

HABILITATION THESIS REVIEWER'S REPORT

Masaryk University

Faculty

Faculty of Social Studies

Applicant

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Habilitation thesis

Cross-cultural similarities and differences in perception of tasks of varying complexity

Reviewer

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Cross-cultural research on perception and cognition has been and remains one of the most challenging and methodologically demanding areas of contemporary psychology. It requires not only technical sophistication and theoretical precision, but also intellectual caution, since researchers constantly navigate between universal cognitive mechanisms and culturally specific patterns of interpretation and attention. The present habilitation thesis enters this complex terrain with notable confidence, analytical rigor, and, in my view, scholarly maturity.

Overall, the presented set of studies forms a coherent, methodologically ambitious, and intellectually well-integrated research program addressing one of the central questions in contemporary cross-cultural cognitive psychology: when, how, and under what conditions cultural differences in perception and cognition emerge. Particularly commendable is the author's decision to move beyond simplistic binary formulations and instead investigate the variability, context-dependence, and methodological complexity of so-called analytic-holistic cognition across multiple experimental paradigms.

A major strength of the research lies in its cumulative design. The candidate organizes the studies around several clearly connected goals: testing cognitive differences across varying levels of task complexity, evaluating both individual- and macro-level predictors, assessing convergence across methods, and strengthening methodological foundations of cross-cultural inference. This gives the work strong internal coherence and the character of a genuine research program rather than a collection of loosely related publications.

Methodologically, the studies are impressive in both breadth and sophistication. The combination of psychometric analysis, reaction-time modeling, eye-tracking, multilevel statistics, and immersive virtual-reality paradigms demonstrates substantial technical competence and familiarity with contemporary methodological standards. Particularly

positive is the emphasis on harmonized protocols, model-based statistical approaches, and careful attention to adaptation and measurement-equivalence issues, which are often neglected in cross-cultural research.

The empirical findings themselves are discussed with commendable nuance. The author consistently emphasizes their selective, metric-specific, and context-dependent nature. This cautious interpretive style substantially strengthens the credibility of the work. Especially valuable is the conclusion that “analytic–holistic” cognition does not appear to function as a single stable “metastyle,” but rather as a family of partially overlapping processes that emerge differently depending on the task and measurement approach. This is a theoretically important contribution that moves the discussion beyond somewhat rigid East–West dichotomies.

Equally impressive is the critical treatment of commonly used predictors such as self-construal and individualism–collectivism measures. The candidate openly demonstrates psychometric fragility, weak convergence, and limited predictive power of some classical instruments across cultural contexts. This willingness to critically reassess dominant paradigms reflects scholarly maturity and methodological independence.

Some minor reservations ought to be noted. As the author himself acknowledges, many samples are composed primarily of university students, which limits broader generalizability. In addition, despite important efforts toward broader inclusion, much of the research still operates within the traditional East–West comparative framework characteristic of the field. However, I do not view this as a serious weakness of the thesis itself. I will address this later in some detail. Rather, in brief, it reflects broader structural realities of cross-cultural cognitive research, where methodologically rigorous and comparable large-scale studies from many regions of Africa, Latin America, or parts of Asia remain comparatively limited.

A found a strong and intellectually sophisticated literature review that demonstrates excellent command of the major traditions in cross-cultural cognition research. The candidate successfully integrates historical foundations, Gestalt theory, cognitive styles, and contemporary holistic–analytic cognition into a coherent and logically structured narrative. Particularly commendable is the breadth of empirical literature covered and the ability to connect classical theories with contemporary research paradigms. The text reflects scholarly maturity, conceptual clarity, and strong familiarity with both theoretical and methodological developments in the field.

Especially notable is the discussion of holistic versus analytic cognition, where the candidate synthesizes a large body of empirical findings across multiple cognitive domains, including attention, categorization, attribution, reasoning, and scene perception. The review moves beyond a purely descriptive approach and demonstrates awareness of broader conceptual debates within cross-cultural psychology. The inclusion of more recent work extending beyond the traditional East–West dichotomy is also a significant strength.

The second section of the Thesis would benefit from several modest additions. Contemporary influences such as globalization, anti-globalization, digital media, and increasing cultural hybridity could be discussed somewhat more fully as factors potentially reshaping traditional cognitive differences.

The methodology of this research demonstrates both conceptual consistency and diversity. Particularly commendable is the progression from methodological and psychometric studies toward increasingly sophisticated experimental paradigms, including reaction-time modeling, eye-tracking, and immersive virtual reality. The studies collectively form a clear and cumulative research agenda rather than a collection of (maybe seemingly) disconnected projects.

A major strength of the research under review is that the candidate participated in large-scale multinational collaborations involving numerous cultural groups and samples across Europe, Asia, and Africa. The use of advanced quantitative methods, multilevel modeling, psychometric validation, measurement invariance testing, and eye-tracking methodology reflects substantial methodological competence and familiarity with contemporary standards in cross-cultural psychological research.

Especially notable is the combination of conceptual rigor with methodological innovation. The transition from traditional perceptual tasks to immersive VR environments demonstrates originality and ambition. The replication logic underlying Studies V and VI is another important strength, particularly given contemporary concerns about reproducibility in psychology.

The candidate's contributions appear substantial throughout the research program, especially in studies where the researcher served as leading author and was directly responsible for conceptualization, methods, formal analyses, and drafting of manuscripts.

Some minor reservations ought to be noted, maybe to repeat. Many studies described here rely predominantly on university student samples, which somewhat limits broader generalizability. In addition, several projects continue to operate within the traditional East–West comparative framework that has long dominated the field of cross-cultural cognition. At the same time, I do not view this framework itself as problematic or outdated (not at all!); it remains theoretically meaningful and empirically productive. Rather, one may simply wish for a greater number of methodologically rigorous studies incorporating more diverse cultural samples and underrepresented regions. As I note later in the review, such research is gradually emerging, although its methodological quality remains uneven in some areas. Nevertheless, the overall methodological quality of the presented research is high and reflects a mature, coherent, and productive scholarly profile.

The papers and the Thesis demonstrate the candidate's clear ability to synthesize a broad and methodologically diverse body of research into a coherent theoretical narrative. Particularly

commendable is the author's willingness to engage not only with statistically significant findings, but also with null, inconsistent, and task-dependent results. This gives the discussion considerable intellectual credibility and reflects a contemporary understanding of the complexity and methodological challenges of cross-cultural cognitive research.

Rather than reproducing traditional binary distinctions uncritically, the candidate argues convincingly that "analytic" and "holistic" cognition are better understood as partially overlapping and context-dependent processes rather than as a single latent cognitive style. It should also be noted that the term "holistic" itself has become somewhat overused in contemporary English discourse and occasionally distorted in popular usage; however, this does not diminish the theoretical value or deeper conceptual meaning of the construct as employed within cross-cultural cognitive psychology. This argument is theoretically sophisticated and supported consistently across multiple studies presented in the thesis. The discussion therefore moves beyond mere replication of established paradigms and contributes to ongoing theoretical refinement within the field.

The candidate demonstrates awareness of psychometric limitations, measurement invariance problems, construct-validity concerns, and the broader difficulties of translating abstract cultural constructs into reliable empirical indicators. The treatment of individualism–collectivism scales is especially thoughtful. Instead of defending problematic instruments uncritically, the author openly discusses their instability across cultural contexts and the weak relationship between self-report measures and behavioral outcomes. This critical yet constructive stance reflects scholarly maturity and methodological competence.

The proposed future research directions—including behavioral measures of self-construal, combined emic–etic approaches, longitudinal designs, ecological predictors, and multimethod convergence modeling—are innovative, realistic, and well-grounded in current methodological debates within cultural psychology and cognitive science. The author clearly demonstrates an ability not only to conduct empirical research, but also to identify productive directions for the future development of the field.

Limitations are not included merely as a formal requirement but are integrated into broader theoretical reflection about the state of the field itself. The discussion of sample composition, the frequent reliance in psychology on relatively narrow populations from Western industrialized societies, limited convergence across measures, and broader inference constraints is balanced and academically responsible. While specialists refer to this issue through the acronym "WEIRD" (Western, Educated, Industrialized, Rich, Democratic), the term itself has not gained much traction beyond professional circles and often requires additional explanation (not here, of course).

Some relatively minor reservations should be mentioned here. At times, the discussion becomes conceptually dense, and certain passages could benefit from somewhat tighter stylistic organization and clearer prioritization of key arguments. In addition, somewhat

greater engagement with contemporary replication debates, globalization processes, digital cognition, and increasingly hybrid cultural identities could further enrich the broader theoretical framing.

Overall, the discussion part of the thesis reflects a highly competent and independent scholar capable of critical synthesis, methodological reflection, and theoretically informed interpretation of complex empirical findings. The section successfully integrates empirical results with broader conceptual debates and leaves the impression of a researcher who is able not only to apply existing paradigms, but also to critically reassess and refine them.

The bibliography is extensive, well structured, and highly appropriate for the topic of the habilitation thesis. It demonstrates broad familiarity with both classical and contemporary literature in cross-cultural psychology, cognitive psychology, perception research, and methodological debates surrounding cultural cognition. Particularly commendable is the balanced integration of foundational authors—such as Richard E. Nisbett, Shinobu Kitayama, John W. Berry, Herman Witkin, Daniel Navon, etc.—with more recent empirical and methodological contributions. The bibliography reflects a strong command of the major theoretical traditions relevant to the study of analytic–holistic cognition and cross-cultural differences in perception.

A major strength is the inclusion of both classic landmark studies and newer methodological critiques and refinements. The candidate does not rely exclusively on canonical East–West literature, but also incorporates more recent discussions concerning measurement validity, replication issues, cultural heterogeneity, and ecological predictors of cognition. The presence of literature on measurement invariance, psychometric validation, and methodological limitations further strengthens the scholarly quality of the work.

The bibliography is also notable for its interdisciplinary breadth. In addition to mainstream cross-cultural psychology, it includes work related to visual attention, Gestalt theory, cognitive styles, eye-tracking, ecological psychology, and virtual-reality-based perception research. This breadth supports the multidimensional character of the thesis and demonstrates the candidate's ability to integrate literature from several adjacent fields.

Another positive aspect is the inclusion of several studies questioning or complicating dominant paradigms, such as critiques of simplistic individualism–collectivism models and studies reporting weak or inconsistent links between self-construal and cognitive style. This suggests that the candidate approached the literature critically rather than selectively.

A few minor omissions. Given the thesis's strong methodological orientation, somewhat greater engagement with recent open-science and replication debates in psychology could further strengthen the bibliography. One might also raise questions about the relative absence of research addressing globalization, anti-globalization trends, digital cognition, and transnational or hybrid identities—although it should be acknowledged that systematic

empirical research in these areas, particularly within cross-cultural cognitive psychology, remains comparatively limited and fragmented at present.

Similarly, and again, some critics could recommend broader inclusion of scholarship originating from Africa, Asia, and Latin America. In my humble opinion, however, this issue should be approached cautiously. My own assessment suggests that while such studies certainly exist and deserve continued attention, many remain methodologically uneven, use relatively small or weakly controlled samples, or rely on less rigorous psychometric procedures. In this respect, the candidate's decision to prioritize theoretically influential and methodologically robust studies appears justified and academically responsible. At the same time, future editions or follow-up work may benefit from incorporating a new and broader range of emerging regional scholarship as the field continues to mature internationally.

Overall, the bibliography reflects excellent scholarly preparation, strong theoretical grounding, and broad familiarity with both foundational and contemporary debates in cross-cultural cognitive research.

Returning to the beginning of the thesis (I am going backwards in the file) and its originally stated goals, I believe the author was principally successful in implementing the proposed tasks and maintaining coherence throughout the work. The overall aims are formulated clearly and reflect a timely and relevant research agenda within contemporary cross-cultural cognitive psychology. Particularly effective is the way the thesis connects broader technological and societal developments—such as the growing importance of visual communication, immersive environments, and digitally mediated perception—with classical psychological questions about attention, cognition, and culture.

The central goal of the thesis—to investigate cross-cultural similarities and differences in visual perception and cognition across tasks of varying complexity—is consistently reflected in the empirical studies. The research progresses logically (and soundly) from psychometric and methodological questions toward increasingly sophisticated experimental designs, including reaction-time modeling, eye-tracking, and virtual-reality environments. This gives the work a strong sense of continuity and cumulative development rather than the impression of separate unrelated studies.

The structure of the thesis also works well overall. The theoretical introduction provides an appropriate framework for the later empirical sections, while the discussion section succeeds in integrating the findings into broader conceptual and methodological debates. Importantly, the author does not simply summarize results “mechanically,” but critically reflects on limitations, inconsistencies, and future directions of the field. In this respect, the tasks outlined at the beginning of the thesis are fully carried through into the later sections.

I particularly appreciated the author's willingness to question simplistic assumptions and to openly discuss methodological difficulties, especially regarding psychometric fragility,

measurement invariance, and the limited convergence between some cognitive-style measures. This gives the thesis analytical depth and intellectual honesty.

There are, naturally, several areas where the work could be expanded further. The introductory discussion of technological transformation and visual communication is engaging and contemporary, although its direct connection to some later empirical studies occasionally remains somewhat implicit. Likewise, themes such as digital cognition, online visual environments, algorithmically shaped attention, or globalization-related cognitive changes could perhaps have been incorporated more systematically into the broader theoretical framework. Some readers may also wish to see greater engagement with non-Western scholarship beyond the dominant Euro-American and East Asian traditions, but I have addressed this earlier in my review.

Overall, the thesis fulfills its stated goals successfully and presents a coherent, methodologically mature, and intellectually ambitious research program. In my assessment, the submitted habilitation work meets the standards expected for the habilitation procedure and provides strong evidence of the candidate's scholarly independence, methodological competence, and sustained contribution to the field. The thesis therefore deserves a positive evaluation within the habilitation process.

Reviewer's questions for the habilitation thesis defence (number of questions up to the reviewer)

1. Your findings repeatedly suggest that “analytic” and “holistic” cognition do not converge into a single stable cognitive style across tasks. In your view, how important is it for cross-cultural psychology to reconsider the very assumption that such broad cognitive styles exist as unified constructs rather than as clusters of loosely connected processes? Could this shift fundamentally alter the field's theoretical foundations?
2. Several of your studies indicate that classic predictors such as individualism–collectivism and self-construal scales have limited explanatory power and problematic psychometric properties across some cultural contexts. How important do you believe it is for the field to move away from traditional self-report measures toward more behavioral, ecological, or technologically mediated indicators of culture? What would be the greatest methodological challenge in such a transition?
3. Your thesis touches indirectly on the growing influence of digitally mediated visual environments and immersive technologies. To what extent do you think social media, gaming environments, and AI-driven visual ecosystems may already be reshaping traditional cross-cultural cognitive differences described in the classical East–West literature? Could some of these differences diminish substantially in future generations?
4. Many contemporary discussions in psychology emphasize the limitations of relatively narrow university-based samples and the dominance of Western and East Asian

comparative frameworks. At the same time, as we know, methodologically rigorous large-scale studies from other regions remain, sadly, limited. In your opinion, how should researchers balance the understandable desire for greater cultural diversity with the equally important need for methodological replicability and psychometric rigor?

Conclusion

The habilitation thesis entitled “Cross-cultural similarities and differences in perception of tasks of varying complexity” by Ing. Mgr. Jiří Čeněk, Ph.D., **fulfils** requirements expected of a habilitation thesis in the field of Psychology.

Date: May 7, 2026

