Final Report for Period: 09/2007 - 08/2008   **Submitted on:** 07/09/2009

Principal Investigator: Partee, Barbara H.   **Award ID:** 0418311

Organization: U of Massachusetts Amherst

Submitted By:

Partee, Barbara - Principal Investigator

Title:

The Russian Genitive of Negation: Integration of Lexical and Compositional Semantics

Project Participants

Senior Personnel

     Name: Partee, Barbara

     Worked for more than 160 Hours: Yes

     Contribution to Project:

Centrally involved in all aspects of the project. Supported by this grant for 70% effort for 1 summer month in Moscow each of years 1-3. Author or co-author of most of the principal publications connected with the project. Leader of research meetings in Moscow during spring semester 2005, summer 2006, spring and summer 2007. Supervisor of Research Assistants and leader of research meetings at UMass Amherst Fall 2005, 2006. Lead responsibility for planning and organizing of project.

     Name: Borschev, Vladimir

     Worked for more than 160 Hours: Yes

     Contribution to Project:

Also centrally involved in all of the activities and results of each year. Supported by this grant 12.5% effort 4 months in Amherst (=.5 mo acad); 20% effort 4 months in Russia (=.8 mo acad); and 70% effort 1 month summer in Russia (= .7 mo summer), each of years 1-3. Co-author with Partee of most of the principal publications connected with the project. Active participant in all research meetings in Amherst and Moscow.

Post-doc

Graduate Student

     Name: Jeschull, Liane

     Worked for more than 160 Hours: Yes

     Contribution to Project:

Liane Jeschull, a visiting graduate student from the University of Leipzig spending 2004-05 at the University of Massachusetts, was a Research Assistant on the project for 300 hours in the Spring Semester of 2005. Approximately half her time was spent assisting the PI with bibliographic work, with communication between Amherst and Moscow, and with other related assistance to the PI. The other half of her time was spent carrying out research on the relationship between the Russian Genitive of Negation construction and the semantics of verbal aspect in transitive predicates. See Activities.

     Name: Verbuk, Anna

     Worked for more than 160 Hours: Yes

     Contribution to Project:

Anna Verbuk, a Ph.D. student at the University of Massachusetts, Amherst, served as a Research Assistant on the project for 80 hours in the Summer of 2005 and for 380 hours in the Spring semester of 2006. In the Summer of 2005 approximately half her time was spent assisting the PI and co-PI with bibliographic work, checking Russian data, and other related assistance, and half on a research project on the acquisition of the semantics of Russian ili 'or' in positions under the scope of negation. She also spent 13 days in Moscow during Spring semester 2005, where she presented a paper in a grant-related workshop and consulted with Russian linguists and native speakers on several topics in Russian syntax and semantics. In the Spring of 2006, she spent about 25% of her time assisting the PI and co-PI long-distance during their semester in New Zealand, and about 75% of her time on completing and writing up her project on Russian ili. See more under Activities and Findings.

     Name: Moulton, Keir

     Worked for more than 160 Hours: Yes

Contribution to Project:

Keir Moulton, a Ph.D. student at the University of Massachusetts, Amherst, served as a Research Assistant on the project for 80 hours in the Summer of 2005, 40 hours in the Summer of 2006, and 380 hours in the Spring Semester of 2007. In Year 1, his principal contribution was to help the PI and co-PI investigate the hypothesis that the Genitive of Negation construction involves a 'weakening' of the semantics of the Genitive-marked NP, in comparison to corresponding Nominative and Accusative-marked NPs, by searching for work on analogous phenomena in other languages. Part of his time was spent on his own related research on the semantics of intensional-object constructions. In Years 2 and 3, he assisted the PI with grant-related administrative duties, including and gathering material for the annual reports, and with website improvement and updates. In Year 2, he pursued research on the interaction between the lexical semantics and syntax of inherently reflexive verbs (Reinhart and Reuland 1996), concentrating on self-action predicates (Klaiman 1991). He worked on testing a hypothesis that the semantics of such predicates is not derived compositionally (contra Reinhart and Siloni 2005) but a property of certain verb roots, and investigated why such lexical properties of roots (sometimes) leads to certain syntactic properties shown by reflexive constructions, such as unaccusativity. In Year 3, he continued work on lexical semantics of ECM ('Exceptional Case Marking') predicates, both those that take reflexive ECM objects and other classes of ECM predicates, focusing on lexical semantic differences between verbs that take ECM and those that do not. See more under Activities, and Publications.

Name: Zabbal, Youri

Worked for more than 160 Hours: No

Contribution to Project:

Youri Zabbal, a Ph.D. student at the University of Massachusetts, Amherst, served as a Research Assistant on the project for 80 hours in the Summer of 2005. Approximately half of his time was spent helping the PI and co-PI develop a website for the project. The other part of his time was spent on his own related research on the semantics of proper names when they are coerced into 'weak' readings in various constructions in various languages, something which seems to happen in the Genitive of Negation construction, where it constitutes an unsolved problem for most theories of the semantics of Genitive of Negation. See more under Activities.

Name: Schwarz, Florian

Worked for more than 160 Hours: Yes

Contribution to Project:

Florian Schwarz, a Ph.D. student at the University of Massachusetts, Amherst, served as a Research Assistant on the project for 380 hours in the Fall of 2005 and 380 hours in the Fall of 2006. He helped to organize the NSF project meetings held in Fall 2005 and Fall 2006 at UMass and assisted the PI in bibliographic and other research-related matters. His principal contribution has been a study of intensional transitive verbs, which may directly relate to the Genitive of Negation construction, as proposed by Neidle and most recently in Olga Kagan's work. He presented this work at SALT 16 in Tokyo, Japan, and at the Milan Meeting 2006. In Year 3 he continued his investigation of intensional transitive verbs by means of an eye tracking study designed to test the theoretically argued differences between verbs like 'need' and 'look for'. He also initiated a new research project concerning two types of definite descriptions in German, differing in their ability to function as anaphors, which grew into his dissertation, completed in 2009 after the grant was finished. A separate project was a self-paced reading study investigating the impact of presupposed content on semantic processing. See more under Activities, Findings, and Publications. Update: Florian Schwarz has been appointed Assistant Professor of Linguistics at the University of Pennsylvania beginning in Fall 2009.

Name: Deal, Amy Rose

Worked for more than 160 Hours: No

Contribution to Project:

Amy Rose Deal, a Ph.D. student at the University of Massachusetts, Amherst, served as a Research Assistant on the project for 80 hours in the Summer of 2006 and 70 hours in the Summer of 2007. Her main contribution to the project was an investigation of 'weak' objects in the so-called antipassive construction in Nez Perce, an endangered Penutian language. This research involved both work from grammars and corpora and a field trip to obtain more nuanced semantic data in July 2006. Similarities between antipassive constructions and the Russian Genitive of Negation have been argued for by Bittner (p.c. to P.I.), whose work on antipassives in Greenlandic Eskimo was discussed in a Fall 2005 project meeting at UMass (see Activities section). Her contributions to the project are further reflected in talks and publications listed in this report.

Name: Rubinstein, Aynat

Worked for more than 160 Hours: No

Contribution to Project:

Aynat Rubinstein, a Ph.D. student at the University of Massachusetts, Amherst, served as a Research Assistant on the project for 45 hours in the Summer of 2006 and 46 hours in the Summer of 2007. Approximately one quarter of her time was spent on

assisting the PI with grant-related administrative duties. The majority of her time was dedicated to her own related research on lexical and compositional aspects of the semantics of reciprocal verbs. At the heart of this project lies the alternation that relates non-reciprocal transitive verbs to two reciprocal constructions in Russian, English, and other languages. She investigated the properties of comitative phrases in reciprocal constructions, and tested their relationship to the event semantics of high applicatives (Pylkka'nen 2002). In 2007 she pursued her hypothesis that group events play a substantive role in the semantics of reciprocal verbs. Her main task was to examine to what extent existing proposals about event grouping or conjunction in other parts of the grammar (e.g. Artstein 1997, Reich (to appear)) resemble reciprocalization. The ultimate goal of this research is to formulate the arity operation of reciprocalization that relates non-reciprocal transitive verbs to reciprocal verbs (in both intransitive and transitive reciprocal constructions).

of Massachusetts, Amherst, served as a Research Assistant on the project for 46 hours in the Summer of 2007. She pursued her hypothesis that group events play a substantive role in the semantics of reciprocal verbs. Her main task was to examine to what extent existing proposals about event grouping or conjunction in other parts of the grammar (e.g. Artstein 1997, Reich (to appear)) resemble reciprocalization. The ultimate goal of this research is to formulate the arity operation of reciprocalization that relates non-reciprocal transitive verbs to reciprocal verbs (in both intransitive and transitive reciprocal constructions).

Name: Farudi, Annahita

Worked for more than 160 Hours: No

Contribution to Project:

Annahita Farudi, a Ph.D. student at the University of Massachusetts, Amherst, served as a research assistant for 80 hours in the summer of 2007. She investigated a particular construction in Persian (Farsi) in which the syntactically nonverbal component of a complex predicate, independent of the inflected light verb element, is modified adjectivally or by being relativized on in a way that is syntactically parallel to nominal modification in Persian. Specifically, she worked on the semantic differences between employment of this modification strategy, as opposed to normal adverbial modification, a difference which involves information structure considerations. In looking at the existence of this construction in a language that has both complex predicates and `pseudo-incorporated' nonspecific objects, Annahita aimed also to approach from a different perspective the issue of the referentiality of the NPs in Russian Gen Neg, which are in considered by Partee and Borschev to be essential to understanding the scope of negation.

Name: Hiraga, Misato

Worked for more than 160 Hours: No

Contribution to Project:

Misato Hiraga, a Ph.D. student at the University of Massachusetts, Amherst served as a research assistant for 80 hours in the summer of 2007. She investigated Japanese nouns and pronouns and their referentiality. Her special interest is the syntactic and semantic nature of referential third person pronouns and their interaction with demonstratives.

Undergraduate Student

Name: Lastovkina, Galina

Worked for more than 160 Hours: No

Contribution to Project:

In the Fall semester of Year 1, Galina Lastovkina helped the PI and co-PI with some exploratory corpus searches of several Russian corpora, studying the alternation of Genitive and Nominative and of Genitive and Accusative with various classes of verbs and with variation of several other relevant parameters.

Research experience for undergraduates was not a planned part of this project, but it happened that one of Partee's very good undergraduate students from her 'mathematics for linguists' course who happens to be a native speaker of Russian, Galina Lastovkina, inquired of Partee (and other faculty) at the start of the Fall semester 2004 whether we had any possible research projects that she might help us with and earn a little money at the same time. It was serendipitous timing, and we happily took her on to help us with some initial trial 'Google' searches for certain kinds of Genitive of Negation sentences that we were then working on. Her first assignment was to read about our project ? the grant proposal and several key articles ? and discuss with us some of the key ideas that were new to her. Her second assignment was to learn something about existing Russian corpora and to compare some trial searches on existing corpora with trial searches on Google. As the semester progressed, she became proficient and was able to begin developing some hypotheses of her own to test further. She was away on exchange study in Year 2 of the

project, but we hope to employ her again in Year 3, with responsibilities increasing as her research skills and linguistic sophistication increase.

Technician, Programmer

Other Participant

Name: Paducheva, Elena

Worked for more than 160 Hours: Yes

Contribution to Project:

180 hours consulting during spring semester in Moscow in Year 1, 180 hours during January and summer Year 2, 180 hours spring and summer Year 3. Active participation in research meetings in Moscow, presentation of papers at conferences, co-author with P.I.s of three papers, author of several others on project topics. A crucial member of the research team. Has contributed original ideas concerning the lexical and compositional semantics of the Genitive of Negation construction and related constructions in Russian, and critical comparative evaluation of American and Russian theoretical work on synthesis of lexical and formal semantics. Paducheva is a senior and highly respected Russian semanticist and an expert on this construction in particular, and her participation is central in building ties between Russian and Western semantics. See Activities, Findings, Publications.

Name: Rakhilina, Ekaterina

Worked for more than 160 Hours: Yes

Contribution to Project:

180 hours consulting during spring semester in Moscow in Year 1, 180 hours during January and summer Year 2, 160 hours spring and summer Year 3. Active participation in research meetings in Moscow, presentation of papers at conferences. She is playing a leading role in studying previous corpus-based work on the Russian Genitive of Negation by Mustajoki and others, and is doing new corpus work with the Russian National Corpus, of which she is one of the developers. Rakhilina, until July 2007 Head of the Department of Linguistic Research of VINITI (the institute of the Russian Academy of Sciences where Paducheva and Borschev also work), is a senior and highly respected Russian semanticist with close ties to the Cognitive Linguistics community in France and Europe, and active in the mentoring of the next generation of Russian semanticists; her participation is also central in building ties between Russian and Western semantics. Taught a seminar on Genitive of Negation at Russian State Humanities University (RGGU) in Year 2, emphasizing the use of corpus work in semantics, and in Year 3 edited a collected volume of papers on Genitive of Negation by her students and by members of this project which appeared in Year 4. See Activities, Findings, Publications.

Name: Testelets, Yakov

Worked for more than 160 Hours: Yes

Contribution to Project:

180 hours consulting during spring semester in Moscow in Year 1, 180 hours during January and summer Year 2, 180 hours during spring and summer Year 3. Active participation in research meetings in Moscow, presentation of papers at conferences, co-author with P.I.s of three papers. He is a leading Russian syntactician, typologist, and field linguist, and has helped to introduce the younger generation of Russian linguists to contemporary generative grammar, while pointing out problems for current theories posed by facts of Slavic, Caucasian, and other language families. He is the most senior syntactician on our project, and has been crucial in helping us to evaluate competing approaches to the syntax-semantics interface for the Genitive of Negation construction and related constructions and in working out the syntax of different kinds of Russian sentences with 'null BE'. His participation has been central both to connecting semantics with syntax and to building ties between Western and Russian linguistics. See Activities, Findings, Publications.

Name: Yanovich, Igor

Worked for more than 160 Hours: No

Contribution to Project:

8 days consulting during spring semester in Moscow in Year 1, 8 days summer Year 2. Yanovich is a young Moscow linguist specializing in semantics and syntax. He played a leading role in developing the new arguments concerning constituent vs. sentential negation in our group's 5-authored presentation for FASL 14, and was also one of the main founders and organizers both of the Fall 2004 Semester semantics reading group in Moscow and of the annual workshop Formal Semantics in Moscow, held in Spring 2005, 2006, 2007. 2008. He was also a co-author with the PI's of two other papers. Starting in Fall 2009, he is a Ph.D. student at M.I.T. (see Activities, Findings, Publications, and other sections).

Research Experience for Undergraduates

Organizational Partners

Russian Academy of Sciences

The co-P.I. (Borschev) and two of the main Russian consultants on the project (Paducheva and Rakhilina) have all been research scientists at the Russian Institute for Scientific and Technical Information (VINITI) of the Russian Academy of Sciences for many years(Borschev full-time in Years 1 and 2, half-time starting in Year 3; the others full-time). Rakhilina has been the Head of their department, the Department of Linguistic Research, for several years.

In mid-June 2007, near the end of Year 3 of the project, that Department was put out of existence, Rakhilina's position was terminated, and Borschev and Paducheva were reassigned to a different department. All three are still as much involved in the grant project as ever, but the project only sporadically used any VINITI facilities after mid-June 2007.

During the 7 months of years 1 and the 4 months of year 2 when the P.I. was in Moscow, and from January through early June 2007 in year 3, almost all of the weekly research meetings were held at VINITI. That ended in mid-June 2007. From then until the end of the grant period in year 4 (and in fact beyond), research seminar meetings were mainly held in participants' homes.

(No official organizational partnership; VINITI bureaucracy was not involved at any stage.)

Other Collaborators or Contacts

1. Informal collaboration with other faculty, graduate students, and visitors at the University of Massachusetts. UMass linguists are familiar with our research in this area through prior colloquia, discussions, grant seminar meetings at UMass in the Fall semesters, and our papers on this topic.
2. The co-PI and two of the three official consultants have been senior researchers at VINITI, the All-Russian Institute of Scientific and Technical Information, an Institute of the Russian Academy of Sciences in Moscow; most of the scientific seminar meetings that we have held in 2005, 2006 and 2007 and have taken place there. (As of the end of the grant, Paducheva is still full-time at VINITI, co-PI Borschev is half-time, and Rakhilina is no longer at VINITI.) In addition to these regular meetings, we have had informal discussions on this and related topics with other Russian colleagues in Moscow, some of whom have become more actively involved in the project, especially Igor Yanovich.
3. In Year 1, Partee interacted with students and faculty attending her Fulbright lectures at Moscow State University and Russian State University for the Humanities, where she included in both courses a number of lectures relating to negation, diathesis shift, negative polarity phenomena, and the Genitive of Negation. Partee and Borschev interacted for two weeks with students and faculty attending the New York Institute in Cognitive and Cultural Studies at the University of St. Petersburg in July of 2005. In both places we had opportunities to discuss our work on the Genitive of Negation and our perspectives on the potential for integration of western formal semantics with Russian lexical semantics. We also had further interesting interactions with the American syntactician John Bailyn in St Petersburg; Bailyn is one of the main specialists on the syntax of the construction, and we are working on its semantics; we have learned quite a lot from each other.
4. In Year 1, during the Partee's participation in the KNAW workshop in Amsterdam, she had a chance to interact with David Beaver, who has recently been working on existential sentences in a number of languages and who had interesting reactions to our work on Genitive of Negation. She also had a chance to learn more about Optimality-Theoretic work in semantics, which could prove very relevant to this problem area. In Year 2, Partee corresponded and exchanged papers with Dmitry Levinson, a Russian graduate student at Stanford working with Beaver and Paul Kiparsky on topics that include the Genitive of Negation.
5. In Year 1, during Partee and Borschev's two-week lecture series trip to Spain, we consulted with Louise McNally at the University of Pompeu Fabra in Barcelona. Her work on property-type interpretations of weak NPs in existential sentences and elsewhere has been one important source of ideas for our work on weak interpretations of Gen-Neg NPs in Russian.
6. In Year 1, during the conference participation by Partee, Borschev, and Paducheva in Israel reported in the Activities section, we had a chance to consult further with colleagues Hana Filip, Hans-Robert Mehlig, Susan Rothstein, and Malka Rappaport Hovav, all of whom have worked on topics that intersect with the problems of the Genitive of Negation. Interactions with these colleagues continued in Year 2 as we prepared our papers for the conference volume and critiqued and commented on one another's papers.
7. In Year 2, Partee and Borschev interacted with colleagues in Georgia (the country) and other international participants at a conference on Logic and Language in Batumi, where we presented a paper on our work on this project. This was Partee's third visit to Georgia, and our relations with a number of colleagues there have become quite close. Partee has on a number of occasions in years 1 and 2 found ways to help with the professional development of formal linguistics in Georgia and with the international recognition of some of the leading Georgian linguists (including the election of the President of the Georgian Academy of Sciences, the linguist Thomas Gamkrelidze, as a foreign honorary member of the National Academy of Sciences, nominated by Partee and elected in 2006.) In Year 4, Partee is Co-Chair of the Program Committee of the 8th Tbilisi Symposium on Language, Logic and Computation.

8. In Year 2, Ljudmila Geist of the University of Stuttgart visited our project in Moscow and we met together with her to discuss her work on the semantics of indefinite and definite NPs and our work, and had continuing correspondence in Year 3.

9. In Year 3, the PI helped put our UMass Research Assistant Aynat Rubinstein in contact with PI's Moscow student Peter Staroverov, both of whom were working on the formal semantics of reciprocal constructions in several languages. They had a fruitful correspondence and exchange of work in progress.

<h2 style="text-align:center">Activities and Findings</h2>

Research and Education Activities: (See PDF version submitted by PI at the end of the report)
See separate Activities pdf file.

Findings: (See PDF version submitted by PI at the end of the report)
See separate Findings pdf file.

Training and Development:
 The project makes a direct contribution to professional development of the Research Assistants, who work with the P.I. and also have opportunities to develop subprojects of their own which in a number of cases lead to conference presentations and publications.
 International training and development were promoted by our (Partee and Borschev) associated lecture series on the topic of the project in Spain and our two-week short course in a summer school in Cognitive Science and Cultural Studies organized by John Bailyn and Russian colleagues in St. Petersburg in Year 1.
 Partee has taught formal semantics at RGGU or MGU in Moscow almost every spring semester since 1998, and both at RGGU and MGU (under a Fulbright grant) in Spring 2005. The research of the grant has figured in these courses, including during the three years when the proposal was being written and revised, and students have contributed useful ideas on a number of occasions. As part of her activities in Moscow, Partee has been helping advanced students and young faculty make increased contact with western colleagues and gain greater access to western linguistic literature, and has helped Russian colleagues and students with the art of writing abstracts for western conferences, and with editing the English versions of their handouts and papers. The student-organized Formal Semantics Reading Group in Moscow in Fall 2004 and the First through Fourth Annual Workshops on Formal Semantics in Moscow in April 2005, April 2006, April 2007, and April 2008 (described in 'Activities') attest to the increasing numbers of students in Russia who are becoming well-versed in formal semantics, and more generally familiar with contemporary Western as well as Russian work in linguistics. At the May 2005 meeting of Formal Approaches to Slavic Linguistics (FASL 14) in Princeton, a record number of young Russian linguists were authors or co-authors of presented papers, and most of those had been students in Partee's Moscow classes at some time or had to some degree been mentored by Partee. Young Russian linguists have increasingly achieved full participation in international conferences in the US, Europe, and elsewhere, becoming conversant with Western theoretical approaches and standards while continuing to develop what have been the strengths of Russian linguistics. Five of Partee's Moscow students were admitted to top US Ph.D. programs in Fall 2008; more on this below.
 One young Moscow linguist, Igor Yanovich, came up with one of the main ideas that led to our 5-author FASL 14 paper, Borschev et al (2006), and became a junior consultant on our grant. (Partee was co-advisor on Yanovich's undergraduate thesis at MGU in Year 1.) Yanovich reports on the value of the grant-related work for his professional development as follows: 'The work on Genitive of Negation, numerous discussions on problematic issues, and especially the work on the joint paper Borschev et al. (2006) with the four co-authors and the international interaction by correspondence with senior researchers as Laurence Horn (Yale) and Kai von Fintel (MIT) on the problems addressed in this paper has broadened my linguistic interests and has increased my qualification as a researcher. Moreover, since the five authors assume rather different frameworks and theoretical systems, the work on the paper was a great experience of integrating insights formulated in such different traditions as, for instance, that of Russian semantics and of Western formal semantics, into a single analysis. ... If not for the grant support (consulting and travel money), I would not have the possibility to visit SALT 15 at UCLA and FASL 14 at Princeton. These conferences have given me an opportunity to present my findings, as well as to learn about recent findings of other researchers in the field and to get acquainted with fellow scientists from all over the world.' Yanovich is a promising young scholar, and the grant is simultaneously benefiting his development and helping to increase the dissemination of his valuable research results to the broader research community.
    In Year 3, Yanovich was again responsible for one of the leading ideas in our second five-authored paper, for FASL 16 in May 2007 at Stony Brook, publication in progress, and again was able to make the trip to the US to help present the paper.
    In Year 2, Partee's teaching at the University of Canterbury in New Zealand brought formal semantics to a new audience of students and auditing faculty, and the topics of both the current grant project and our previous project on the semantics of possessives figured prominently in the syllabus.
    Also in Year 2, Rakhilina's seminar on the Genitive of Negation at RGGU (see Educational Activities) offered good training to her students

in how to carry out and present original research; in their workshop presentation to the project group, it was clear that for some of them it was their first experience in preparing a handout for a public lecture, and the admirable professionalism of the most advanced of them provided an excellent model for the novices.

In Year 3, the results of the grant research figured centrally in the formal semantics course that Partee taught in the spring semester at MGU.

An important 'training and development' contribution of the new series of annual workshops Formal Semantics in Moscow (see Activities), co-organized by our junior consultant Igor Yanovich and mentored by Partee, is the spreading of high Western standards of scientific conference organization, including good abstract-writing practices and blind peer reviewing of abstracts, within the Russian linguistic community.

During Year 3, Igor Yanovich and four other students who had studied with Partee in Moscow (Liudmila Nikolaeva at RGGU and three others at MGU) applied and were admitted to several top linguistics Ph.D. programs in the U.S.. In Fall 2008, Yanovich and three others entered the Ph.D. program at M.I.T. and one entered the Rutgers Ph.D. program.

The grant also helps the three Russian consultants attend conferences in Europe and/or the U.S, primarily for the purpose of disseminating the work of the project. But in addition, the contacts and ideas they gain at such conferences enrich their teaching and mentoring of Russian students and young colleagues. Interactions between Russian and Western researchers and advanced students are becoming steadily more common, and have clearly been helped by the previous grant to Borschev and Partee (990578) and by the present one.

Outreach Activities:

The project contributes to US-Russian scientific understanding and cooperation through the participation of the Russian consultants on the project, the increasing interaction among Russian and Western scholars described in other parts of this report, and the scientific activities of the P.I. and co-P.I. in Moscow for part of every year.

Journal Publications

Paducheva, Elena V., "Effekty snjatoj utverditel'nosti: global'noe otricanie. (Effects of weakened assertiveness: global negation.)", Russkij Jazyk v Nauchnom Osveshchenii, p. 17, vol. 10.2, (2005). Published,

Paducheva, Elena V., "Eshche raz o genitive sub"jekta pri otricanii (Once more about Genitive of Subject under Negation)", Voprosy Jazykoznanija, p. 84, vol. 2005.5, (2005). Published,

Testelets, Yakov G., "Review of Karimi S., ed., Word Order and Scrambling, 2003. Oxford:Blackwell", Voprosy jazykoznanija, p. 121, vol. 4, (2005). Published,

Paducheva, Elena V., "Genitiv dopolnenija v otricatel'nom predlozhenii. (Genitive of Object in negative sentences)", Voprosy Jazykoznanija, p. 21, vol. 6, (2006). Published,

Borschev, Vladimir, "Nacional'nyj korpus russkogo jazyka - komu eto nuzhno? [Russian national corpus - who needs it?]", Nauchno-Tekhnicheskaja Informacija, Seria 2 [Scientific and Technical Information, Series 2], p. 44, vol. 40.11, (2006). Published,

Schwarz, Florian, "Processing presupposed content", Journal of Semantics, p. 373, vol. 24, (2007). Published, 10.1093/jos/ffm011

Borschev, V.B., "Sistema LINGUIST List - osnovnoj mirovoj lingvisticheskij resurs [The LINGUIST List system - a fundamental worldwide linguistic resource]", Nauchno-Tekhnicheskaja Informacija, Seria 2 [Scientific and Technical Information, Series 2], p. 22, vol. 42.6, (2008). Published,

Deal, Amy Rose, "Ergative case and the transitive subject: a view from Nez Perce", Natural Language and Linguistic Theory, p. , vol. 27, (2009). Accepted,

Paducheva, E.V., "Locative and existential meaning of Russian byt'", Russian Linguistics, p. 147, vol. 32.3, (2008). Published,

Constant, Noah, Christopher Davis, Christopher Potts, and Florian Schwarz, "The pragmatics of expressive content: Evidence from large corpora", Sprache und Datenverarbeitung, p. , vol. , (2009). Accepted,

Books or Other One-time Publications

Fedorova, O. and I. Yanovich, "Early preferences in relative clause attachment: The effect of working memory differences", (2006). article in book, Published
Editor(s): James Lavine, Steven L. Franks, Mila Tasseva-Kurktchieva and Hana Filip
Collection: Formal Approaches to Slavic Linguistics: The Princeton Meeting 2005 (FASL 14)
Bibliography: Michigan Slavic Publications, Ann Arbor, pp 113-128

Paducheva, Elena V. and Mati Pentus, "Formal and informal semantics of telicity", (2008). article in book, Published
Editor(s): Susan Rothstein
Collection: Theoretical and Cross-linguistic Approaches to the Semantics of Aspect
Bibliography: Amsterdam: John Benjamins. pp. 191-215

Partee, Barbara H., "Negation, Intensionality, and Aspect: Interaction with NP Semantics", (2008). Chapter in book, Published
Editor(s): Susan Rothstein
Collection: Theoretical and Cross-linguistic Approaches to the Semantics of Aspect
Bibliography: Amsterdam: John Benjamins. pp. 291-317

Partee, Barbara H. and Vladimir Borschev, "The semantics of Russian Genitive of Negation: The nature and role of Perspectival Structure", (2004). Chapter in book, Published
Editor(s): Kazuha Watanabe and Robert B. Young
Collection: Proceedings of Semantics and Linguistic Theory (SALT) 14
Bibliography: Ithaca, NY: CLC Publications. 212-34.

Partee, Barbara H. and Vladimir Borschev, "Existential sentences, be, and the Genitive of Negation in Russian", (2007). Chapter in book, Published
Editor(s): Ileana Comorovski and Klaus von Heusinger
Collection: Existence: Semantics and Syntax
Bibliography: Dordrecht: Kluwer/Springer. pp.147-190.

Partee, Barbara H., "A note on Mandarin possessives, demonstratives, and definiteness", (   ). Chapter in book, Accepted
Editor(s): Gregory Ward and Betty Birner
Collection: Drawing the Boundaries of Meaning: Neo-Gricean Studies in Pragmatics and Semantics in Honor of Laurence R. Horn
Bibliography: Amsterdam: John Benjamins, pp 269-286

Partee, Barbara H., "Compositionality and coercion in semantics. Case study: The dynamics of adjective meaning", (   ). Chapter in book, Accepted
Editor(s): Gerlof Bouma, Irene Kraemer and Joost Zwarts
Collection: Proceedings of the Colloquium "Cognitive Foundations of Interpretation"
Bibliography: Amsterdam

Verbuk, Anna, "Russian Predicate Clefts as S-Topic Constructions", (2006). Chapter in book, Published
Editor(s): James Lavine, Steven L. Franks, Mila Tasseva-Kurktchieva and Hana Filip
Collection: Formal Approaches to Slavic Linguistics: The Princeton Meeting 2005 (FASL 14)
Bibliography: Ann Arbor: Michigan Slavic Publications, pp. 394-408

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Web/Internet Site

URL(s):

http://people.umass.edu/partee/Gen_Neg/

Description:

This project site, connected to Partee's home page at the University of Massachusetts, was constructed by Youri Zabbal in the summer of Year 1 of the project and was further expanded in Years 2 and 3 by Florian Schwarz and Keir Moulton. It includes a description of the project and of the project personnel, lists of publications and presentations, a bibliography of relevant work, and copies of annual reports.

Other Specific Products

Contributions

Contributions within Discipline:

1. We have contributed to the understanding of the semantics of negation by showing that the relationship between 'syntactic sentential negation' and 'semantic propositional negation' is non-trivial and is not the same in Russian and English. (Borschev et al, FASL-14 paper).

2. We have also contributed to the understanding of the interpretation of negation by elucidating the interplay of syntactic, semantic and pragmatic factors underlying judgments that a given sentence is 'the negation of' another given sentence, and have used these insights to make progress on some much-debated negative 'BE'-sentences in Russian. (Borschev et al, FASL-14 paper, and Partee and Borschev in press in Comorovski and von Heusinger volume.)

3. We have contributed to recent work on the morphology, syntax and semantics of diathesis alternation by relating the Nominative/Genitive and Accusative/Genitive alternation under negation in Russian to other cases of diathesis alternation correlated with shifts in certain semantic entailments. This work is emerging as one of our main new directions and has attracted interest and attention from colleagues working on related problems in other languages.

4. We have brought to the attention of both Russian and western scholars the interesting observation that most Western work on diathesis alternation is 'syntax-centered' while most Russian work on that topic (where the notion of 'diathesis' in its current sense originated) is 'verb-centered'. These differences in theory appear to reflect real differences in how English vs. Russian pattern, and we hope to contribute both theoretical and typological advances as we work on integrating the two approaches.

5. Our work on the 'referential status' of Genitive NPs under negation, heavily influenced by the work of Elena Paducheva, is offering a useful counterbalance to prior exclusive reliance on scope of negation as an explanatory principle for the semantics of the construction. The two notions are not mutually exclusive, and our work may lead to a better understanding of their interaction.

6. Rakhilina's examination of the advantages and limitations of corpus-based studies of the factors contributing to the distribution of Accusative vs. Genitive under negation in Russian is contributing to a better understanding of the relative advantages of the Russian methodology of basing argumentation on attested examples and the Western methodology of basing argumentation on constructed examples and the linguist's native intuitions about them. It is becoming clear that the two kinds of methodologies are best used to supplement one another: the former does not usually yield minimal pairs, which are often crucial, and the latter may too easily lead to biased or unreliable judgments.

7. The work on the semantics of Object Genitive of Negation carried out in Year 2 by Paducheva, by Rakhilina and her students, and augmented by discussion within our project, has begun to uncover second-order semantic generalizations about the semantic contrasts involved in the Accusative vs. Genitive choice, in a way that increases the importance of looking at lexical and compositional semantics together. The fact that different kinds of Perspectival Structure and different kinds of presuppositions are important for different verbs, in ways intimately connected to the meanings of the verbs, may hold the key to making sense of the apparent non-uniformity of semantics effects of Object Genitive of Negation, one of the most difficult puzzles we have contended with. See the discussion of the findings of Beljaeva and Letuchij in the Findings section and of the follow-up research activities and findings of Rakhilina and Paducheva in the Research Activities sections.

8. We have contributed to the understanding of intensionality on two fronts in year 2. On the one hand, the findings of research assistant Florian Schwarz that intensional transitive verbs fall into two families with quite distinct semantic properties will necessitate reexamination of many old arguments and conclusions, and some disputes should be resolvable once it is realized that examples from one class do not provide good arguments for hypotheses about verbs in the other class, nor a fortiori for the whole class of intensional verbs. And in a separate line, the recent work of Partee on the relationship between negation and intensionality has led to support for a conclusion we had begun to come to in Year 1, namely that 'opacity' or 'non-referentiality' or 'reduced referentiality' is not a unitary phenomenon, and that NPs may receive different kinds of 'less referential' interpretations depending on the different semantic properties of the operators or verbs under whose scope they fall.

9. Our work on the property-type hypothesis in Year 3 relates the rich body of research on the Genitive of Negation to an existing and growing body of research on property-type interpretations of NPs, as well as further illuminating the connections between Subjunctive mood and decreased referentiality of NPs.

10. As foreseen in the earlier years' reports, in Year 3 we succeeded in showing how the semantic interpretation of Genitive NPs (both under negation and as complements of intensional verbs) varies with shifts in the semantic interpretation of the lexical verb, furthering our understanding of the interrelation of lexical semantics and compositional semantics.

11. Paducheva has further advanced the study of the role of 'Observer' in the semantics of a range of constructions. In her 1992 work, sentences with locative verbs and Subject Genitive of Negation were analyzed as describing a situation with an Observer participant 'outside the frame', not represented in the argument structure of the verb. The notion of Observer had been introduced by Apresjan in 1986 and by Year 3 now plays an important role in the theory of primary and secondary deixis and of regimes of interpretation. The Observer has gained additional weight since it has turned out that with some verbs it can be given an explication in terms of diathesis. This helps to put the study of Subject and Object Genitive of Negation into a broader context of research in syntax, lexical semantics, and poetics.

12. Overall, our work has succeeded in showing the value of studying lexical semantics and formal semantics (semantics of syntax) together, fulfilling our goal of using the best of Russian and Western semantics to show how each can help to enrich the other. We have identified the main semantic factors involved in the Genitive of Negation construction, and the related Genitive of Intensionality construction, and have shown how the alternation in case of the relevant NP is often accompanied by a subtle shift in the semantics of the verb.

Our final analysis of the construction makes central use of the hypothesis that a Nominative or Accusative NP is of semantic type e (individual-denoting), while a Genitive NP is of semantics type $<e,t>$ (property-denoting). We recognize that that type distinction may be too coarse-grained to do full justice to the subtle semantic differences sometimes observed, and certainly does not represent temporal dimension that is sometimes involved, but we take the property type analysis as a valuable intermediate step towards a full understanding of the construction.

Much of the most interesting work has come from looking at Gen/Acc or Gen/Nom alternations with individual verbs. Looking at examples with a wide range of verbs helps to uncover what is most invariant in the semantics of the construction, and at the same time the observed semantic differences in the interpretation of examples with different verbs from a common semantic field help to pin down details of the verb meanings and of the semantic shifts that specific verbs undergo when they are used with objects of type e vs. type $<e,t>$. This should help lead in the future to the discovery of new generalizations about the possible meaning-shifts of verbs; this topic is helping to develop one chapter in the general study of the semantics of diathetic alternations.

Contributions to Other Disciplines:

For psycholinguistics and cognitive science: Negation is a universal category of thought as well as of language, and constructions that occur only in negative sentences can offer important indirect evidence concerning age-old questions (see Horn's Natural History of Negation) about apparent cognitive asymmetries in the understanding of affirmative vs. negative judgments. The logical tradition since Frege makes semantic negation and affirmation quite symmetrical, and this tradition has had a major influence on formal semantics. But much other work in linguistics and related fields has shown that negation in natural language is not as simple or uniform as the Fregean analysis would suggest. Our work on diathesis alternation under negation is a contribution in this direction; we are in the process of investigating similarities and differences between the semantics of 'negated verbs' (but with the semantics of sentential negation) and the semantics of intensional constructions and other cases of what Paducheva has called 'decreased assertivity' (snjataja utverditel'nost).

Anna Verbuk at the University of Massachusetts has carried out experimental work on Russian-speaking children's acquisition of the Russian ili 'or', a Positive Polarity Item, in the context of negative sentences, and her finding that young Russian children do not recognize the Positive Polarity nature of Russian 'or' but treat it as subject to the same 'de Morgan's Law' conjunction-like interpretation under negation sheds new light on the universality of interpretation of basic logical operators. Her results call for new investigation of how and at what stage children learn that something is a Positive Polarity Item; her own planned future research on the acquisition of semantico-pragmatic competence with respect to scalar implicatures will be a step in that direction. And Igor Yanovich and Olga Fedorova in Moscow have been carrying out work on the psycholinguistic processing of various Russian constructions in ways that contribute both to theoretical arguments concerning the linguistic principles behind the constructions and to the evaluation of hypotheses concerning the universality and modularity of grammatical and processing principles, with increasing depth and breadth.

Contributions to Human Resource Development:

1. The professional development of the Research Assistants on the project is always significant in a project of this kind.

2. Especially in Moscow, and to a lesser extent in Spain and in St. Petersburg, students and young faculty in our international courses had an opportunity to learn about and participate in contemporary research problems in semantics and issues in the integration of lexical and formal semantics. The P.I. held a Senior Fulbright Lectureship at the Russian State Humanities University and Moscow State University in the spring semester of 2005, and taught an advanced topics seminar as well as an introduction to formal semantics; several students in the advanced seminar undertook independent research on the formal semantics of Russian under the supervision of the P.I. and the best of them are continuing this research with plans for public presentation and publication.

3. Our Research Assistant Anna Verbuk was able to gain further benefits from the weeks she spent in Moscow in year 1, where she established invaluable contacts with current Russian linguists and Russian linguistics undergraduate and graduate students in Moscow, and had the opportunity to present her research on Russian cleft constructions in the student-organized Workshop on Formal Semantics in Moscow. Likewise, the Russian students she met with now have the benefit of having her as one of their contacts and resources; she (and other Research Assistants on the project) and the P.I. together will continue in the coming years to respond to Russian requests for copies of papers and other materials inaccessible in Russia or on the internet.

4. The First Annual Formal Semantics Workshop in Moscow in April 2005 had training and development dimensions as one of its main foci. Students and young researchers from Moscow, St. Petersburg, Leipzig, and Amherst attended, presented their work in progress, and discussed their work in semantics with fellow students and young researchers from other institutions and sometimes different theoretical backgrounds. Those students and young researchers involved in organizing and running the workshop got particularly valuable professional experience, and received much encouraging and enthusiastic feedback from the participants. The students worked hard to make the workshop such a success. They negotiated with one another in designing and carrying out all the planning from the calls for papers and the abstract review process, to the design and adjustment of the program, securing the workshop space, and paying attention to the many dimensions of hospitality. They clearly succeeded in juggling intellectual engagement with the substance of a conference with attention to the minutiae of behind-the-scenes work that help a conference succeed. The Second Annual Formal Semantics in Moscow workshop in April 2006 carried that training and development a step further, since Partee was only an 'Honorary Mentor' that time, not being in Moscow at the time. The student organizers increased their self-confidence, had a senior invited speaker, and carried out the planning and organizing with great ease and success. For the future they plan to make it a more overtly international workshop, following the model of such student-run regional-based international conferences as those of NELS (the North East Linguistics Society) and CLS (the Chicago Linguistic Society). In Years 3 and 4, the Third and Fourth Annual Formal Semantics Workshop in Moscow in April 2007 and April 2008 were indeed more overtly international workshops, with participants from many countries and with essentially all of the presentations in English.

Contributions to Resources for Research and Education:

The corpus-based investigations carried out by Rakhilina using the Russian National Corpus in the context of our project provided valuable feedback for the authors of the Corpus. One particular contribution was a greater understanding of the necessity for new options for the Corpus, especially the need for providing a broader context with found search items. The Corpus has been amended (as of June 2005) to provide the option of returning a broader context with search results. In years 2 and 3 the Corpus was further expanded in both coverage and infrastructure.

The research that our research assistant Amy Rose Deal carried out in Years 2 and 3 (summers 2006 and 2007) involved fieldwork on the antipassive construction in Nez Perce. Nez Perce is an endangered language (approximately 50 speakers, all in their 60s or older) and her research may enable the Nez Perce Tribe Language Program to develop pedagogical materials for antipassivization.

Contributions Beyond Science and Engineering:

The project is contributing to US-Russian scientific understanding and cooperation through the participation of the Russian consultants, the joint participation of Russian and American project members in courses and conferences on both sides of the ocean, and the publication of project findings in both Russian and English.

The work on Nez Perce by Amy Rose Deal mentioned in the previous subsection is also contributing to public welfare by contributing to help with the preservation of an endangered language; the language will probably be lost soon as a living language, but through such work, at least some part of its valuable legacy can be preserved.

Conference Proceedings

Categories for which nothing is reported:

Any Product

Any Conference

Project Findings Final: Years 1-4 (Sept. 1, 2004 – Aug. 31, 2008) NSF Grant BCS-0418311

1. Project Findings Year 1
1.1. Diagnostics for Sentential vs. Constituent Negation in Russian. A number of very puzzling cases of the Russian Genitive of Negation turn on some difficulties in distinguishing between sentential negation and constituent negation in present tense BE-sentences with null BE: the usual diagnostics involving the position of the negative morpheme relative to the verb are inapplicable in such sentences. It has been standard at least since the classic work of Babby in 1980 to equate constituent negation with contrastive negation. In the work reported in Borschev et al (in progress: our FASL-14 paper), we found clear arguments that constituent negation is not always contrastive negation, and further found several better and clearer diagnostics for distinguishing between sentential and constituent negation. One set of tests (discovered by Igor Yanovich) concerns ambiguity or lack thereof in the interaction of subject quantifiers and negation, another (discovered by Borschev) concerns the interaction of negation with certain temporal adverbials, and another particularly clear test (discovered by Testelets) concerns the distribution of *ni ... ni* 'neither … nor' phrases. These results were presented at the FASL meeting at Princeton in May and are being written up for publication in early 2006.

1.2. The distinction between Locative and Existential Sentences in Russian. Borschev and Partee have found that the distinction between the two sentences types in Russian corresponding to English "The cat was on the sofa" vs. "There was a cat on the sofa" is not as categorical as the corresponding distinction in English. Their paper in press for the volume edited by Comorovski and von Heusinger outlines a set of properties that cluster together in the prototypical existential or locative sentences, but which do not cluster together in certain 'mixed cases'. This finding raises new questions which will be explored in the next years, and may help to explain some cases in which there is not a straightforward one-to-one correspondence between positive and negative sentences, an issue that was also addressed and partially resolved in the paper noted in point 1.1 above.

1.3. Decreased referentiality in Genitive NPs.
So far our findings on this important issue are largely negative. We have examined some of the arguments (our own and others) for the possibility of treating Genitive NPs as property-denoting. The first thing we have uncovered is a wide range of different views on what such a hypothesis means and what consequences it would have; the ontological assumptions underlying formal semantics and those underlying Moscow school lexical semantics turn out to be more different than we had previously realized. The second thing we have discovered is that despite some tantalizing similarities between the semantics of some cases of Object Genitive of Negation and the semantics of genitive objects of intensional verbs like *zhdat'* 'expect', noted by Neidle in the 1980's and revived in recent proposals by Olga Kagan, there are many fundamental differences that argue against any straightforward semantic unification of the two uses of Genitives. These issues are discussed in Partee's talks and papers in progress for three June conferences, the Meaning-Text Conference in Moscow, the DIALOG conference outside Moscow, and the research workshop in Israel. The hypothesis Partee has

suggested for subsequent exploration is that intensionality or 'reduced referentiality' is not a uniform phenomenon, but involves a number of properties that do not always co-occur.

One may note a commonality in the findings in points 1.2 and 1.3: what had seemed to be dichotomies appear on closer examination to involve constellations of properties that commonly but not invariably co-occur. Part of our future work will be aimed at identifying and analyzing these properties and their consequences in more detail.

1.4. Open problems concerning the semantics of Object Genitive of Negation.

One problem on which we have not reached any definite conclusions concerns the semantics associated with the Object Genitive of Negation construction. But on the positive side, our failure to find any simple and uniform semantic correlate for Object Gen Neg contrasts with our fairly robust understanding of the semantics of Subject Gen Neg and hence strengthens our hypothesis that the two constructions are not semantically uniform. We are not yet in a position to argue that the Unaccusative hypothesis, which unifies the two, is incorrect; we must first come to terms with some counterexamples to our treatment of Subject Genitive of Negation which arise with 'strengthened negative' NPs like *ni odnoj butylky* 'not a single bottle (gen.)', noted in the handouts to some of the recent lectures by Borschev and Partee. In fact we have made more progress than expected in Year 1 on problems connected with the scope of negation, and the semantics of negation more generally, and less progress than expected on the specific semantics of Object Genitive of Negation with different classes of verbs. The latter problem will be a high priority for Year 2.

1.5 The semantics of Russian indefinites.

Our junior consultant Igor Yanovich has made important progress in his work on the semantics of Russian indefinite pronouns, a topic that is not explicitly identified in the project proposal but one that is closely connected to the question of different sorts of 'decreased referentiality' noted in point 1.3 above. Russian has a particularly rich range of 'indefinite series', far more than English with just the *some-*, *any-*, and *no-* series. Yanovich has explored the properties of several of the Russian forms and used them to provide new arguments concerning theoretical debates among Kratzer, Reinhart, and Matthewson concerning choice-function and Hamblin-alternative analyses of indefinites. Yanovich's work simultaneously offers new insights into the semantics of Russian indefinites and new evidence from Russian concerning theoretical issues at the forefront of current formal semantic theory. His conclusion so far is that for certain Russian indefinites, a variant of Kratzer's 'alternative' account works best, but that Russian also has indefinites for which a choice-function analysis works best. The fact that Russian has quite a few bimorphemic indefinites has enabled him to find arguments for dividing up the ingredients of the semantic analysis in particular new ways so that the results can be derived compositionally; this is also an important advance for the understanding of the semantics of indefinites in a semantic- typological perspective.

2. Project findings Year 2.

2.1. Two classes of intensional transitive verbs. Our Research Assistant Florian Schwarz has investigated the properties of intensional transitive verbs, and found that there are two classes of such verbs, which differ substantially in their behavior and require distinct analyses.

One, the 'look for'-class, is best accounted for by Zimmermann's (1993) property analysis, while the other, the 'need'-class, requires a propositional analysis. Schwarz has developed a number of empirical tests for teasing the two apart, employing adverbial modification as well as 'too' and 'again'. The resulting improved understanding of intensional transitive verbs should be helpful in further investigating the connections between the genitive object in Genitive of Negation constructions and intensional transitive verbs (as discussed by Neidle, in Olga Kagan's work, and in recent papers by the PI's). One of the next steps in this research is to look at the contribution of the preposition 'for' in verbs like 'look for', and compare this to the potential contribution of the genitive case in Genitive of Negation constructions.

2.2. Acquisition of Russian 'or'. Our research assistant Anna Verbuk has investigated Russian children's acquisition of the Positive Polarity Item (PPI) *ili* 'or', as described in the Activities section, and has found that the PPI nature of Russian *ili* must be learned. The large majority of Russian children tested treated *ili* as if it were just like English *or* in sentences with disjunctions like 'the key or the mirror' in object position under clausemate sentential negation, whereas no adult Russian speaker can interpret *ili* with scope under clausemate sentential negation. Thus the initial hypothesis appears to be the same for Russian and English-speaking children, that disjunction can take scope *in situ* under sentential negation, and further investigation is called for to see when and together with what other acquisition-relevant factors the PPI nature of *ili* is acquired.

2.3. A distinction between "null copula" and no copula. Our consultant Yakov Testelets has followed up on the problem of constructions in Russian with no overt copula, often referred to as "null copula" sentences, which have presented problems both for our own work on Genitive of Negation in existential sentences (Partee and Borschev, In Press, "Existential sentences, *be*, and the Genitive of Negation in Russian), but also for many other researchers working on copular sentences in Russian. There have been arguments about whether Russian 'bare predicate' sentences without overt copula are instances of sentences with a phonologically null but syntactically real copula, or whether they are matrix small clauses, a controversial hypothesis.Testelets has now shown that constructions with no overt copula in Russian fall into two classes, each conforming to one of the following two analyses: 1) genuine zero copula sentences with a nominative subject and a nominative predicate nominal, e.g. a long-form adjective, a characterizing NP or an NP of identity, and 2) matrix small clauses with no copula at all which lack at least one nominative of the two, e. g. locative, possessive, or temporal clauses.

Two analytical tests may be applied to uncover the structural difference between the two types. The first test was suggested by Igor Yanovich for Russian locative sentences like those investigated in [Borschev, Paducheva, Partee, Testelets, Yanovich 2005]. The second test involves those negative NI-expressions, including NI-NI constructions, which undergo Negative Concord with sentential negation in Slavic. Not all NI-expressions fall into this category; means for sorting out which ones are genuine instances of negative concord with sentential negation was part of the Testelets's result.

2.4. Re-examining Kiparsky's analogies between Finnish partitive case and Russian imperfective aspect. Beginning even before Year 1 we had discussed some very interesting

work of Paul Kiparsky drawing parallels between uses of the Finnish partitive and uses of the Russian imperfective aspect; Kiparsky argued that both of those constructions could be used to mark semantic unboundedness in the verb phrase meaning, whether that unboundedness resulted from the semantics of the direct object or that of the aspectual verb, although with different constraints on the possibilities of semantic shifts in lexical meanings depending on whether it was nominal or verbal morphology that was employed. Our project group discussed his work in several meetings in Years 1 and 2 and eventually came to the conclusion, reported in Partee's paper in press "Negation, intensionality, and aspect: interaction with NP semantics", that Kiparsky's claim about Finnish partitive is presumably correct, his claim about Russian imperfective aspect is too strong: the native speakers in our group uniformly rejected interpretations of imperfect-aspect examples involving a bounded (completed action) reading for the verb and an unbounded reading only for the object. We have communicated this result to Kiparsky and look forward to further discussions to see whether some variant of the hypothesis can be maintained, since it is certainly an attractive one.

2.5. Some results concerning Object Genitive of Negation and related problems.

We have, as hoped, made some substantial progress on understanding the Object Genitive of Negation in Year 2, largely through the work of two of our consultants, Elena Paducheva and Ekaterina Rakhilina, and also through the work of a group of students taught by Rakhilina.

In Fall semester 2005, Ekaterina Rakhilina taught a seminar on the semantics of the Genitive of Negation at RGGU. In January 2006, after the close of the semester, she organized a workshop presentation by some of her students (several of whom had studied semantics with Partee in earlier years) for our NSF project group. The findings reported in the three most interesting of the presentations are summarized here.

1. David Ershler, O vybore padezha u imennyx grupp-sirkonstantov so znacheniem protjazhennosti pri otricanie: opyt korpusnogo issledovanija [On the choice of case in adverbial NPs of extent under negation: an experiment in corpus research]

The study concerned Russian NP-adverbials of temporal or spatial extent, such as *dva kilometra* 'two kilometers', *tri chasa* 'three hours', in negative sentences, in uses in which they occur as quasi-complements in the Accusative in positive sentences. The study investigated factors influencing the choice of Accusative or Genitive under negation, making use of corpus searches both in the Russian National Corpus and with standard search engines, limiting the data to sources from 1960 or later. The main result was the discovery of semantic invariants which could explain all cases (excluding certain idiomatic or strongly lexicalized phrases) in which the use of Genitive is obligatory or possible.

Overall, Accusative is the default choice for NP adverbials of extent in negative sentences just as in positive sentences. Whenever Genitive is used, there is semantic motivation for it. One special case, which relates to many uses of Gen Neg, is that Genitive is *obligatory* in case either of the emphatic particles *i* or *ni* precedes the NP; with *ni* 'not even', the NP must be a bare unit-measure noun, as in 'He didn't sleep even an hour', while with *i* 'even', it can be either bare or cardinally quantified. The use of Genitive is optional, and semantically significant, in cases where the adverbial X contributes to the meaning "The situation

continued for a certain interval of time or space, but ended (a) in the case of an unbounded process: before an interval denoted by X had elapsed, or (b) in the case of a bounded process: when an interval denoted by X still remained before completion." The use of the Genitive in these cases can be characterized semantically as indicating "partitivity of action". In all other cases, Accusative is obligatory.

The report included more interesting details, including the prevalence of certain prefixes, and often certain accompanying PPs with cognate prepositions, conveying temporal extent on the verbs used with Genitive. It would be worthwhile to relate this work to other discussions in the literature concerning the connection between Genitive expressing partitive and Genitive of Negation (Franks and Dziwirek, Dmitry Levinson, Kiparsky, Paducheva.)

2. Anna Belyaeva, Padezhnaja markirovanie ob"ekta pri posessivnyx glagolax [Object case-marking with possessive verbs]

Belyaeva's project began with the hypothesis that transitive verbs relating to possession (give, receive, get, take, borrow, return, buy, sell, lose, find, steal, etc.) would fall into two classes, differing with respect to whether or not the direct object was 'new' to the subject of the sentence, coming into his possession or field of perception in the course of the denoted action. This hypothesis was inspired in part by the behavior of such verbs in the Caucasian languages Adyghe and Komi, where the verbs with 'new' objects take objects with unmarked case (and accordingly 'lower referentiality') and those with 'familiar-to-the-subject' take case-marked, and hence referential, objects.

In order to focus on the contribution of the verb, only sentences with 'concrete' rather than 'abstract' objects were considered, since it is well-known that the concrete-abstract distinction also influences Acc/Gen choice.

One incidentally interesting factor that turned up was that when the negative sentences included the expression *poka ne* ('not yet' or 'so far not', or sometimes 'until'), the use of that adverbial had a strong influence on the choice of Acc/Gen, different choices depending on its meaning in the sentence. This is an interesting factor which Rakhilina has taken up and continued to pursue during Year 2.

The study included corpus searches, and in the presentation many attested examples were given, but no statistics, just impressionistic estimates of greater and lesser frequency.

The hypothesis was confirmed as a factor in the Acc/Gen choice, although not a uniquely determinative one. Other factors such as emphatic negation, the degree of referentiality of the NP and the choice of singular vs. plural, and the aspect of the verb, also play a role in the choice in such sentences. And as usual, Accusative is possible in a wider range of contexts; in some cases Accusative is obligatory or nearly obligatory, whereas Genitive can almost always be replaced by Accusative. Only two of the studied verbs tended to strongly prefer Genitive over Accusative under negation, *darit'* 'to give as a gift' and *naxodit'* 'to find (impf.)'. But with these caveats, the hypothesis was indeed confirmed: where the object was "new" for the subject, Genitive under negation was much more likely to be found than where it was "old". An interesting wrinkle arose for verbs with an additional participant, such as *buy, sell, borrow, lend*: in those cases the entity denoted by the direct object was likely to be "new" for one of the human actants and "old" for the other; in these cases it seems that it may make a difference from whose "point of view" the situation is being described. Further investigation

of this last point is required, since it is not always straightforward to determine the point of view; one line of investigation would involve looking at sentences with one first-person actant and one third-person actant, on the assumption that point-of-view tends to be preferentially associated with a first-person actant when there is one. And as further confirmation of the hypothesis, the Genitive-preferring verb *darit'* 'give as a gift' seems to lexically prefer the point of view of the receiver, for whom the object is new; it is very often used with an unspecified subject. And when the sentence clearly presents the point of view of the giver, the choice is much more likely to be Accusative.

A further result was that with some verbs such as *naxodit'/ najti* 'find impf/pf', a negated sentence with an indefinite object strongly suggests non-existence of the object, and in such cases the use of Gen Neg is very high, much as in negated existential sentences of the sort studied by Babby, by Borschev and Partee, and others.

3. Aleksandr Letuchij, Glagoly, sil'no trebuyushchie genitiva/akkuzativa i iskljuchnija iz pravil [Verbs strongly selecting Genitive/Accusative and exceptions to the rules]

Letuchij focused on three classes of transitive verbs: (a) verbs expressing actions strongly affecting the patient (*ubit'* 'kill', *bit'* 'beat', *udarit'* 'hit'), (b) verbs of emotional perception or experience (three kinds of 'feel'), (c) verbs of speech (three kinds of 'say' or 'tell'). The goal was to determine for which verbs, under sentential negation, Genitive is characteristic, and for which Accusative, and why.

Statistically, overall the predictions of Mustajoki and of Timberlake were confirmed: verbs of class (a) tend to take Accusative, and those of class (b) Genitive. And Mustajoki's data indicating that verbs of speech are strongly Genitive-selecting were also confirmed. But in all cases there were exceptions, and this study attempted to identify and explain the relevant characteristics of the exceptions.

For example, the verb *ubivat'* 'kill (impf.)' regularly takes Gen Neg when used in a secondary meaning, as in to kill hope, to kill a friendship. This generalization is practically without exception. And *ubivat'* sometimes takes genitive even in its primary sense, if the object is indefinite ('I never killed a woman'). With the perfective form *ubit'* there are no such exceptions. With the imperfective *ubivat'* there are even uses of Genitive with a known referential object: an attested example involves denial of a criminal charge: "X swears that he did not kill his mother". Letuchij argues that in this case there is no suggestion of lack of presupposition of the existence of the mother, but rather the identity of the mother is not important for the speaker, only the denial that there was a killing. Probably not coincidentally, he notes, *ubivat'* can be used without an object more easily than the other verbs of strong action.

Letuchij goes equally carefully and thoughtfully through several sets of examples, identifying the factors that play a role in exceptions to the statistical tendencies, and supporting his arguments with near-minimal pairs including both attested and constructed examples. He identifies factors that promote the use of Genitive with the strong-action verbs and other factors that promote the use of Accusative with the Genitive-preferring verbs of perception.

He notes that both in the 'exceptional' cases of object Gen Neg with *ubivat'* and the normal use of object Gen Neg with perception/feeling verbs, there is some similarity with the

use of subject Gen Neg in existential sentences: *ubivat'* in its derived sense has a meaning close to "cause to not exist", and for a subject to feel shame is for shame to exist for the feeling subject.

Letuchij examines the generalization that seems to hold for most cases, that when Accusative is used, the verb and the object are not both in the scope of negation; this fits Babby's original observation. He also examines the hypothesis that a presupposition of existence of the object is crucial, and finds (as has been claimed by others as well) that the presence or absence of presupposition of existence, while clearly a significant factor, does not always determine the choice of Accusative vs. Genitive. He looks also at Given/New and at Perspectival Structure, and particularly at issues of "competition" for the role of Given or Topic or Perspectival Center between the NP in question and other participants in the actant structure, including primarily Subject in the case of object Gen Neg and Location in the case of subject Gen Neg.

His main conclusions are summarized as follows. For the use of Genitive vs. Accusative, it is significant whether the object is included in a presupposition. But this need not always be a presupposition of existence (otherwise one could not explain the use of Genitive in "he did not feel the injection.Gen"), and not always existence in one's personal sphere or location (otherwise we could not account for the possibility of Accusative in 'He didn't tell that story', where it may be that he did not know that story at all). It would appear that which of these kinds of presuppositions is important varies from verb to verb in ways predictable from the meaning of the verb: in the case of verbs of personal perception or feeling, existence within the personal sphere is what's crucial, where as for verbs of speech, simple existence is what matters. And complicating the picture, a lesser though still significant factor is the extent to which the direct object matters to the main assertion.

Along the way, he notes, as did Beljaeva, that the presence of *poka ne* 'not yet', 'still not', or 'until', may sometimes override other factors in determining Genitive/ Accusative choice, but which is preferred depends on the scope of that phrase relative to other parts of the sentence, which is why poka ne doesn't emerge as a 'strong factor' in simple co-occurrence statistics such as Mustajoki's.

Letuchij's work is a good example of the use of close analysis of individual examples to balance statistical corpus studies; he has made good progress in identifying some of the important factors that lie behind both the gross generalizations and their exceptions.

Both Elena Paducheva and Ekaterina Rakhilina followed up on this topic in Year 2, as discussed in the Activities section. Aspects of the broader significance of these findings are discussed under Contributions.

3. Project Findings Year 3

3.1. The Property Type Account as a unifying explanation for Genitive of Negation and Genitive of Intensionality.
At the end of Year 1 we reported largely negative findings on the issue of decreased referentiality of Genitive NPs; we had examined arguments (our own, Olga Kagan's, and others) in favor of treating Genitive NPs as property-denoting and had found them inconclusive. At that point we were skeptical that there could be any straightforward

semantic unification of Genitive of Negation and Genitive of Intensionality. But as a result of further work by us and by Olga Kagan, we achieved during Year 3 a reasonably convincing account of both the similarities and the differences among the various instances of Genitive of Negation and Genitive of Intensionality. The unification does indeed rest on treating Genitive NPs as property-denoting. The account makes considerable use of semantic type-shifting both of the Genitive NPs and of the governing verbs; much of the variation in the fine-grained semantics of different uses of the genitive can then be traced to the interaction of the semantics of the individual verbs with the semantics of the available type-shift operations. What is new here is attention to the shifts in the semantics of the verb that necessarily accompany any shift in the semantics of its argument.

It is well-known that not every instance of Gen Neg or Gen Int is semantically motivated; our work has aimed from the start to elucidate the semantic aspects of the Nom-Gen and Acc-Gen alternations as a contribution to a multi-factor account.

This work is reported in Borschev et al (2008) and in Borschev et al (in preparation).

3.2. Unifying Genitive of Negation, Genitive of Intensionality, and Subjunctive Mood.
Correlations among Genitive of Intensionality and Subjunctive were noted by Dahl in 1971. We have built on contributions of Dahl, Kiparsky, Farkas, and Kagan in continuing to explore the connections among "decreased factivity" signaled by the Subjunctive and "decreased referentiality/ decreased commitment to existence" signaled by Genitive. Given that Negation is not itself an intensional operator, unifying these phenomena is a challenge, but with Kagan's recent work and our own, we have been able to show how the property type theory of Genitive permits an appropriate unification, while still allowing for the differences that had earlier made us skeptical of such an approach.

3.3. Genitive of Intensionality is more highly lexicalized than Gen Neg. The distribution of Genitive vs. Accusative in Russian is not diachronically stable, and this is especially clear in the case of Genitive of Intensionality. We show (Borschev et al 2008) that while there is a high degree of lexicalization of case requirements with intensional verbs and particular subclasses of noun objects, nevertheless in those cases where there is possible Gen/Acc alternation with some agreed-on semantic difference, the difference in the semantics can largely be accounted for with the property-type hypothesis. Since the class of intensional verbs is small and there are many relevant factors, the actually observed semantic differences are not uniform.

3.4. Progress on optionality issues. One of the great complexities of this work is the optionality of Gen/Acc alternation in many cases, not always with any perceived semantic difference, and with considerable individual variation in preferences/possibilities. We don't have a comprehensive multi-factor account, but we believe we have identified some important factors connected with optionality.
(i)   As already established in our earlier work (building on work of Babby and of Paducheva and others) and consolidated in Year 1, Subject Gen Neg is almost always semantically significant, signaling in some cases the distinction between Existential (Gen) and Locative (Nom) sentences, and in other cases implicating absence from the perceptual field of an observer. Our property-type account strengthens Borschev and Partee's earlier work in terms of shifting Perspectival Centers and Paducheva's account in terms of an implicit Observer.

(ii) With object Gen Neg, Acc is almost always possible, and very often ambiguous, permitting a decreased-referentiality reading. The choice of Gen Neg almost always signals decreased referentiality, which we model with the property-type reading. (This suggests that Russian is heading in the direction of Czech, as opposed to Polish: Acc will eventually become obligatory.)

(iii) With (always Object) Gen Int, the case choice is highly lexicalized, and is often determined by the combination of the verb and the "ontological class" of the object. On a scale from most abstract and non-individuated (abstract mass nouns like *spravedlivost'* 'justice') to most concrete and highly individuated (proper nouns like *Masha*), there is a general preference for Genitive at the more abstract end of the scale and Accusative at the more concrete end (cf. Timberlake's earlier generalizations about Genitive signaling a lower degree of individuation). A given intensional verb may require Genitive for some portion of the scale including the Abstract endpoint, and may require Accusative for some portion of the scale including the Concrete endpoint. Some intensional verbs have a totally fixed case choice, either Genitive-only or Accusative-only. But those that allow both cases often have some classes of nouns where both cases are possible. And what we have discovered about the optionality of semantic effects in those cases is that

the ends of the scales where Acc is preferred, if Gen is possible it will be unambiguously non-specific, while near the ends of the scales where Gen is preferred, if Acc is possible it will be unambiguously specific. Where one case is obligatory or strongly preferred, it will often be ambiguous (a natural consequence of lexicalization/grammaticization).

3.5. A new argument against a uniform "scope" account of Gen/Acc alternation. As reported in Borschev et al (2008), we now have a new argument against the widely assumed syntactic account of Gen Neg as uniformly a matter of the relative scope of Negation and the given NP. The strong quantifiers *mnogie* 'many (strong)' and *nekotorye* 'some, certain' are positive polarity items and can never scope under Neg, but they can take Gen Neg with no evident semantic effect. We conclude that they cannot shift to property-type, and that they give clear evidence that Gen Neg is not always semantically motivated and is not uniformly a Negative Polarity Item phenomenon.

3.6. Findings on the inter-related type-shifting possibilities for verbs and their NP object arguments. If an argument NP shifts its semantic type from the normal potentially referential e-type to property type, the verb must undergo some corresponding shift in meaning in order to be able to take a property-type object. As noted above, attention to this interdependence of NP shifts and verbal shifts is crucial for accounting for the variation in semantic effects of Gen Neg and Gen Int. It has long been known that when an intransitive verb occurs with Subject Gen Neg, it never has an agentive interpretation (the Russian for 'no one works at that factory anymore' with Gen Neg is understood to be a way of saying that the factory is vacant); that "bleaching" of the verb meaning can now be seen as an instance of a more general pattern of shifts in verbal meaning to allow property-type arguments.

3.7. New analytical tests for clarifying the structure of binominal sentences in Russian. Our consultant Yakov Testelets in Year 3 found some new analytical tests employing negation that can clarify the grammatical structure of Russian sentences with nominal predicates. As a result, it can be shown that sentences with zero copula and one (subject)

nominative only, like locative sentences in the present indicative, show consistent structural differences from the other types of nominal predicate constructions.

3.8. Two types of definite descriptions in German. Research Assistant Florian Schwarz uncovered two types of definite descriptions in German, which differ in their ability to function as anaphors. This relates to more general issues in nominal semantics concerning noun phrases that display unusual behaviors of various kinds, which are also relevant for the core grant research.

3.9. The semantics of Russian *kakoj*-indefinites. In Year 3 junior consultant Igor Yanovich, following on his earlier grant-supported work on Russian indefinite pronouns, completed his work on the hypothesis that there are two *kakoj*- ('which/what') words in Russian, first proposed in his FSIM 2 talk in Year 2. The hypothesis helps to explain certain subtle interpretational properties of *kakoj*-based indefinite pronouns; the results were reported at FDSL 6.5. In connection with the property type hypothesis for Russian Genitive of Negation, which was one of the main subjects of the grant-related work during Year 3, he also investigated the Hungarian incorporation data reported in Farkas and de Swart (2003). He improved the technical side of their theory for incorporation, and also found, with the help of a native speaker of Hungarian, crucial new data changing the perspective on incorporation in this language. The findings were reported at 31st Penn Linguistics Colloquium.

3.10 New results concerning Object Genitive of Negation. In Paducheva (2006) in *Voprosy Jazykoznanija*, the semantics of Object Genitive of Negation was studied from the perspective of results obtained earlier for Subject Genitive of Negation. Certain classes of verbs were discovered which "prefer" a Genitive object under negation. These classes give further support to dividing verbs which occur with Subject Genitive of Negation into two classes: those with an existential component of meaning and those with a perceptual component. Among verbs that occur with Object Genitive of Negation, verbs of creation form a transitive analog to the existential class, and verbs of perception, knowledge, possession, and movement toward an Observer form a transitive analog to the intransitive perception verbs.

4. Project findings Year 4 and Overall

4.1. Findings reported in Letuchij, Rakhilina, and Reznikova, eds (2008)

Ekaterina Rakhilina (Introduction) gives a general picture of the problematics and summarises the results of the authors.

Anna Desjatova "Genitiv pod otricanijem pri posessivnyx glagolax" (Genitive of negation with verbs of possession)

The paper describes corpus behavior of four verbs of possession: *soderzhat'* 'contain', *soxranjat' / soxranit'* 'preserve', *xranit'* 'keep' which traditionally are expected to prefer Genitive in negative contexts. It argues that still there are some constructions when Accusative is even more preferable than Genitive with these very verbs. These cases could be explained taking into consideration that the corresponding verbs shift their meaning

(sometimes quite considerably) increasing the role of the presupposition of existence in their semantics.

Ekaterina Demjanova "Eksperijencial'noje znanije: konteksty glagolov vosprijatija" (Experiential knowledge: perception verbs and their complement syntax)

Ekaterina Demjanova studied the contexts of the so called "Genitive verbs", i.e. verbs which prefer Genitive under negation, mainly verbs of perception, like *videt'* 'see', njuxat' 'smell', *ispytat'* 'to have experience', *znat'* 'know'. But as far as Accusative becomes to be more widely spread in modern Russian negative constructions, normally these types of contexts allow both Genitive and Accusative. However there are some special types of contexts where Accusative turns out to be ungrammatical. The author shows that such an effect is provided by the semantic shift of the verb where the target meaning denotes a special experiential knowledge obtained by the Subject.

Anna Belyaeva "Ob'jectnyj genitiv otricanija pri glagolax obladanija i vosprijatija" (Object Genitive of negation with verbs of possession and perception)

Belyaeva's project began with the hypothesis that transitive verbs relating to possession (give, receive, get, take, borrow, return, buy, sell, lose, find, steal, etc.) would fall into two classes, differing with respect to whether or not the direct object was 'new' to the subject of the sentence, coming into his possession or field of perception in the course of the denoted action. This hypothesis was inspired in part by the behavior of such verbs in the Caucasian languages Adyghe and Komi, where the verbs with 'new' objects take objects with unmarked case (and accordingly 'lower referentiality') and those with 'familiar-to-the-subject' take case-marked, and hence referential, objects. Her results show the importance of focusing on semantically defined classes of verbs, because she establishes that for the verbs of possession and for verbs of perception, the case alternation under negation depends largely on two factors which play a particularly crucial role for these verbs: (i) entailment or implication of absence of the NP from the possession or immediate sphere of influence of the subject, and (ii) the factor noted above, of whether or not the direct object was 'new' to the subject; this factor is related to 'degree of referentiality' but not identical to its usual manifestation. Her paper gives more detailed development of and argumentation for the conclusions reached in her Year 2 oral report described above.

Aleksandr Letuchij "Genitiv, klassy glagolov i presuppozicija" (Genitive, verb classes and presuposition)

Letuchij focused on three classes of transitive verbs: (a) verbs expressing actions strongly affecting the patient (*ubit'* 'kill', *bit'* 'beat', *udarit'* 'hit'), (b) verbs of emotional perception or experience (three kinds of 'feel'), (c) verbs of speech (three kinds of 'say' or 'tell'). The goal was to determine for which verbs, under sentential negation, Genitive is characteristic, and for which Accusative, and why. His paper gives more detailed development of and argumentation for the conclusions reached in his Year 2 oral report described above.

David Ershler "Genitiv otricanija i nepacijentivnyje znachenija accuzativa: fenomenologija i semantika" (The Genitive of negation and non-patient Accusative meanings: phenomenology and semantics)

The study concerned Russian NP-adverbials of temporal or spatial extent, such as *dva kilometra* 'two kilometers', *tri chasa* 'three hours', in negative sentences, in uses in which they occur as quasi-complements in the Accusative in positive sentences. The main result was the discovery of semantic invariants which could explain all cases (excluding certain idiomatic or strongly lexicalized phrases) in which the use of Genitive is obligatory or possible. His paper gives more detailed development of and argumentation for the conclusions reached in his Year 2 oral report described above.

Elena Paducheva "Posleslovije. Genitiv otricanija: morfologija, semantika, sintaksis" (Epilogue. Genitive of Negation: Morphology, sementics, syntax).

In Paducheva's epilogue, she puts the given studies into historical context, both with respect to the history of the Genitive of Negation construction, and its gradual decline in modern Russian, and with respect to the long history of linguistic work on the topic, where she observes a gradual shift from attention to "usage" to greater attention to semantic contrasts, emphasized in all of our work on this project. She notes that the semantics of Subject Genitive of Negation is better understood than that of Object Genitive of Negation, and points out the importance of looking at different classes of verbs, some of which have semantic components quite close to those that play a role in Subject Genitive of Negation. She sees the greatest hope of unifying Subject and Object Genitive of Negation in the semantic property of implicature of non-existence in any of a number of relevant senses – in the world, in someone's personal sphere, in an observer's field of vision, etc.

4.2. Connecting the property-type hypothesis with other approaches

As work proceeds on Borschev et al (in preparation), we have been refining the property-type hypothesis and finding better ways to connect it to other factors often mentioned as relevant to the given case alternation. Kagan's recent dissertation (for which Partee served as an outside examiner) emphasized the absence of "Relative Existential Commitment" as the principal factor in unifying Genitive of Negation and Genitive of Intensionality; we find that there are cases where existence is presupposed but 'irrelevant' to the content of a proposition, and the property-type theory fares better than Kagan's account in applying equally well to attributive definites and to non-specific indefinites. But the two approaches have a great deal in common, and we are exploring ways to draw on the best of each.

We are also returning to some earlier ideas we had discussed with David Perlmutter for unifying syntactic and semantic approaches; the issue is not "syntax vs. semantics", but to what extent the semantic differences are correlated with syntactic differences. The property-type hypothesis is quite compatible with the idea that all alternating Genitive NPs are internal arguments, since most researchers assume that external arguments must be e-type.

4.3. Open issues for future work.

We see three large issues as particularly important for further progress on this seemingly limitless topic.

(i) A broader typological perspective would be very helpful. We have learned about a great deal of work that exists on differential object marking in a wide range of languages, often involving factors that bear some resemblance to the factors that influence Genitive of Negation (and of Intensionality) in Russian. We also know, superficially, about the wide

range of patterns concerning Genitive of Negation or its absence in the various Slavic languages, and a bit about its history in Russian. Both a Slavic-typology perspective and a broader typological perspective would add important sources of insight to these studies, and detailed work such as ours could likewise be useful for typological work.

(ii) Experimental psycholinguistic work could be a helpful supplement to introspective work, informal canvassing of native speakers, and corpus work, since intuitions on crucial examples are notioriously variable and unstable in this area.

(iii) Related to the variability in the data, it will be important in the long run to put this work in the context of a framework which has a way of dealing with the interaction of a considerable number of factors, including not only syntax, semantics, and morphology, but also stylistic choice, usage preferences that relate to historical change in progress, normative pressures, and other factors. Something like Optimality Theory may be helpful, but there are probably more factors to be dealt with than current OT approaches can easily handle. We do not propose to undertake such a project ourselves, but we want to note its importance. At present, the best we can do is to make clear that while we believe we have identified some of the most important semantic principles involved in Genitive of Negation, we are well aware that Gen/Nom and Gen/Acc alternations are not always explainable by semantics, or at least by semantics alone.

Project Findings Final: Years 1-4 (Sept. 1, 2004 – Aug. 31, 2008) NSF Grant BCS-0418311

1. Project Findings Year 1
1.1. Diagnostics for Sentential vs. Constituent Negation in Russian. A number of very puzzling cases of the Russian Genitive of Negation turn on some difficulties in distinguishing between sentential negation and constituent negation in present tense BE-sentences with null BE: the usual diagnostics involving the position of the negative morpheme relative to the verb are inapplicable in such sentences. It has been standard at least since the classic work of Babby in 1980 to equate constituent negation with contrastive negation. In the work reported in Borschev et al (in progress: our FASL-14 paper), we found clear arguments that constituent negation is not always contrastive negation, and further found several better and clearer diagnostics for distinguishing between sentential and constituent negation. One set of tests (discovered by Igor Yanovich) concerns ambiguity or lack thereof in the interaction of subject quantifiers and negation, another (discovered by Borschev) concerns the interaction of negation with certain temporal adverbials, and another particularly clear test (discovered by Testelets) concerns the distribution of *ni ... ni* 'neither … nor' phrases. These results were presented at the FASL meeting at Princeton in May and are being written up for publication in early 2006.

1.2. The distinction between Locative and Existential Sentences in Russian. Borschev and Partee have found that the distinction between the two sentences types in Russian corresponding to English "The cat was on the sofa" vs. "There was a cat on the sofa" is not as categorical as the corresponding distinction in English. Their paper in press for the volume edited by Comorovski and von Heusinger outlines a set of properties that cluster together in the prototypical existential or locative sentences, but which do not cluster together in certain 'mixed cases'. This finding raises new questions which will be explored in the next years, and may help to explain some cases in which there is not a straightforward one-to-one correspondence between positive and negative sentences, an issue that was also addressed and partially resolved in the paper noted in point 1.1 above.

1.3. Decreased referentiality in Genitive NPs.
So far our findings on this important issue are largely negative. We have examined some of the arguments (our own and others) for the possibility of treating Genitive NPs as property-denoting. The first thing we have uncovered is a wide range of different views on what such a hypothesis means and what consequences it would have; the ontological assumptions underlying formal semantics and those underlying Moscow school lexical semantics turn out to be more different than we had previously realized. The second thing we have discovered is that despite some tantalizing similarities between the semantics of some cases of Object Genitive of Negation and the semantics of genitive objects of intensional verbs like *zhdat'* 'expect', noted by Neidle in the 1980's and revived in recent proposals by Olga Kagan, there are many fundamental differences that argue against any straightforward semantic unification of the two uses of Genitives. These issues are discussed in Partee's talks and papers in progress for three June conferences, the Meaning-Text Conference in Moscow, the DIALOG conference outside Moscow, and the research workshop in Israel. The hypothesis Partee has

suggested for subsequent exploration is that intensionality or 'reduced referentiality' is not a uniform phenomenon, but involves a number of properties that do not always co-occur.

One may note a commonality in the findings in points 1.2 and 1.3: what had seemed to be dichotomies appear on closer examination to involve constellations of properties that commonly but not invariably co-occur. Part of our future work will be aimed at identifying and analyzing these properties and their consequences in more detail.

1.4. Open problems concerning the semantics of Object Genitive of Negation.

One problem on which we have not reached any definite conclusions concerns the semantics associated with the Object Genitive of Negation construction. But on the positive side, our failure to find any simple and uniform semantic correlate for Object Gen Neg contrasts with our fairly robust understanding of the semantics of Subject Gen Neg and hence strengthens our hypothesis that the two constructions are not semantically uniform. We are not yet in a position to argue that the Unaccusative hypothesis, which unifies the two, is incorrect; we must first come to terms with some counterexamples to our treatment of Subject Genitive of Negation which arise with 'strengthened negative' NPs like *ni odnoj butylky* 'not a single bottle (gen.)', noted in the handouts to some of the recent lectures by Borschev and Partee. In fact we have made more progress than expected in Year 1 on problems connected with the scope of negation, and the semantics of negation more generally, and less progress than expected on the specific semantics of Object Genitive of Negation with different classes of verbs. The latter problem will be a high priority for Year 2.

1.5 The semantics of Russian indefinites.

Our junior consultant Igor Yanovich has made important progress in his work on the semantics of Russian indefinite pronouns, a topic that is not explicitly identified in the project proposal but one that is closely connected to the question of different sorts of 'decreased referentiality' noted in point 1.3 above. Russian has a particularly rich range of 'indefinite series', far more than English with just the *some-*, *any-*, and *no-* series. Yanovich has explored the properties of several of the Russian forms and used them to provide new arguments concerning theoretical debates among Kratzer, Reinhart, and Matthewson concerning choice-function and Hamblin-alternative analyses of indefinites. Yanovich's work simultaneously offers new insights into the semantics of Russian indefinites and new evidence from Russian concerning theoretical issues at the forefront of current formal semantic theory. His conclusion so far is that for certain Russian indefinites, a variant of Kratzer's 'alternative' account works best, but that Russian also has indefinites for which a choice-function analysis works best. The fact that Russian has quite a few bimorphemic indefinites has enabled him to find arguments for dividing up the ingredients of the semantic analysis in particular new ways so that the results can be derived compositionally; this is also an important advance for the understanding of the semantics of indefinites in a semantic- typological perspective.

2. Project findings Year 2.

2.1. Two classes of intensional transitive verbs. Our Research Assistant Florian Schwarz has investigated the properties of intensional transitive verbs, and found that there are two classes of such verbs, which differ substantially in their behavior and require distinct analyses.

One, the 'look for'-class, is best accounted for by Zimmermann's (1993) property analysis, while the other, the 'need'-class, requires a propositional analysis. Schwarz has developed a number of empirical tests for teasing the two apart, employing adverbial modification as well as 'too' and 'again'. The resulting improved understanding of intensional transitive verbs should be helpful in further investigating the connections between the genitive object in Genitive of Negation constructions and intensional transitive verbs (as discussed by Neidle, in Olga Kagan's work, and in recent papers by the PI's). One of the next steps in this research is to look at the contribution of the preposition 'for' in verbs like 'look for', and compare this to the potential contribution of the genitive case in Genitive of Negation constructions.

2.2. Acquisition of Russian 'or'. Our research assistant Anna Verbuk has investigated Russian children's acquisition of the Positive Polarity Item (PPI) *ili* 'or', as described in the Activities section, and has found that the PPI nature of Russian *ili* must be learned. The large majority of Russian children tested treated *ili* as if it were just like English *or* in sentences with disjunctions like 'the key or the mirror' in object position under clausemate sentential negation, whereas no adult Russian speaker can interpret *ili* with scope under clausemate sentential negation. Thus the initial hypothesis appears to be the same for Russian and English-speaking children, that disjunction can take scope *in situ* under sentential negation, and further investigation is called for to see when and together with what other acquisition-relevant factors the PPI nature of *ili* is acquired.

2.3. A distinction between "null copula" and no copula. Our consultant Yakov Testelets has followed up on the problem of constructions in Russian with no overt copula, often referred to as "null copula" sentences, which have presented problems both for our own work on Genitive of Negation in existential sentences (Partee and Borschev, In Press, "Existential sentences, *be*, and the Genitive of Negation in Russian), but also for many other researchers working on copular sentences in Russian. There have been arguments about whether Russian 'bare predicate' sentences without overt copula are instances of sentences with a phonologically null but syntactically real copula, or whether they are matrix small clauses, a controversial hypothesis.Testelets has now shown that constructions with no overt copula in Russian fall into two classes, each conforming to one of the following two analyses: 1) genuine zero copula sentences with a nominative subject and a nominative predicate nominal, e.g. a long-form adjective, a characterizing NP or an NP of identity, and 2) matrix small clauses with no copula at all which lack at least one nominative of the two, e. g. locative, possessive, or temporal clauses.

Two analytical tests may be applied to uncover the structural difference between the two types. The first test was suggested by Igor Yanovich for Russian locative sentences like those investigated in [Borschev, Paducheva, Partee, Testelets, Yanovich 2005]. The second test involves those negative NI-expressions, including NI-NI constructions, which undergo Negative Concord with sentential negation in Slavic. Not all NI-expressions fall into this category; means for sorting out which ones are genuine instances of negative concord with sentential negation was part of the Testelets's result.

2.4. Re-examining Kiparsky's analogies between Finnish partitive case and Russian imperfective aspect. Beginning even before Year 1 we had discussed some very interesting

work of Paul Kiparsky drawing parallels between uses of the Finnish partitive and uses of the Russian imperfective aspect; Kiparsky argued that both of those constructions could be used to mark semantic unboundedness in the verb phrase meaning, whether that unboundedness resulted from the semantics of the direct object or that of the aspectual verb, although with different constraints on the possibilities of semantic shifts in lexical meanings depending on whether it was nominal or verbal morphology that was employed. Our project group discussed his work in several meetings in Years 1 and 2 and eventually came to the conclusion, reported in Partee's paper in press "Negation, intensionality, and aspect: interaction with NP semantics", that Kiparsky's claim about Finnish partitive is presumably correct, his claim about Russian imperfective aspect is too strong: the native speakers in our group uniformly rejected interpretations of imperfect-aspect examples involving a bounded (completed action) reading for the verb and an unbounded reading only for the object. We have communicated this result to Kiparsky and look forward to further discussions to see whether some variant of the hypothesis can be maintained, since it is certainly an attractive one.

2.5. Some results concerning Object Genitive of Negation and related problems.

We have, as hoped, made some substantial progress on understanding the Object Genitive of Negation in Year 2, largely through the work of two of our consultants, Elena Paducheva and Ekaterina Rakhilina, and also through the work of a group of students taught by Rakhilina.

In Fall semester 2005, Ekaterina Rakhilina taught a seminar on the semantics of the Genitive of Negation at RGGU. In January 2006, after the close of the semester, she organized a workshop presentation by some of her students (several of whom had studied semantics with Partee in earlier years) for our NSF project group. The findings reported in the three most interesting of the presentations are summarized here.

1. David Ershler, O vybore padezha u imennyx grupp-sirkonstantov so znacheniem protjazhennosti pri otricanie: opyt korpusnogo issledovanija [On the choice of case in adverbial NPs of extent under negation: an experiment in corpus research]

The study concerned Russian NP-adverbials of temporal or spatial extent, such as *dva kilometra* 'two kilometers', *tri chasa* 'three hours', in negative sentences, in uses in which they occur as quasi-complements in the Accusative in positive sentences. The study investigated factors influencing the choice of Accusative or Genitive under negation, making use of corpus searches both in the Russian National Corpus and with standard search engines, limiting the data to sources from 1960 or later. The main result was the discovery of semantic invariants which could explain all cases (excluding certain idiomatic or strongly lexicalized phrases) in which the use of Genitive is obligatory or possible.

Overall, Accusative is the default choice for NP adverbials of extent in negative sentences just as in positive sentences. Whenever Genitive is used, there is semantic motivation for it. One special case, which relates to many uses of Gen Neg, is that Genitive is *obligatory* in case either of the emphatic particles *i* or *ni* precedes the NP; with *ni* 'not even', the NP must be a bare unit-measure noun, as in 'He didn't sleep even an hour', while with *i* 'even', it can be either bare or cardinally quantified. The use of Genitive is optional, and semantically significant, in cases where the adverbial X contributes to the meaning "The situation

continued for a certain interval of time or space, but ended (a) in the case of an unbounded process: before an interval denoted by X had elapsed, or (b) in the case of a bounded process: when an interval denoted by X still remained before completion." The use of the Genitive in these cases can be characterized semantically as indicating "partitivity of action". In all other cases, Accusative is obligatory.

The report included more interesting details, including the prevalence of certain prefixes, and often certain accompanying PPs with cognate prepositions, conveying temporal extent on the verbs used with Genitive. It would be worthwhile to relate this work to other discussions in the literature concerning the connection between Genitive expressing partitive and Genitive of Negation (Franks and Dziwirek, Dmitry Levinson, Kiparsky, Paducheva.)

2. Anna Belyaeva, Padezhnaja markirovanie ob"ekta pri posessivnyx glagolax [Object case-marking with possessive verbs]

Belyaeva's project began with the hypothesis that transitive verbs relating to possession (give, receive, get, take, borrow, return, buy, sell, lose, find, steal, etc.) would fall into two classes, differing with respect to whether or not the direct object was 'new' to the subject of the sentence, coming into his possession or field of perception in the course of the denoted action. This hypothesis was inspired in part by the behavior of such verbs in the Caucasian languages Adyghe and Komi, where the verbs with 'new' objects take objects with unmarked case (and accordingly 'lower referentiality') and those with 'familiar-to-the-subject' take case-marked, and hence referential, objects.

In order to focus on the contribution of the verb, only sentences with 'concrete' rather than 'abstract' objects were considered, since it is well-known that the concrete-abstract distinction also influences Acc/Gen choice.

One incidentally interesting factor that turned up was that when the negative sentences included the expression *poka ne* ('not yet' or 'so far not', or sometimes 'until'), the use of that adverbial had a strong influence on the choice of Acc/Gen, different choices depending on its meaning in the sentence. This is an interesting factor which Rakhilina has taken up and continued to pursue during Year 2.

The study included corpus searches, and in the presentation many attested examples were given, but no statistics, just impressionistic estimates of greater and lesser frequency.

The hypothesis was confirmed as a factor in the Acc/Gen choice, although not a uniquely determinative one. Other factors such as emphatic negation, the degree of referentiality of the NP and the choice of singular vs. plural, and the aspect of the verb, also play a role in the choice in such sentences. And as usual, Accusative is possible in a wider range of contexts; in some cases Accusative is obligatory or nearly obligatory, whereas Genitive can almost always be replaced by Accusative. Only two of the studied verbs tended to strongly prefer Genitive over Accusative under negation, *darit'* 'to give as a gift' and *naxodit'* 'to find (impf.)'. But with these caveats, the hypothesis was indeed confirmed: where the object was "new" for the subject, Genitive under negation was much more likely to be found than where it was "old". An interesting wrinkle arose for verbs with an additional participant, such as *buy, sell, borrow, lend*: in those cases the entity denoted by the direct object was likely to be "new" for one of the human actants and "old" for the other; in these cases it seems that it may make a difference from whose "point of view" the situation is being described. Further investigation

of this last point is required, since it is not always straightforward to determine the point of view; one line of investigation would involve looking at sentences with one first-person actant and one third-person actant, on the assumption that point-of-view tends to be preferentially associated with a first-person actant when there is one. And as further confirmation of the hypothesis, the Genitive-preferring verb *darit'* 'give as a gift' seems to lexically prefer the point of view of the receiver, for whom the object is new; it is very often used with an unspecified subject. And when the sentence clearly presents the point of view of the giver, the choice is much more likely to be Accusative.

A further result was that with some verbs such as *naxodit'/ najti* 'find impf/pf', a negated sentence with an indefinite object strongly suggests non-existence of the object, and in such cases the use of Gen Neg is very high, much as in negated existential sentences of the sort studied by Babby, by Borschev and Partee, and others.

3. Aleksandr Letuchij, Glagoly, sil'no trebuyushchie genitiva/akkuzativa i iskljuchnija iz pravil [Verbs strongly selecting Genitive/Accusative and exceptions to the rules]

Letuchij focused on three classes of transitive verbs: (a) verbs expressing actions strongly affecting the patient (*ubit'* 'kill', *bit'* 'beat', *udarit'* 'hit'), (b) verbs of emotional perception or experience (three kinds of 'feel'), (c) verbs of speech (three kinds of 'say' or 'tell'). The goal was to determine for which verbs, under sentential negation, Genitive is characteristic, and for which Accusative, and why.

Statistically, overall the predictions of Mustajoki and of Timberlake were confirmed: verbs of class (a) tend to take Accusative, and those of class (b) Genitive. And Mustajoki's data indicating that verbs of speech are strongly Genitive-selecting were also confirmed. But in all cases there were exceptions, and this study attempted to identify and explain the relevant characteristics of the exceptions.

For example, the verb *ubivat'* 'kill (impf.)' regularly takes Gen Neg when used in a secondary meaning, as in to kill hope, to kill a friendship. This generalization is practically without exception. And *ubivat'* sometimes takes genitive even in its primary sense, if the object is indefinite ('I never killed a woman'). With the perfective form *ubit'* there are no such exceptions. With the imperfective *ubivat'* there are even uses of Genitive with a known referential object: an attested example involves denial of a criminal charge: "X swears that he did not kill his mother". Letuchij argues that in this case there is no suggestion of lack of presupposition of the existence of the mother, but rather the identity of the mother is not important for the speaker, only the denial that there was a killing. Probably not coincidentally, he notes, *ubivat'* can be used without an object more easily than the other verbs of strong action.

Letuchij goes equally carefully and thoughtfully through several sets of examples, identifying the factors that play a role in exceptions to the statistical tendencies, and supporting his arguments with near-minimal pairs including both attested and constructed examples. He identifies factors that promote the use of Genitive with the strong-action verbs and other factors that promote the use of Accusative with the Genitive-preferring verbs of perception.

He notes that both in the 'exceptional' cases of object Gen Neg with *ubivat'* and the normal use of object Gen Neg with perception/feeling verbs, there is some similarity with the

use of subject Gen Neg in existential sentences: *ubivat'* in its derived sense has a meaning close to "cause to not exist", and for a subject to feel shame is for shame to exist for the feeling subject.

Letuchij examines the generalization that seems to hold for most cases, that when Accusative is used, the verb and the object are not both in the scope of negation; this fits Babby's original observation. He also examines the hypothesis that a presupposition of existence of the object is crucial, and finds (as has been claimed by others as well) that the presence or absence of presupposition of existence, while clearly a significant factor, does not always determine the choice of Accusative vs. Genitive. He looks also at Given/New and at Perspectival Structure, and particularly at issues of "competition" for the role of Given or Topic or Perspectival Center between the NP in question and other participants in the actant structure, including primarily Subject in the case of object Gen Neg and Location in the case of subject Gen Neg.

His main conclusions are summarized as follows. For the use of Genitive vs. Accusative, it is significant whether the object is included in a presupposition. But this need not always be a presupposition of existence (otherwise one could not explain the use of Genitive in "he did not feel the injection.Gen"), and not always existence in one's personal sphere or location (otherwise we could not account for the possibility of Accusative in 'He didn't tell that story', where it may be that he did not know that story at all). It would appear that which of these kinds of presuppositions is important varies from verb to verb in ways predictable from the meaning of the verb: in the case of verbs of personal perception or feeling, existence within the personal sphere is what's crucial, where as for verbs of speech, simple existence is what matters. And complicating the picture, a lesser though still significant factor is the extent to which the direct object matters to the main assertion.

Along the way, he notes, as did Beljaeva, that the presence of *poka ne* 'not yet', 'still not', or 'until', may sometimes override other factors in determining Genitive/ Accusative choice, but which is preferred depends on the scope of that phrase relative to other parts of the sentence, which is why poka ne doesn't emerge as a 'strong factor' in simple co-occurrence statistics such as Mustajoki's.

Letuchij's work is a good example of the use of close analysis of individual examples to balance statistical corpus studies; he has made good progress in identifying some of the important factors that lie behind both the gross generalizations and their exceptions.

Both Elena Paducheva and Ekaterina Rakhilina followed up on this topic in Year 2, as discussed in the Activities section. Aspects of the broader significance of these findings are discussed under Contributions.

3. Project Findings Year 3

3.1. The Property Type Account as a unifying explanation for Genitive of Negation and Genitive of Intensionality.
At the end of Year 1 we reported largely negative findings on the issue of decreased referentiality of Genitive NPs; we had examined arguments (our own, Olga Kagan's, and others) in favor of treating Genitive NPs as property-denoting and had found them inconclusive. At that point we were skeptical that there could be any straightforward

semantic unification of Genitive of Negation and Genitive of Intensionality. But as a result of further work by us and by Olga Kagan, we achieved during Year 3 a reasonably convincing account of both the similarities and the differences among the various instances of Genitive of Negation and Genitive of Intensionality. The unification does indeed rest on treating Genitive NPs as property-denoting. The account makes considerable use of semantic type-shifting both of the Genitive NPs and of the governing verbs; much of the variation in the fine-grained semantics of different uses of the genitive can then be traced to the interaction of the semantics of the individual verbs with the semantics of the available type-shift operations. What is new here is attention to the shifts in the semantics of the verb that necessarily accompany any shift in the semantics of its argument.

It is well-known that not every instance of Gen Neg or Gen Int is semantically motivated; our work has aimed from the start to elucidate the semantic aspects of the Nom-Gen and Acc-Gen alternations as a contribution to a multi-factor account.

This work is reported in Borschev et al (2008) and in Borschev et al (in preparation).

3.2. Unifying Genitive of Negation, Genitive of Intensionality, and Subjunctive Mood.
Correlations among Genitive of Intensionality and Subjunctive were noted by Dahl in 1971. We have built on contributions of Dahl, Kiparsky, Farkas, and Kagan in continuing to explore the connections among "decreased factivity" signaled by the Subjunctive and "decreased referentiality/ decreased commitment to existence" signaled by Genitive. Given that Negation is not itself an intensional operator, unifying these phenomena is a challenge, but with Kagan's recent work and our own, we have been able to show how the property type theory of Genitive permits an appropriate unification, while still allowing for the differences that had earlier made us skeptical of such an approach.

3.3. Genitive of Intensionality is more highly lexicalized than Gen Neg. The distribution of Genitive vs. Accusative in Russian is not diachronically stable, and this is especially clear in the case of Genitive of Intensionality. We show (Borschev et al 2008) that while there is a high degree of lexicalization of case requirements with intensional verbs and particular subclasses of noun objects, nevertheless in those cases where there is possible Gen/Acc alternation with some agreed-on semantic difference, the difference in the semantics can largely be accounted for with the property-type hypothesis. Since the class of intensional verbs is small and there are many relevant factors, the actually observed semantic differences are not uniform.

3.4. Progress on optionality issues. One of the great complexities of this work is the optionality of Gen/Acc alternation in many cases, not always with any perceived semantic difference, and with considerable individual variation in preferences/possibilities. We don't have a comprehensive multi-factor account, but we believe we have identified some important factors connected with optionality.
(i) As already established in our earlier work (building on work of Babby and of Paducheva and others) and consolidated in Year 1, Subject Gen Neg is almost always semantically significant, signaling in some cases the distinction between Existential (Gen) and Locative (Nom) sentences, and in other cases implicating absence from the perceptual field of an observer. Our property-type account strengthens Borschev and Partee's earlier work in terms of shifting Perspectival Centers and Paducheva's account in terms of an implicit Observer.

(ii) With object Gen Neg, Acc is almost always possible, and very often ambiguous, permitting a decreased-referentiality reading. The choice of Gen Neg almost always signals decreased referentiality, which we model with the property-type reading. (This suggests that Russian is heading in the direction of Czech, as opposed to Polish: Acc will eventually become obligatory.)

(iii) With (always Object) Gen Int, the case choice is highly lexicalized, and is often determined by the combination of the verb and the "ontological class" of the object. On a scale from most abstract and non-individuated (abstract mass nouns like *spravedlivost'* 'justice') to most concrete and highly individuated (proper nouns like *Masha*), there is a general preference for Genitive at the more abstract end of the scale and Accusative at the more concrete end (cf. Timberlake's earlier generalizations about Genitive signaling a lower degree of individuation). A given intensional verb may require Genitive for some portion of the scale including the Abstract endpoint, and may require Accusative for some portion of the scale including the Concrete endpoint. Some intensional verbs have a totally fixed case choice, either Genitive-only or Accusative-only. But those that allow both cases often have some classes of nouns where both cases are possible. And what we have discovered about the optionality of semantic effects in those cases is that

the ends of the scales where Acc is preferred, if Gen is possible it will be unambiguously non-specific, while near the ends of the scales where Gen is preferred, if Acc is possible it will be unambiguously specific. Where one case is obligatory or strongly preferred, it will often be ambiguous (a natural consequence of lexicalization/grammaticization).

3.5. A new argument against a uniform "scope" account of Gen/Acc alternation. As reported in Borschev et al (2008), we now have a new argument against the widely assumed syntactic account of Gen Neg as uniformly a matter of the relative scope of Negation and the given NP. The strong quantifiers *mnogie* 'many (strong)' and *nekotorye* 'some, certain' are positive polarity items and can never scope under Neg, but they can take Gen Neg with no evident semantic effect. We conclude that they cannot shift to property-type, and that they give clear evidence that Gen Neg is not always semantically motivated and is not uniformly a Negative Polarity Item phenomenon.

3.6. Findings on the inter-related type-shifting possibilities for verbs and their NP object arguments. If an argument NP shifts its semantic type from the normal potentially referential e-type to property type, the verb must undergo some corresponding shift in meaning in order to be able to take a property-type object. As noted above, attention to this interdependence of NP shifts and verbal shifts is crucial for accounting for the variation in semantic effects of Gen Neg and Gen Int. It has long been known that when an intransitive verb occurs with Subject Gen Neg, it never has an agentive interpretation (the Russian for 'no one works at that factory anymore' with Gen Neg is understood to be a way of saying that the factory is vacant); that "bleaching" of the verb meaning can now be seen as an instance of a more general pattern of shifts in verbal meaning to allow property-type arguments.

3.7. New analytical tests for clarifying the structure of binominal sentences in Russian. Our consultant Yakov Testelets in Year 3 found some new analytical tests employing negation that can clarify the grammatical structure of Russian sentences with nominal predicates. As a result, it can be shown that sentences with zero copula and one (subject)

nominative only, like locative sentences in the present indicative, show consistent structural differences from the other types of nominal predicate constructions.

3.8. Two types of definite descriptions in German. Research Assistant Florian Schwarz uncovered two types of definite descriptions in German, which differ in their ability to function as anaphors. This relates to more general issues in nominal semantics concerning noun phrases that display unusual behaviors of various kinds, which are also relevant for the core grant research.

3.9. The semantics of Russian *kakoj*-indefinites. In Year 3 junior consultant Igor Yanovich, following on his earlier grant-supported work on Russian indefinite pronouns, completed his work on the hypothesis that there are two *kakoj*- ('which/what') words in Russian, first proposed in his FSIM 2 talk in Year 2. The hypothesis helps to explain certain subtle interpretational properties of *kakoj*-based indefinite pronouns; the results were reported at FDSL 6.5. In connection with the property type hypothesis for Russian Genitive of Negation, which was one of the main subjects of the grant-related work during Year 3, he also investigated the Hungarian incorporation data reported in Farkas and de Swart (2003). He improved the technical side of their theory for incorporation, and also found, with the help of a native speaker of Hungarian, crucial new data changing the perspective on incorporation in this language. The findings were reported at 31st Penn Linguistics Colloquium.

3.10 New results concerning Object Genitive of Negation. In Paducheva (2006) in *Voprosy Jazykoznanija*, the semantics of Object Genitive of Negation was studied from the perspective of results obtained earlier for Subject Genitive of Negation. Certain classes of verbs were discovered which "prefer" a Genitive object under negation. These classes give further support to dividing verbs which occur with Subject Genitive of Negation into two classes: those with an existential component of meaning and those with a perceptual component. Among verbs that occur with Object Genitive of Negation, verbs of creation form a transitive analog to the existential class, and verbs of perception, knowledge, possession, and movement toward an Observer form a transitive analog to the intransitive perception verbs.

4. Project findings Year 4 and Overall

4.1. Findings reported in Letuchij, Rakhilina, and Reznikova, eds (2008)

Ekaterina Rakhilina (Introduction) gives a general picture of the problematics and summarises the results of the authors.

Anna Desjatova "Genitiv pod otricanijem pri posessivnyx glagolax" (Genitive of negation with verbs of possession)

The paper describes corpus behavior of four verbs of possession: *soderzhat'* 'contain', *soxranjat' / soxranit'* 'preserve', *xranit'* 'keep' which traditionally are expected to prefer Genitive in negative contexts. It argues that still there are some constructions when Accusative is even more preferable than Genitive with these very verbs. These cases could be explained taking into consideration that the corresponding verbs shift their meaning

(sometimes quite considerably) increasing the role of the presupposition of existence in their semantics.

Ekaterina Demjanova "Eksperijencial'noje znanije: konteksty glagolov vosprijatija" (Experiential knowledge: perception verbs and their complement syntax)

Ekaterina Demjanova studied the contexts of the so called "Genitive verbs", i.e. verbs which prefer Genitive under negation, mainly verbs of perception, like *videt'* 'see', njuxat' 'smell', *ispytat'* 'to have experience', *znat'* 'know'. But as far as Accusative becomes to be more widely spread in modern Russian negative constructions, normally these types of contexts allow both Genitive and Accusative. However there are some special types of contexts where Accusative turns out to be ungrammatical. The author shows that such an effect is provided by the semantic shift of the verb where the target meaning denotes a special experiential knowledge obtained by the Subject.

Anna Belyaeva "Ob'jectnyj genitiv otricanija pri glagolax obladanija i vosprijatija" (Object Genitive of negation with verbs of possession and perception)

Belyaeva's project began with the hypothesis that transitive verbs relating to possession (give, receive, get, take, borrow, return, buy, sell, lose, find, steal, etc.) would fall into two classes, differing with respect to whether or not the direct object was 'new' to the subject of the sentence, coming into his possession or field of perception in the course of the denoted action. This hypothesis was inspired in part by the behavior of such verbs in the Caucasian languages Adyghe and Komi, where the verbs with 'new' objects take objects with unmarked case (and accordingly 'lower referentiality') and those with 'familiar-to-the-subject' take case-marked, and hence referential, objects. Her results show the importance of focusing on semantically defined classes of verbs, because she establishes that for the verbs of possession and for verbs of perception, the case alternation under negation depends largely on two factors which play a particularly crucial role for these verbs: (i) entailment or implication of absence of the NP from the possession or immediate sphere of influence of the subject, and (ii) the factor noted above, of whether or not the direct object was 'new' to the subject; this factor is related to 'degree of referentiality' but not identical to its usual manifestation. Her paper gives more detailed development of and argumentation for the conclusions reached in her Year 2 oral report described above.

Aleksandr Letuchij "Genitiv, klassy glagolov i presuppozicija" (Genitive, verb classes and presuposition)

Letuchij focused on three classes of transitive verbs: (a) verbs expressing actions strongly affecting the patient (*ubit'* 'kill', *bit'* 'beat', *udarit'* 'hit'), (b) verbs of emotional perception or experience (three kinds of 'feel'), (c) verbs of speech (three kinds of 'say' or 'tell'). The goal was to determine for which verbs, under sentential negation, Genitive is characteristic, and for which Accusative, and why. His paper gives more detailed development of and argumentation for the conclusions reached in his Year 2 oral report described above.

David Ershler "Genitiv otricanija i nepacijentivnyje znachenija accuzativa: fenomenologija i semantika" (The Genitive of negation and non-patient Accusative meanings: phenomenology and semantics)

The study concerned Russian NP-adverbials of temporal or spatial extent, such as *dva kilometra* 'two kilometers', *tri chasa* 'three hours', in negative sentences, in uses in which they occur as quasi-complements in the Accusative in positive sentences. The main result was the discovery of semantic invariants which could explain all cases (excluding certain idiomatic or strongly lexicalized phrases) in which the use of Genitive is obligatory or possible. His paper gives more detailed development of and argumentation for the conclusions reached in his Year 2 oral report described above.

Elena Paducheva "Posleslovije. Genitiv otricanija: morfologija, semantika, sintaksis" (Epilogue. Genitive of Negation: Morphology, sementics, syntax).

In Paducheva's epilogue, she puts the given studies into historical context, both with respect to the history of the Genitive of Negation construction, and its gradual decline in modern Russian, and with respect to the long history of linguistic work on the topic, where she observes a gradual shift from attention to "usage" to greater attention to semantic contrasts, emphasized in all of our work on this project. She notes that the semantics of Subject Genitive of Negation is better understood than that of Object Genitive of Negation, and points out the importance of looking at different classes of verbs, some of which have semantic components quite close to those that play a role in Subject Genitive of Negation. She sees the greatest hope of unifying Subject and Object Genitive of Negation in the semantic property of implicature of non-existence in any of a number of relevant senses – in the world, in someone's personal sphere, in an observer's field of vision, etc.

4.2. Connecting the property-type hypothesis with other approaches

As work proceeds on Borschev et al (in preparation), we have been refining the property-type hypothesis and finding better ways to connect it to other factors often mentioned as relevant to the given case alternation. Kagan's recent dissertation (for which Partee served as an outside examiner) emphasized the absence of "Relative Existential Commitment" as the principal factor in unifying Genitive of Negation and Genitive of Intensionality; we find that there are cases where existence is presupposed but 'irrelevant' to the content of a proposition, and the property-type theory fares better than Kagan's account in applying equally well to attributive definites and to non-specific indefinites. But the two approaches have a great deal in common, and we are exploring ways to draw on the best of each.

We are also returning to some earlier ideas we had discussed with David Perlmutter for unifying syntactic and semantic approaches; the issue is not "syntax vs. semantics", but to what extent the semantic differences are correlated with syntactic differences. The property-type hypothesis is quite compatible with the idea that all alternating Genitive NPs are internal arguments, since most researchers assume that external arguments must be e-type.

4.3. Open issues for future work.

We see three large issues as particularly important for further progress on this seemingly limitless topic.

(i) A broader typological perspective would be very helpful. We have learned about a great deal of work that exists on differential object marking in a wide range of languages, often involving factors that bear some resemblance to the factors that influence Genitive of Negation (and of Intensionality) in Russian. We also know, superficially, about the wide

range of patterns concerning Genitive of Negation or its absence in the various Slavic languages, and a bit about its history in Russian. Both a Slavic-typology perspective and a broader typological perspective would add important sources of insight to these studies, and detailed work such as ours could likewise be useful for typological work.

(ii) Experimental psycholinguistic work could be a helpful supplement to introspective work, informal canvassing of native speakers, and corpus work, since intuitions on crucial examples are notioriously variable and unstable in this area.

(iii) Related to the variability in the data, it will be important in the long run to put this work in the context of a framework which has a way of dealing with the interaction of a considerable number of factors, including not only syntax, semantics, and morphology, but also stylistic choice, usage preferences that relate to historical change in progress, normative pressures, and other factors. Something like Optimality Theory may be helpful, but there are probably more factors to be dealt with than current OT approaches can easily handle. We do not propose to undertake such a project ourselves, but we want to note its importance. At present, the best we can do is to make clear that while we believe we have identified some of the most important semantic principles involved in Genitive of Negation, we are well aware that Gen/Nom and Gen/Acc alternations are not always explainable by semantics, or at least by semantics alone.