#### КОНФЕРЕНЦИЯ ОРГАНИЗОВАНА

# ТОМСКИМ ГОСУДАРСТВЕННЫМ УНИВЕРСИТЕТОМ МЕЖРЕГИОНАЛЬНОЙ АССОЦИАЦИЕЙ КОГНИТИВНЫХ ИССЛЕДОВАНИЙ (МАКИ) ЦЕНТРОМ РАЗВИТИЯ МЕЖЛИЧНОСТНЫХ КОММУНИКАЦИЙ ИНСТИТУТОМ ПСИХОЛОГИИ РАН КУРЧАТОВСКИМ ИНСТИТУТОМ

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# ЧЕТВЁРТАЯ МЕЖДУНАРОДНАЯ КОНФЕРЕНЦИЯ ПО КОГНИТИВНОЙ НАУКЕ

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Настоящий сборник включает материалы Четвёртой международной конференции по когнитивной науке / The Fourth International Conference on Cognitive Science, состоявшейся в Томске, 22–26 июня 2010 г.

Конференция посвящена обсуждению вопросов развития познавательных процессов, их биологической и социальной детерминированности, моделированию когнитивных функций в системах искусственного интеллекта, разработке философских и методологических аспектов когнитивных наук. В центре дискуссий были проблемы обучения, интеллекта, восприятия, сознания, представления и приобретения знаний, специфики языка как средства познания и коммуникации, мозговых механизмов сложных форм поведения. Специализированные симпозиумы были посвящены таким актуальным темам, как соотношение языка и мышления, исследование движений глаз, когнитивное компьютерное моделирование, память и бессознательное, нейрофизиологические механизмы организации поведения, философия и когнитивная наука.

Материалы представляют собой тезисы лекций, устных и стендовых докладов, а также выступлений на симпозиумах. Все тезисы прошли рецензирование и были отобраны в результате конкурсной процедуры. Они публикуются в авторской редакции.

В электронном виде эти материалы представлены на сайте конференции (www.cogsci2010.ru), а также на сайте Межрегиональной ассоциации когнитивных исследований (www.cogsci.ru).

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however, language (at least, Russian language – but it appears to be a much wider cross-linguistic tendency) seems unaware of this fact; the only "co-feelings" it reflects, are sostradanie <sochuvstvie> 'compassion' <'sympathy'>, and, to a lesser extent, soradovat'sia 'to co-

rejoice', but there are no words which denote \*co-fear, \*co-disgust, \*coshame, \*co-surprise, etc. to account for the fact that in real life, these emotions can also be shared, merely by observing them in another person.

## CROSS-CULTURAL COMPARISON OF MORAL JUDGMENTS: TESTING THREE PRINCIPLES OF HARM IN RUSSIAN AND AMERICAN POPULATIONS

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Moral norms and attitudes represent an component of human (Alexandrov, 2007), providing both constraints on human action and safety from those who attempt to cheat. To some extent, mature individuals in a given society are typically aware of the moral norms that are operative, and appreciate the consequences of transgressions. This is one aspect of their moral knowledge. But it is also the case that individuals often deliver rapid, automatic judgments for unfamiliar cases, suggesting that there is an implicit system of knowledge that may guide our intuitive judgments of right and wrong. This ability to rapidly and intuitively deliver moral judgments has been argued to be driven by a moral faculty, a mechanism that operates over a set of universal principles — a "universal moral grammar" (Hauser, 2006). On this view, the principles are shared across cultures, with cultural variation created by differences in certain parametric settings.

To explore the validity of the moral grammar thesis, and thus, the analogy to language, we presented Russian subjects with moral scenarios that are distinguished by a large English-and Dutch-speaking population by implicitly appealing to three principles of harm (Hauser, 2006, Cushman, Young & Hauser, 2006; Hauser et al., 2009): 1 - means-based harms are worse than side-effects; 2- action-based harms are worse than omission-based harms; 3 - contact-based harms are worse than non-contact-based harms.

Method. To test these three principles we used The Moral Sense Test developed by Cognitive Evolution Laboratory of Harvard University (Hauser et al., 2007), translating into Russian the same set of dilemmas developed by Cushman and colleagues (2006) for the English version of the test. Subjects voluntary logged to the Russian version of the Moral Sense Test Web site, www.rusmoral.ru. After completing a demographic questionnaire, subjects received 32 moral scenarios. Thirty test scenarios and two control scenarios were counterbalanced between subjects. For each scenario, subjects rated the protagonist's action or omission on a scale from 1 to 7, where 1 indicated "Forbidden", 4 indicated "Permissible", and 7 indicated "Obligatory". The test scenarios comprised 18 controlled pairs. Six for each principle or distinction.

**Results**. We analyzed responses of 303 subjects who completed the test and did not fail the two control scenarios. Average age of subjects was 27 years old and the sample had a female bias (74%). Subjects were fluent Russian speakers and 95% listed Russian as their primary language. Most subjects indicated they were from Russia.

Paired-sample t-tests were performed on each of the 18 pairs of scenarios to determine whether subjects rated one scenario in the pair significantly more permissible than the other in the direction predicted by the relevant principle. Statistically significant differences were achieved in 16 of 18 pairs at .05, two-tailed (N=303). Across these scenarios subjects consistently judged means-based harms as worse than side-effects, actions worse than omissions, and contact-based harms as worse than non-contact.

Significant correlations (Spearman rank R) between Mean difference values in the pairs of scenarios were observed within the Intention (0,94; p<.005) and Contact (0,94; p<.005) principles. However the correlation within the Action principle (0,55; p>.25) was not found. Moreover, of the two scenarios that failed to

reach statistical significance, both were actomission pairs. Given that both English- and Dutch-speaking subjects perceived significant differences among all six act-omission pairs, the less consistent effects among the Russian population may reveal cultural differences, due to aspects perceived perhaps responsibility.

In summary, these data conform to the effects shown in the English speaking sample of Cushman and colleagues (2006), and to the data on action-omission for a Dutch sample (Hauser et al., 2009). These results are therefore consistent with the view that such principles cut across significant cultural variation in expressed moral behavior and formal laws, and is thus consistent with the moral grammar thesis (Hauser, 2006).

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#### HORN'S COMMUNICATION PRINCIPLES AND A COMPETITION MODEL OF LANGUAGE USE

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In German, in spite of the relatively clear rules of case agreement inside a NP, there is a grey area of long postposed NPs where

(1) lebte die Idee vom Krieg als eines existed the idea of.the war.DAT as a.GEN

(2) Der Zwiespalt [...] zerriss ihn fast: The dichotomy tore him.ACC nearly

Such "errors" are typical for competent speakers, and are often found in newspaper texts. As all four cases of German appear as incongruent cases, Vater (2006) sees therein an evidence for a general breakup of the case system in German.

I argue for an alternative explanation, where this grey area is modelled as an interplay of heterogeneous linguistic parameters 'length', agreement is all but clear. In the following attested examples grammars prescribe case congruence (e.g. Duden 2005), but in (1) the appositive phrase introduced by the conjunction als surfaces in incongruent genitive, and in (2) the right-dislocated NP comes in nominative instead of congruent accusative:

sozialen Raumes fort social.GEN space.GEN further

[Th. Kühne, 2006, Kameradschaft] Fürst Georg III., der Reformator [...] Prince Georg III the.NOM reformer.NOM [Chrismon, 05/2005]

'topicality', 'discourse structure' and 'prosodic and syntactic integration'. As the driving force behind that interplay I propose two general communication principles, the H(earer)-principle the S(peaker)-principle. These are a modification of the hearer-based Q-principle and the speaker-based R-principle formulated by Horn (1984) in the spirit of Gricean maxims:

(3) Q (hearer-based): Say as much as you can (given R) R (speaker-based): Say no more than you must (given Q)

[Horn 1984: 13]

Horn's principles refer back to Zipfian forces of unification and diversification with an important difference: for Horn, it is the amount of information that matters; the absolute

articulatory effort that was crucial for Zipf (1949) plays a secondary role.

I argue for the following restatement of Horn's principles:

- (4) H (hearer-based): Produce as much simple finite clauses as you can (given S) S (speaker-based): Produce as few simple finite clauses as you can (given H)
- simple finite clauses are not only structural units, but also processing ones. Bock & Cutting (1992)

(4) is based upon the assumption that show in speech production experiments that number errors due to an interferring NP are significantly fewer if this NP is part of a relative