets just cited):

> Locative: a place (3b, 4b, 4c, 5c)
>
> Instrumental: a landmark for proximal locations (2f, 6c)
>
> Genitive: a reference for reference points (4b, 4c, 6c).

Time when can be expressed as a motion to or through a place using the following meanings (also illustrated in the same sets of examples):

> Accusative: a destination (2f, 4b, 4c, 5c)
>
> Instrumental: a means for paths (3b)
>
> Dative: a competitor for movement toward an item (6c)
>
> Genitive: a goal (6c).

The remaining example sets involving time expressions use other alternative strategies for expression. Example set 2d contrasts two kinds of motion for the event/object relative to its duration: one motion is a destinational trajectory through a time period (using the accusative case), and the other is a path serving as a conduit for motion (using the instrumental case). Example sets 1a and 4i contrast various static interpretations of time, opposing Nominative: a name vs. Genitive: a reference and Locative: a place vs. Genitive: a reference.

Perspectives on Time Summary

The Slavic languages have a rich repertoire of conceptualizations of time, illustrating the power of metaphor in grammar and in human cognition. Events can exist before time and move into their slots in time, time can be a series of points with relationships to events and each other. Durations can be represented as paths through a temporal landscape, as bounded areas that contain events, as complex objects that have parts, or even just as

nearby landmarks giving a point of reference. Cognitively we can move toward, away from, behind, along points in time, or even just jump right over them. Through imagination we are able to perform all kinds of manipulations that are physically impossible for us, and much of this superhuman power has been conventionalized in grammars, and specifically in the case semantics of Czech, Polish, and Russian.

A domain like time is understood entirely via metaphor, opening the window to a large amount of variation in cognitive strategies, primarily because there can be many ways to perform a given source => target domain mapping. One can also observe different priorities in the selection of relevant parameters (for example, aspect gives temporal shape higher priority than temporal location).

4. Analysis III: The Recycling of Old Morphology in the Creation of Distinctions within Masculine Gender

Our final analysis is drawn from historical linguistics and its purpose is to illustrate how linguistic entities serve as opportunities over the course of time. This analysis is based upon the concepts and material represented in Janda 1996.

At the dawn of the Slavic era (approximately 1200 years ago), various sectors of the original Indo-European morphology were in trouble among the Slavs. One was the so-called short-u-stem paradigm, which was by that time practically moribund, being associated with only a handful lexemes, all of masculine gender (Diels 1932, Geitler 1877, Lunt 1959, Meillet 1965, Van Wijk 1931). Another was the dual number, characterized by heavy syncretism, for it had only three exponents for the six cases (Derganc 1988, Dostál 1954). Though both paradigms ultimately collapsed (with the exception of some remnants of the dual in Sorbian and Slovene), their morphology was not wasted -- the morphemes of these paradigms have been extremely productive, and have been used to increase the number of distinctions available for masculine nouns (the inherited IE o-stem paradigm). Slavs (particularly those in the North) have spent the past millenium redeploying short-u-stem morphology to create additional distinctions within masculine gender, as part of a larger project that also included the creation of animacy distinctions by other means.

Basically, several things happened in an overlapping fashion. 1) an animacy distinction was developed to distinguish the Asg from the Nsg for animate masculine

nouns; 2) the short-u-stem paradigm collapsed and the former short-u-stem nouns were reinterpreted as o-stem nouns which had some alternative "extra" desinences, the remnants of the collapsed paradigm. These "extra" desinences were interpreted as providing new distinctive meanings for masculine nouns within the context of animacy and became very productive; 3) the dual number was lost, but dual desinences survived as alternative non-singular markers and facilitated the creation of a GApl.

The sample of North Slavic languages that we have been using so far -- Czech, Polish, and Russian -- is representative for this comparison as well, so we will continue to use these three languages to illustrate the results of this set of historical changes.

As we've already noted, all three changes are part of one big project, one that has been going on for a thousand years and is clearly still in progress -- an example of drift. The subconscious game plan that unites these changes is the creation of a range of figure-ground salience distinctions for masculine nouns, reaching from viriles (male human beings) at the highest end of the scale, through non-virile animates, inanimate discrete nouns, and finally at the lowest end non-discrete items such as substances, landscape features, and intangibles. Table 7 below presents the lexemes that originally belonged to the short-u-stem paradigm, arranged according to their position on the figure-ground scale.

Table 7: Lexemes that originally belonged to the short-u-stem paradigm

Semantic classification	List of lexemes	Associations with spread of short-u-stem endings
Virile Kinship Term	*synŭ* 'son'	Associated with Czech Npl -*ové*, D(L)sg -*ovi*; Polish Npl -*owie*
Non-Virile Animate	*volŭ* 'ox'	Associated with Czech Npl -*ové*, D(L)sg -*ovi*
Discrete Inanimate Objects	[No Items]	[No Associations]
Masses	*medŭ* 'honey', *ledŭ* 'ice', *ědŭ* 'poison', *grozdŭ /groznŭ*	Associated with Czech, Polish, and Russian Gsg -*u*

	'grapes', do7bŭ 'oak', *olŭ* 'ale', *grŭmŭ* 'bushes'	
Locations	*vĭrxŭ* 'summit', *domŭ* 'house', *stanŭ* 'camp', *sadŭ* 'garden', *rędŭ* 'row', *synŭ* 'tower', *mirŭ* 'world'	Associated with Czech, Polish, and Russian Lsg *-u*
Abstractions/ Intangibles	*činŭ* 'rank', *sanŭ* 'rank', *darŭ* 'gift', *rodŭ* 'clan', *grĕxŭ* 'sin', *polŭ* 'half', *mirŭ* 'peace'	Associated with Czech, Polish, and Russian Gsg *-u* and Lsg *-u*

We will focus our attention on the short-u-stem endings that survived the collapse of their paradigm. The few nouns that were associated with the old short-u-paradigm were absorbed into the o-stem masculine paradigm, but retained the old u-stem endings as extra desinences, apparently used primarily in constructions that were particularly characteristic for those nouns. The list of original short-u-stem nouns is not very long, but it is peculiar in that it completely lacks any words that designate small, discrete manipulable objects of definite form. In other words, there were no nouns associated with the "extra" short-u-stem endings that represented the mid-portion of the figure-ground scale. All nouns refer to items that are at one extreme or the other. There is the virile kinship term meaning 'son', the non-virile animate 'ox', and then all the remainders are at the very bottom of the scale. For example, about 30% of these presumed old short-u-stems are mass nouns, which would have been used primarily in the genitive singular case in constructions with quantifiers. This motivated an association of Gsg *-u* with mass nouns. Another 30% of original short-u-stem nouns name locations, motivating the association of Lsg *-u* with names for locations. The remaining short-u-stem nouns (nearly

another 30%) named abstractions and intangibles, and were also associated with Gsg *-u* and Lsg *-u*.

To make a long story short, the old short-u-stem endings were redeployed to create new distinctions at either end of the figure-ground scale, and here is where we see languages taking advantage of cognitive opportunities over the course of their histories. The Npl ending, originally associated with the nouns meaning 'son' and 'ox' (because the other short-u-stem nouns either had no plurals or were unlikely to occur in the plural) was realized as *-ové* in Czech, where it spread mostly to virile nouns, but also to some non-virile animates. The Polish version of this Npl desinence, *-owie*, is used to designate only masculine kinship terms, personal names, and high-status viriles (eg. exalted professions), as opposed to neutral viriles (most nouns referring to male humans), and low-status viriles (where the non-virile morphology can be used pejoratively; Dunaj 1992, Rospond 1971). The dative case is strongly associated with human beings (since it presumes the ability to react to whatever has been received or experienced), and Czech has spread the original short-u-stem Dsg ending, *-ovi*, to mark all animates (with a secondary spread of this ending to the Lsg; Vážný 1970). Russian has not spread either of these endings, but retained only relics of them in the Npl *synov'ja* 'sons' and adverb *domoj* 'homeward' (derived from an earlier Dsg *domovi*; Gorškova & Xaburgaev 1981). Although the Gsg *-u* and Lsg *-u* have been productively spread in all three languages, in Polish Lsg *-u* was ultimately spread for phonological purposes, to distinguish soft stems from hard stems. In all other instances, however, these languages have capitalized on the semantic opportunities available here. In Czech Lsg *-u* and Gsg *-u* are used for typical expressions of those two cases. In Polish, Gsg *-u* is associated with inanimates that are not discrete countable concrete objects (i.e., masses, landscape features, and intangibles; Westfal 1956). Russian uses both Lsg *-u* and Gsg *-u* with locations and masses lacking internal differentiation (i.e., if a location is just a place for finding something else or a mass is just a quantity of something, not if we are really interested in some fact about the location or mass; Šaxmatov 1957, Unbegaun 1935).

Recycling morphology summary

To conclude this brief analysis of a historical linguistic data, we find that defunct morphology can present cognitive opportunities. Existing semantic associations can be conventionalized and spread productively via the mechanisms of analogy. In this fashion, yesterday's trash can literally become today's treasure when linguistic units are exploited to express semantic distinctions.

5. Conclusion: Generalizations based upon the three analyses

Overall, we have seen that the "same" linguistic material may be deployed differently over dimensions of space (geography) and time (diachrony). The same cases can be utilized differently by different related languages, and the morphology once used just to distinguish cases in the old-u-stem paradigm, after it was inherited by the o-stems, was over time pressed into service to make new semantic distinctions. In these ways, linguistic forms such as case endings provide varying cognitive opportunities for expression. Wherever variation exists, language strives to attach and enhance semantic distinctions. Languages are like the proverbial pack-rats -- they keep a lot of stuff around and try to figure out what it's good for. This drive for semantic order observed in language is probably indicative of processes characteristic of human cognition, since language is the most immediate artifact of human cognition available to us for inspection.

Cognitive linguistics is particularly apt in analyses such as these because it enables us to get a good focus on large issues and make broad comparisons without denying the real complications involved. In other words, cognitive linguistics allows us to find the cognitive creativity in the very real clutter of very real data. As cognitive linguists we wield a formidable tool, one that gives us powerful insights into the workings of both language and mind.

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[i] Here and elsewhere parentheses indicate less common variants.