

Supporting Information

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SI Text

Neuropsychological Assessment. Neuropsychological assessment of this group of South African UWD and healthy control research participants was first performed in Cape Town in May 2007. All of the participants live in the remote Northern Cape mountain-desert area of Namaqualand. For many of them, coming to Cape Town for MRI scanning and neuropsychological testing was their first journey outside of Namaqualand. Namaqualand is an economically impoverished region where the quality of school education is far below Western norms. It was therefore not surprising to find that this group did not perform well on the Wechsler Adult Intelligence Scale (WAIS-III) (1), which was developed in a First World setting according to Western cultural and educational norms. The Wechsler scale purports to measure “the global capacity of a person to act purposefully, to think rationally, and to deal effectively with his environment” (1). As can be seen in Table S1, most of the participants in our study (in total 3 UWD subjects and 10 control subjects) hold jobs in a region where unemployment is >30%.

The problems inherent in using the WAIS-III in a transcultural setting are made starkly apparent by the fact that in May 2007, several of these participants scored in the borderline range. This contradiction together with the progressive course of amygdala calcification in UWD made it necessary to test everyone again in 2010. This time we took note of the Western, Educated, Industrialized, Rich, and Democratic (WEIRD) discussion that is currently galvanizing transcultural neuroscience (2, 3) and made several changes in the way the tests were administered.

Participants were now tested by using the following adaptations:

i. In their local environment.

- ii. By a local psychologist who speaks the same Afrikaans dialect as they do.
- iii. Using an abbreviated test, the Wechsler Abbreviated Scale of Intelligence (WASI, which provides for a reliable IQ estimate) (4), because participants reported being overwhelmed by the burden of WAIS-III testing in 2007.
- iv. The WASI verbal tests were translated by local linguists into the Afrikaans dialect spoken in Namaqualand.

The 2010 IQ scores (reported in Table S2) show a global increase of ~10%, with everyone now falling into the low-normal range. The fact that the changes we made brought about this improvement is in line with the WEIRD discussion (2, 3). Specifically, we attribute this improvement to the fact that in 2007, participants were tested in a strange environment and by an unfamiliar person of a different race (especially problematic in post-Apartheid South Africa), culture, dialect, and socioeconomic position. It can, however, be stated with confidence that the 2010 IQ scores are still an underestimate of the participants' capabilities. Firstly, although the difference in conditions between 2007 and 2010 made a significant difference, we were obviously unable to overcome all transcultural, language, and educational biases inherent in the WASI (5). Secondly, even these improved scores are inconsistent with the participants' ability to compete very favorably for semiskilled jobs under extremely adverse economic conditions.

Social Economic Matching. UWD and control subjects all come from the Namaqualand region of South Africa and have strongly comparable standards of living, and their income or social security varies between 2,000 and 3,000 ZAR. They have equal access to government health care, education, and housing.

1. Wechsler D (1997) *Wechsler Adult Intelligence Scale-III* (Psychological Corporation, San Antonio).
2. Henrich J, Heine SJ, Norenzayan A (2010) The weirdest people in the world? *Behav Brain Sci* 33(2-3):61–83, discussion 83–135.
3. Henrich J, Heine SJ, Norenzayan A (2010) Most people are not WEIRD. *Nature* 466(7302):29.

4. Wechsler D (1999) *Wechsler Abbreviated Scale of Intelligence* (Psychological Corporation, San Antonio).
5. Nell V (2000) *Cross-Cultural Neuropsychological Assessment: Theory and Practice* (Lawrence Erlbaum, Mahwah, NJ).

Table S1. Social and occupational status of the participants

Participants	Social status
Patients	
UWD 1	One child, tourism advisor
UWD 2	One child, housewife
UWD 3	Own cosmetics business
Controls	
1	Community health worker
2	Two children, housewife
3	Housewife
4	Clinic assistant
5	Three children, community health worker
6	Three children, security guard
7	One child, cashier
8	Assistant nurse
9	One child, clinic assistant
10	Community health worker
11	One child, factory worker
12	Social worker

