Developing auditory comprehension subtests of the Russian Aphasia Test

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There is a lack of modern quantitative language assessment tests in Russian, integrating neuropsychological and psychometric traditions, and allowing to specify the type and severity of linguistic deficits in individuals with different aphasia profiles. In response to these clinical and research needs, a novel standardized aphasia test – the Russian Aphasia Test (RAT) – is currently being developed. The principal novelty of this test is that each subtest corresponds to a specific level of linguistic processing in one of the four language domains: auditory comprehension, oral production, reading, and writing. In selection of specific tasks for each level of processing we took into account the structure and materials of contemporary standardized aphasia tests in other languages (e.g., Comprehension Aphasia Test, Howard et al., 2010; Psycholinguistic Assessment of Language Processing in Aphasia, Kay et al., 1996), as well as modern (psycho)linguistics theories, and the structural and phonetic specifics of the Russian language. Here we present data on preliminary standardization of auditory comprehension subtests that included the following tasks: • Phonemic – judgment of minimal pairs of nonwords (n=100) and words (n=72). The following factors were taken into account in the design of the subtest: phoneme manner and place of articulation, syllabic structure and position, frequency and imageability (for words). • Lexical – lexical decision (n=120). Lexical frequency, word length, and the degree of similarity of non-words to real words were taken into account. • Lexical-semantic processing – word to picture matching for objects (n=67) and actions (n=68). Items were selected based on naming and image agreement. • Syntactic – sentence to picture matching for various syntactic constructions (n=68), including reversible passives, subject and object clefts, and prepositional phrases. • Discourse – comprehension of orally presented stories of varying lexical-semantic and syntactic difficulty indexed by response accuracy to a set of 16 yes-no questions on explicit and implicit content of the stories. Each subtest was completed by at least 20 individuals with aphasia and 20 healthy age-matched controls. To maximize validity and reliability of the subtests, "poor" items were removed according to the following principles. First, items that were answered erroneously by two or more healthy participants were eliminated. Second, based on item difficulty and corrected-item-total correlation derived for the aphasia group, most sensitive and valid items were retained. Also, it was ensured that each influential psychometric property was represented in the refined set by a wide range of values. Thus, a final smaller set of items for each subtest was selected for further norming and standardization. We will discuss in detail the various conceptual and psychometric considerations that went into

the design of the subtests and affected item selection. This project is supported by Russian Scientific Foundation for Humanities, grant №14-04-00596.

References

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