

‘Stunning breadth of scholarship’
Joseph Henrich, Human evolutionary biology,
Harvard University

**‘Wonderfully refreshing
and thought-provoking’**
Peter Frankopan, History, Oxford
University

**‘Makes sense of our
historical moment’**
Joshua Greene, Psychology, Harvard
University

‘Hugely enjoyable’
Ian Morris, Archaeology, Stanford
University

**‘Muthukrishna has a heart as
big as his intellect’**
Andrew McAfee, MIT Sloan School of
Management

‘A fabulous book’ **‘Dense yet
accessible read’**
The Economist The Guardian



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The Guardian

A Theory of Everyone

Who we are
How we got here
Where we are
going

Michael
Muthukrishna

‘Mind expanding – this book will change your
view of the world forever.’ Matthew Syed

**‘A Theory of Everyone is for
everyone’**
Walter Sinnott-Armstrong, Philosophy, Duke
University

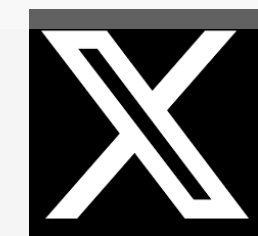
‘Ambitious and breathtaking sweep’
David Halpern, Behavioural Insights Team

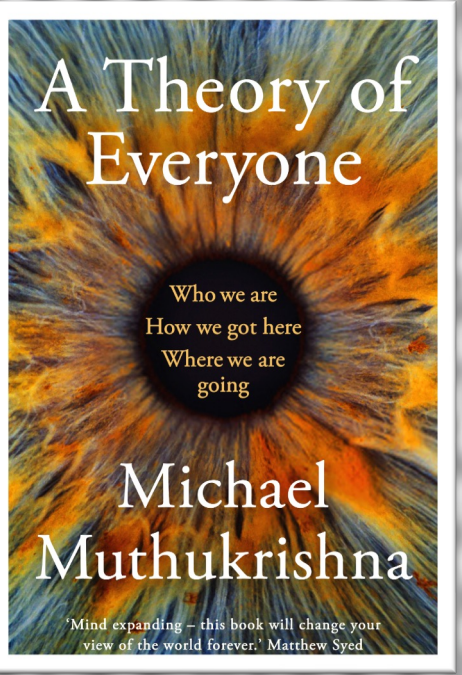
‘Extremely important’
Charles Hall, Energy scientist,
SUNY

**‘Marvellous, rich and
entertaining’**
Kevin Lala, Biology, University of St
Andrews

**‘Astonishing... will change
the way you think’**
Nichola Raihani, Evolution and
behavior, UCL

**‘The most important book you
will read this year’**
Brian Hare, Primatology and psychology,
Duke University





Michael Muthukrishna

A THEORY OF EVERYONE

*The New Science of **Who** We Are,
How We Got Here,
and **Where** We're Going*

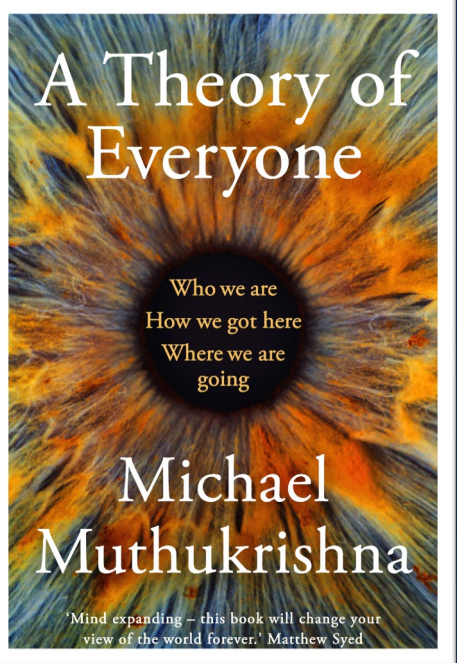
"A brilliant tour de force that takes us on an extraordinary journey
into the fundamental dynamics of what makes us human."

—MICHELE GELFAND



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And God said

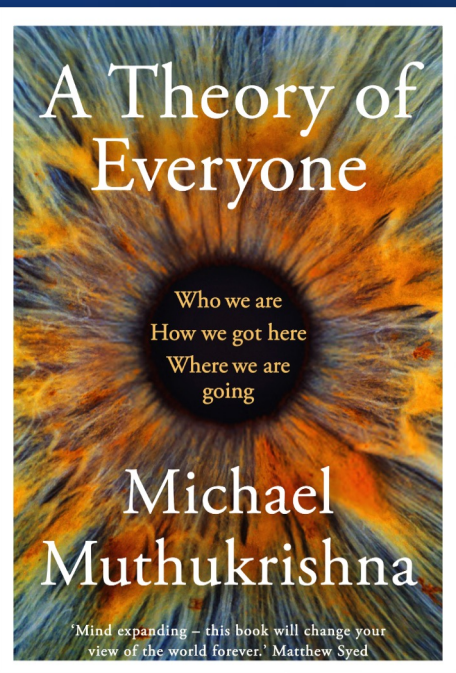
$$\nabla \cdot \vec{E} = \frac{\rho}{\epsilon_0}$$

$$\nabla \cdot \vec{B} = 0$$

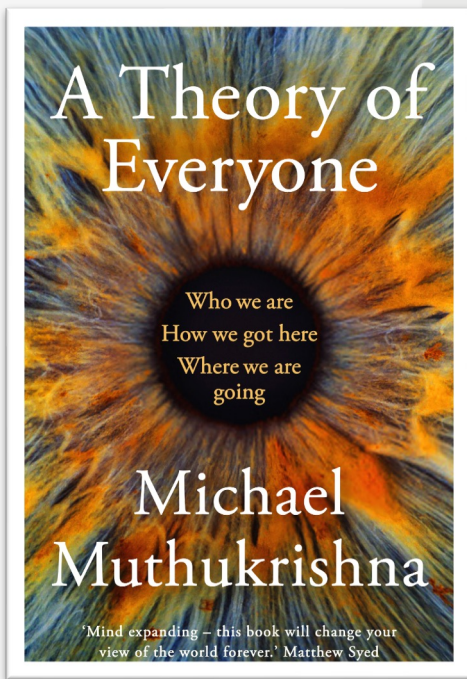
$$\nabla \times \vec{E} = -\frac{\partial \vec{B}}{\partial t}$$

$$\nabla \times \vec{B} = \mu_0 \vec{J} + \frac{1}{c^2} \frac{\partial \vec{E}}{\partial t}$$

and there was light.



A THEORY OF



And God said

$$\nabla \cdot \vec{E} = \frac{\rho}{\epsilon_0}$$

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and there was light.

*Science of Who We Are,
How We Got Here,
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A Theory of Everyone

Who we are
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Michael Muthukrishna

"Mind expanding - this book will change your view of the world forever." Matthew Syed

The Periodic Table of the Elements

<div><div><div>Atomic Number</div><div>Atomic Weight</div><div>Symbol</div><div>Name</div></div><div><div>22</div><div>47.90</div><div>Ti</div><div>Titanium</div></div><div><div>black solid</div><div>blue liquid</div><div>red gas</div><div>white synthetically prepared</div><div>most stable isotope</div></div></div>																		<div><div><div>DA</div><div>DESTINY S AGENT</div><div>+44(0)7990521419</div><div>www.destinysagent.com</div></div></div>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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colspan="14"></td><td>Argon</td><td></td></tr><tr><td>19</td><td>39.10</td><td>20</td><td>40.08</td><td>21</td><td>44.96</td><td>22</td><td>47.90</td><td>23</td><td>50.94</td><td>24</td><td>51.996</td><td>25</td><td>54.94</td><td>26</td><td>55.85</td><td>27</td><td>58.93</td><td>28</td><td>58.70</td><td>29</td><td>63.55</td><td>30</td><td>65.37</td><td>31</td><td>69.72</td><td>32</td><td>72.59</td><td>33</td><td>74.92</td><td>34</td><td>78.96</td><td>35</td><td>79.90</td><td>36</td><td>83.80</td></tr><tr><td>K</td><td></td><td>Ca</td><td></td><td>Sc</td><td></td><td>Ti</td><td></td><td>V</td><td></td><td>Cr</td><td></td><td>Mn</td><td></td><td>Fe</td><td></td><td>Co</td><td></td><td>Ni</td><td></td><td>Cu</td><td></td><td>Zn</td><td></td><td>Ga</td><td></td><td>Ge</td><td></td><td>As</td><td></td><td>Se</td><td></td><td>Br</td><td></td><td>Kr</td><td></td></tr><tr><td>Potassium</td><td></td><td>Calcium</td><td></td><td>Scandium</td><td></td><td>Titanium</td><td></td><td>Vanadium</td><td></td><td>Chromium</td><td></td><td>Manganese</td><td></td><td>Iron</td><td></td><td>Cobalt</td><td></td><td>Nickel</td><td></td><td>Copper</td><td></td><td>Zinc</td><td></td><td>Gallium</td><td></td><td>Germanium</td><td></td><td>Arsenic</td><td></td><td>Selenium</td><td></td><td>Bromine</td><td></td><td>Krypton</td><td></td></tr><tr><td>37</td><td>85.47</td><td>38</td><td>87.62</td><td>39</td><td>88.91</td><td>40</td><td>91.22</td><td>41</td><td>92.91</td><td>42</td><td>95.94</td><td>43</td><td>(98)</td><td>44</td><td>101.07</td><td>45</td><td>102.91</td><td>46</td><td>106.40</td><td>47</td><td>107.87</td><td>48</td><td>112.41</td><td>49</td><td>114.82</td><td>50</td><td>118.69</td><td>51</td><td>121.75</td><td>52</td><td>127.60</td><td>53</td><td>126.90</td><td>54</td><td>131.30</td></tr><tr><td>Rb</td><td></td><td>Sr</td><td></td><td>Y</td><td></td><td>Z</td><td></td><td>Nb</td><td></td><td>Mo</td><td></td><td>Tc</td><td></td><td>Ru</td><td></td><td>Rh</td><td></td><td>Pd</td><td></td><td>Ag</td><td></td><td>Cd</td><td></td><td>In</td><td></td><td>Sn</td><td></td><td>Sb</td><td></td><td>Te</td><td></td><td>I</td><td></td><td>Xe</td><td></td></tr><tr><td>Rubidium</td><td></td><td>Strontium</td><td></td><td>Yttrium</td><td></td><td>Zirconium</td><td></td><td>Niobium</td><td></td><td>Molybdenum</td><td></td><td>Technetium</td><td></td><td>Ruthenium</td><td></td><td>Rhodium</td><td></td><td>Palladium</td><td></td><td>Silver</td><td></td><td>Cadmium</td><td></td><td>Indium</td><td></td><td>Tin</td><td></td><td>Antimony</td><td></td><td>Tellurium</td><td></td><td>Iodine</td><td></td><td>Xenon</td><td></td></tr><tr><td>55</td><td>132.91</td><td>56</td><td>137.33</td><td></td><td></td><td>72</td><td>178.49</td><td>73</td><td>180.95</td><td>74</td><td>183.85</td><td>75</td><td>186.21</td><td>76</td><td>190.20</td><td>77</td><td>192.22</td><td>78</td><td>195.09</td><td>79</td><td>196.97</td><td>80</td><td>200.59</td><td>81</td><td>204.37</td><td>82</td><td>207.19</td><td>83</td><td>208.98</td><td>84</td><td>(209)</td><td>85</td><td>(210)</td><td>86</td><td>(222)</td></tr><tr><td>Cs</td><td></td><td>Ba</td><td></td><td>•</td><td></td><td>Hf</td><td></td><td>Ta</td><td></td><td>W</td><td></td><td>Re</td><td></td><td>Os</td><td></td><td>Ir</td><td></td><td>Pt</td><td></td><td>Au</td><td></td><td>Hg</td><td></td><td>Tl</td><td></td><td>Pb</td><td></td><td>Bi</td><td></td><td>Po</td><td></td><td>At</td><td></td><td>Rn</td><td></td></tr><tr><td>Cesium</td><td></td><td>Barium</td><td></td><td></td><td></td><td>Hafnium</td><td></td><td>Tantalum</td><td></td><td>Tungsten</td><td></td><td>Rhenium</td><td></td><td>Osmium</td><td></td><td>Iridium</td><td></td><td>Platinum</td><td></td><td>Gold</td><td></td><td>Mercury</td><td></td><td>Thallium</td><td></td><td>Lead</td><td></td><td>Bismuth</td><td></td><td>Polonium</td><td></td><td>Astatine</td><td></td><td>Radon</td><td></td></tr><tr><td>87</td><td>(233)</td><td>88</td><td>226.03</td><td></td><td></td><td>104</td><td>(261)</td><td>105</td><td>(262)</td><td>106</td><td>(266)</td><td>107</td><td>(262)</td><td>108</td><td>(265)</td><td>109</td><td>(266)</td><td>110</td><td>(281)</td><td>111</td><td>(280)</td><td>112</td><td>(277)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Fr</td><td></td><td>Ra</td><td></td><td>••</td><td></td><td>Rf</td><td></td><td>Ha</td><td></td><td>Sg</td><td></td><td>Bh</td><td></td><td>Hs</td><td></td><td>Mt</td><td></td><td>Ds</td><td></td><td>Rg</td><td></td><td></td><td></td><td>(113)</td><td></td><td></td><td></td><td>(115)</td><td></td><td></td><td>(117)</td><td></td><td></td><td></td></tr><tr><td>Francium</td><td></td><td>Radium</td><td></td><td></td><td></td><td>Rutherfordium</td><td></td><td>Hahnium</td><td></td><td>Seaborgium</td><td></td><td>Bohrium</td><td></td><td>Hassium</td><td></td><td>Meitnerium</td><td></td><td>Darmstadtium</td><td></td><td>Roentgenium</td><td></td><td></td><td></td><td></td>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55	132.91	56	137.33			72	178.49	73	180.95	74	183.85	75	186.21	76	190.20	77	192.22	78	195.09	79	196.97	80	200.59	81	204.37	82	207.19	83	208.98	84	(209)	85	(210)	86	(222)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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- alkali metals
- alkali earth metals
- transitional metals
- other metals
- semiconductors
- other non-metals
- halogens
- noble gases
- unknown type



A THEORY OF

A Theory of Everyone

Who we are
How we got here
Where we are
going

Michael
Muthukrishna

"Mind expanding - this book will change your
view of the world forever." Matthew Syed

And God said

$$\nabla \cdot \vec{E} = \frac{\rho}{\epsilon_0}$$

$$\nabla \cdot \vec{B} = 0$$

$$\nabla \times \vec{E} = -\frac{\partial \vec{B}}{\partial t}$$

$$\nabla \times \vec{B} = \mu_0 \vec{J} + \frac{1}{c^2} \frac{\partial \vec{E}}{\partial t}$$

and there was light.

The Periodic Table of the Elements

1 H Hydrogen	2 He Helium																
3 Li Lithium	4 Be Beryllium	5 B Boron	6 C Carbon	7 N Nitrogen	8 O Oxygen	9 F Fluorine	10 Ne Neon										
11 Na Sodium	12 Mg Magnesium	13 Al Aluminium	14 Si Silicon	15 P Phosphorus	16 S Sulfur	17 Cl Chlorine	18 Ar Argon										
19 K Potassium	20 Ca Calcium	21 Sc Scandium	22 Ti Titanium	23 V Vanadium	24 Cr Chromium	25 Mn Manganese	26 Fe Iron	27 Co Cobalt	28 Ni Nickel	29 Cu Copper	30 Zn Zinc	31 Ga Gallium	32 Ge Germanium	33 As Arsenic	34 Se Selenium	35 Br Bromine	36 Kr Krypton
37 Rb Rubidium	38 Sr Strontium	39 Y Yttrium	40 Zr Zirconium	41 Nb Niobium	42 Mo Molybdenum	43 Tc Technetium	44 Ru Ruthenium	45 Rh Rhodium	46 Pd Palladium	47 Ag Silver	48 Cd Cadmium	49 In Indium	50 Sn Tin	51 Sb Antimony	52 Te Tellurium	53 I Iodine	54 Xe Xenon
55 Cs Cesium	56 Ba Barium	•	72 Hf Hafnium	73 Ta Tantalum	74 W Tungsten	75 Re Rhenium	76 Os Osmium	77 Ir Iridium	78 Pt Platinum	79 Au Gold	80 Hg Mercury	81 Tl Thallium	82 Pb Lead	83 Bi Bismuth	84 Po Polonium	85 At Astatine	86 Rn Radon
87 Fr Francium	88 Ra Radium	••	104 Rf Rutherfordium	105 Ha Hahnium	106 Sg Seaborgium	107 Bh Bohrium	108 Hs Hassium	109 Mt Meitnerium	110 Ds Darmstadtium	111 Rg Roentgenium	112 (277)	(113)	(114)	(115)	(116)	(117)	(118)
57 La Lanthanum	58 Ce Cerium	59 Pr Praseodymium	60 Nd Neodymium	61 Pm Promethium	62 Sm Samarium	63 Eu Europium	64 Gd Gadolinium	65 Tb Terbium	66 Dy Dysprosium	67 Ho Holmium	68 Er Erbium	69 Tm Thulium	70 Yb Ytterbium	71 Lu Lutetium			
89 Ac Actinium	90 Th Thorium	91 Pa Protactinium	92 U Uranium	93 Np Neptunium	94 Pu Plutonium	95 Am Americium	96 Cm Curium	97 Bk Berkelium	98 Cf Californium	99 Es Einsteinium	100 Fm Fermium	101 Md Mendelevium	102 No Nobelium	103 Lr Lawrencium			

Atomic Number

Atomic Weight

Symbol

Name

black solid
blue liquid
red gas
white synthetically
prepared
most stable isotope

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• Lanthanoids

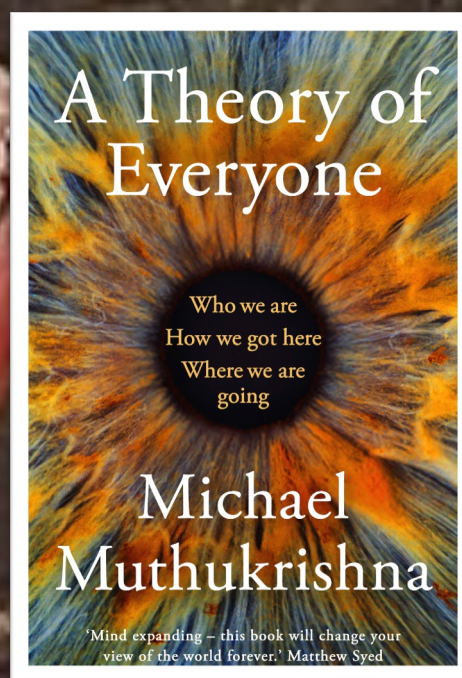
•• Actinoids

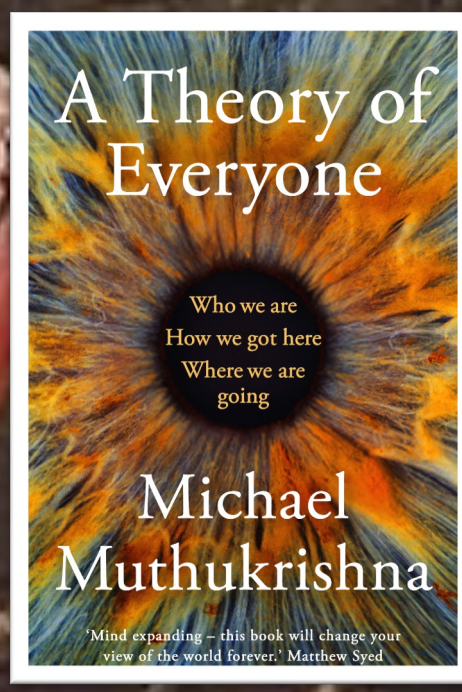
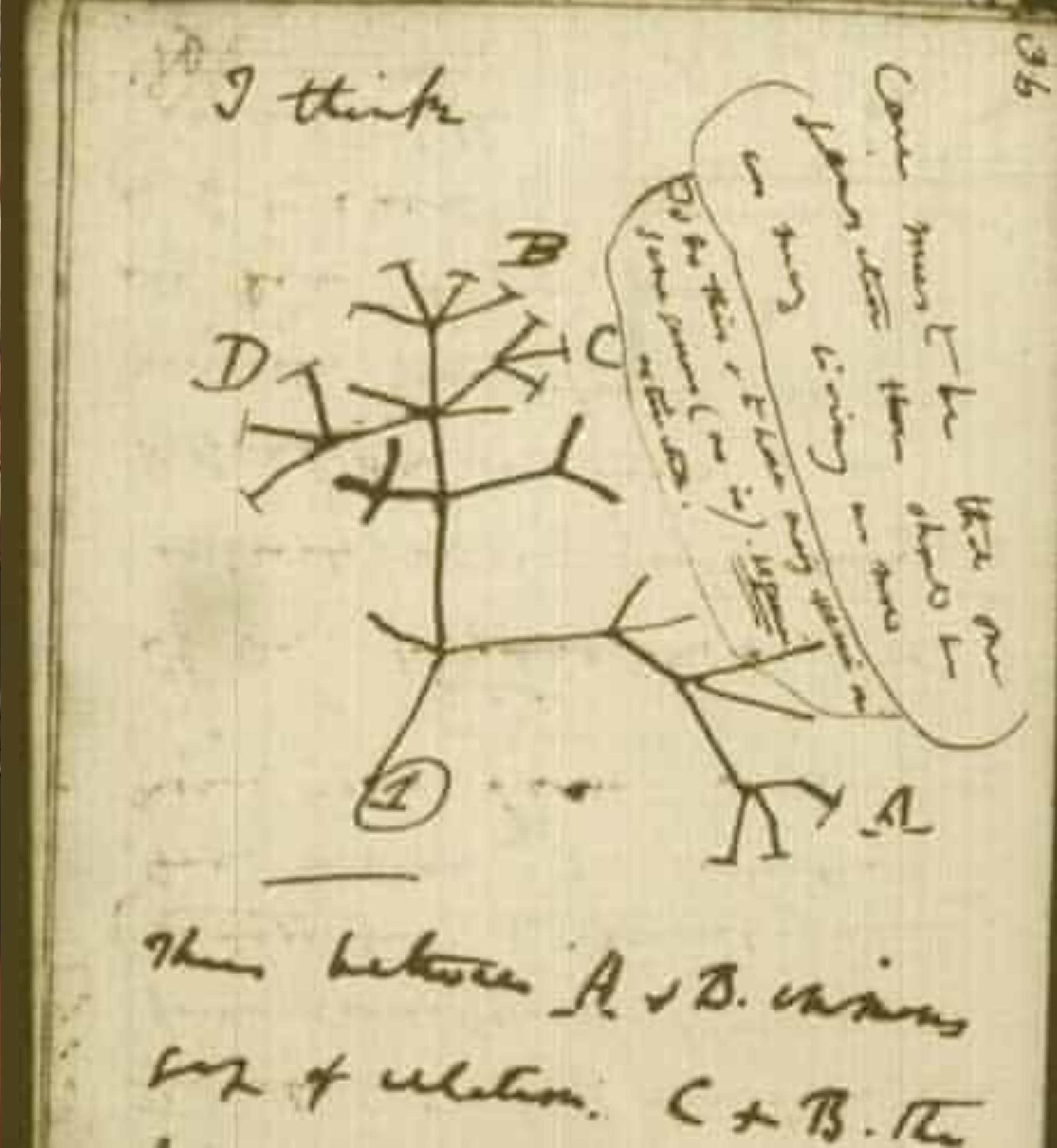
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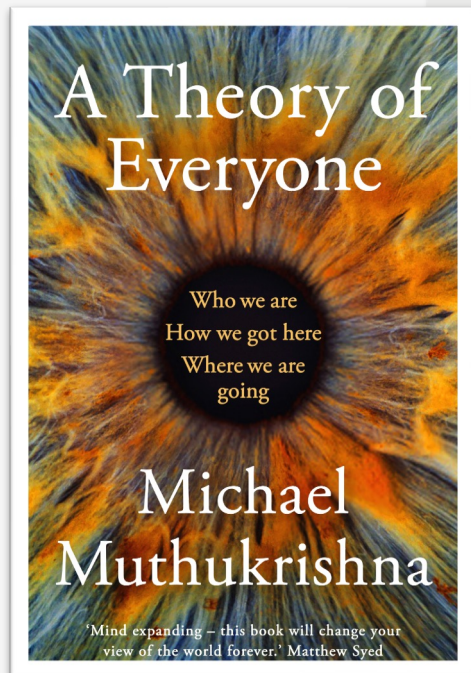


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- alkali metals
- alkali earth metals
- transitional metals
- other metals
- semiconductors
- other non-metals
- halogens
- noble gases
- unknown type







And God said

$$\nabla \cdot \vec{E} = \frac{\rho}{\epsilon_0}$$

$$\nabla \cdot \vec{B} = 0$$

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and there was light.

The Periodic Table of the Elements

Periodic Table of Elements


Atomic Number →

→ Symbol

↑ Name

Atomic Weight

black solid
blue liquid
red gas
white synthetically prepared
most stable isotope



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1 H Hydrogen	2 He Helium
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87 Fr Francium	88 Ra Radium
21 Sc Scandium	22 Ti Titanium
23 V Vanadium	24 Cr Chromium
25 Mn Manganese	26 Fe Iron
27 Co Cobalt	28 Ni Nickel
29 Cu Copper	30 Zn Zinc
31 Ga Gallium	32 Ge Germanium
33 As Arsenic	34 Se Selenium
35 Br Bromine	36 Kr Krypton
37 Rb Rubidium	38 Sr Strontium
39 Y Yttrium	40 Zr Zirconium
41 Nb Niobium	42 Mo Molybdenum
43 Tc Technetium	44 Ru Ruthenium
45 Rh Rhodium	46 Pd Palladium
47 Ag Silver	48 Cd Cadmium
49 In Indium	50 Sn Tin
51 Sb Antimony	52 Te Tellurium
53 I Iodine	54 Xe Xenon
55 Cs Cesium	56 Ba Barium
57 La Lanthanum	58 Ce Cerium
59 Pr Praseodymium	60 Nd Neodymium
61 Pm Promethium	62 Sm Samarium
63 Eu Europium	64 Gd Gadolinium
65 Tb Terbium	66 Dy Dysprosium
67 Ho Holmium	68 Er Erbium
69 Tm Thulium	70 Yb Ytterbium
71 Lu Lutetium	72 Hf Hafnium
73 Ta Tantalum	74 W Tungsten
75 Re Rhenium	76 Os Osmium
77 Ir Iridium	78 Pt Platinum
79 Au Gold	80 Hg Mercury
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97 Bk Berkelium	98 Cf Californium
99 Es Einsteinium	100 Fm Fermium
101 Md Mendelevium	102 No Nobelium
103 Lr Lawrencium	

- **Lanthanoids**

- ● Actinoids

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 alkali metals

 alkali earth metals

 transitional metals

 other metals

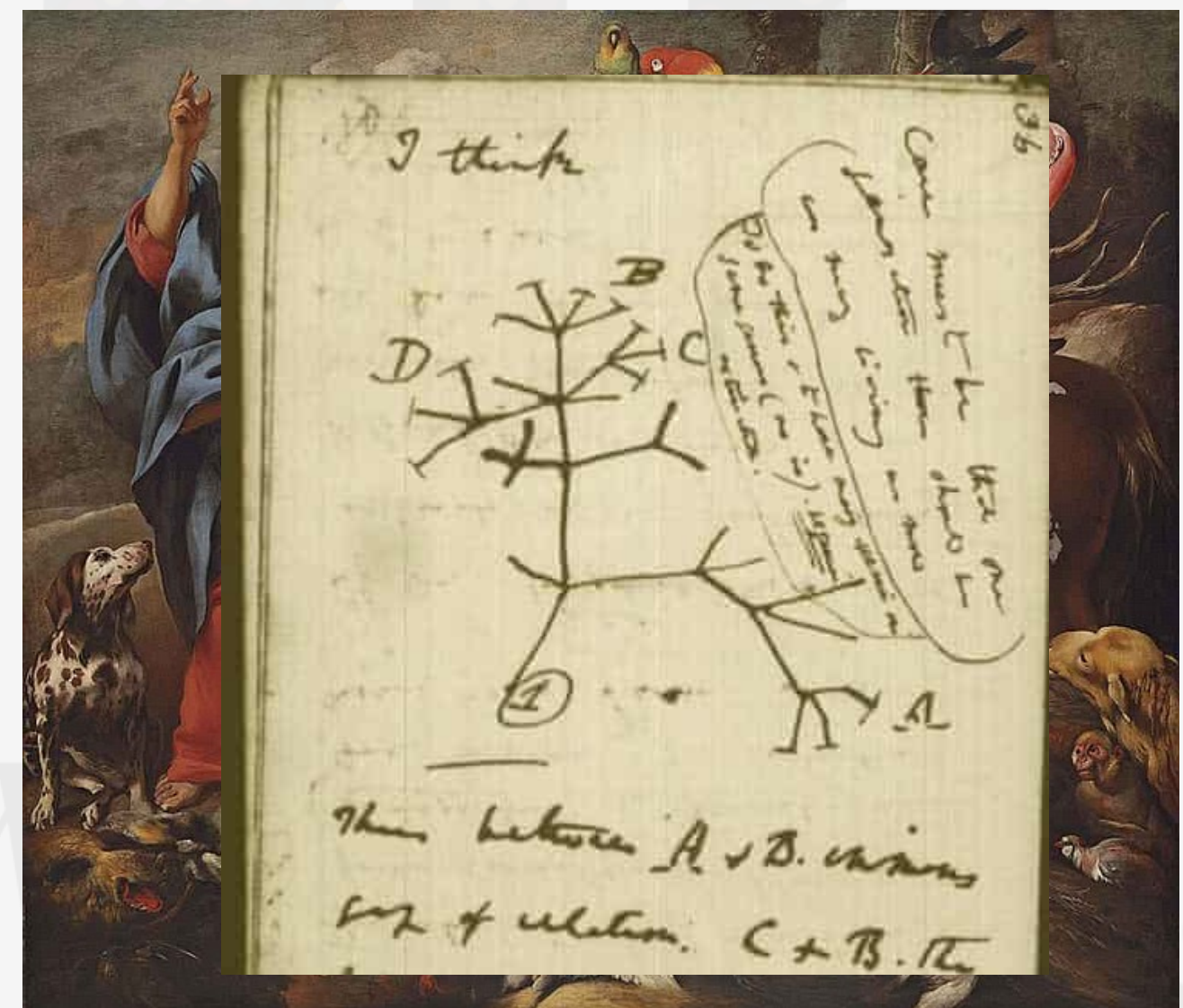
 semiconductors

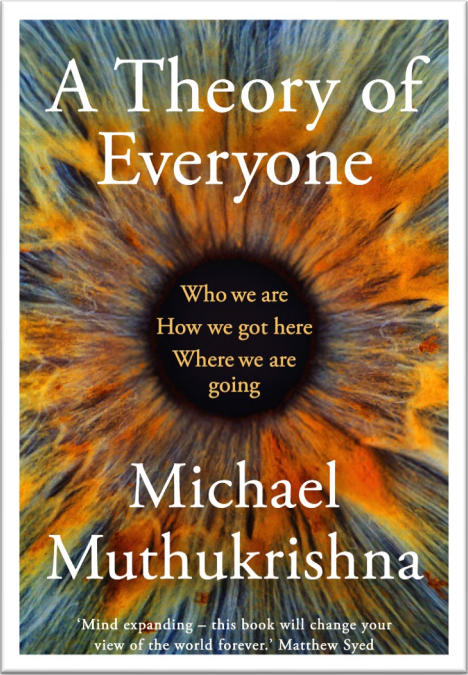
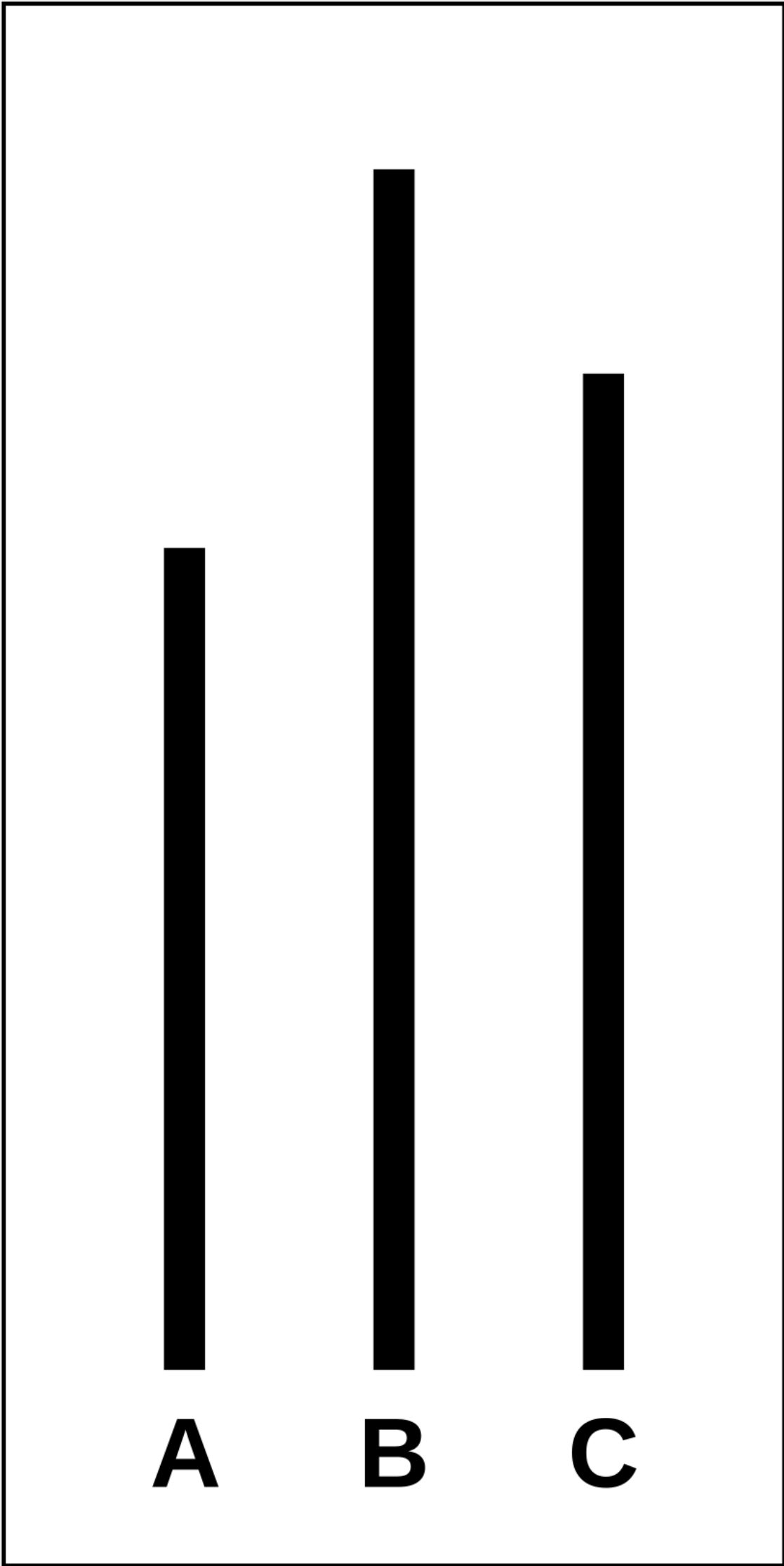
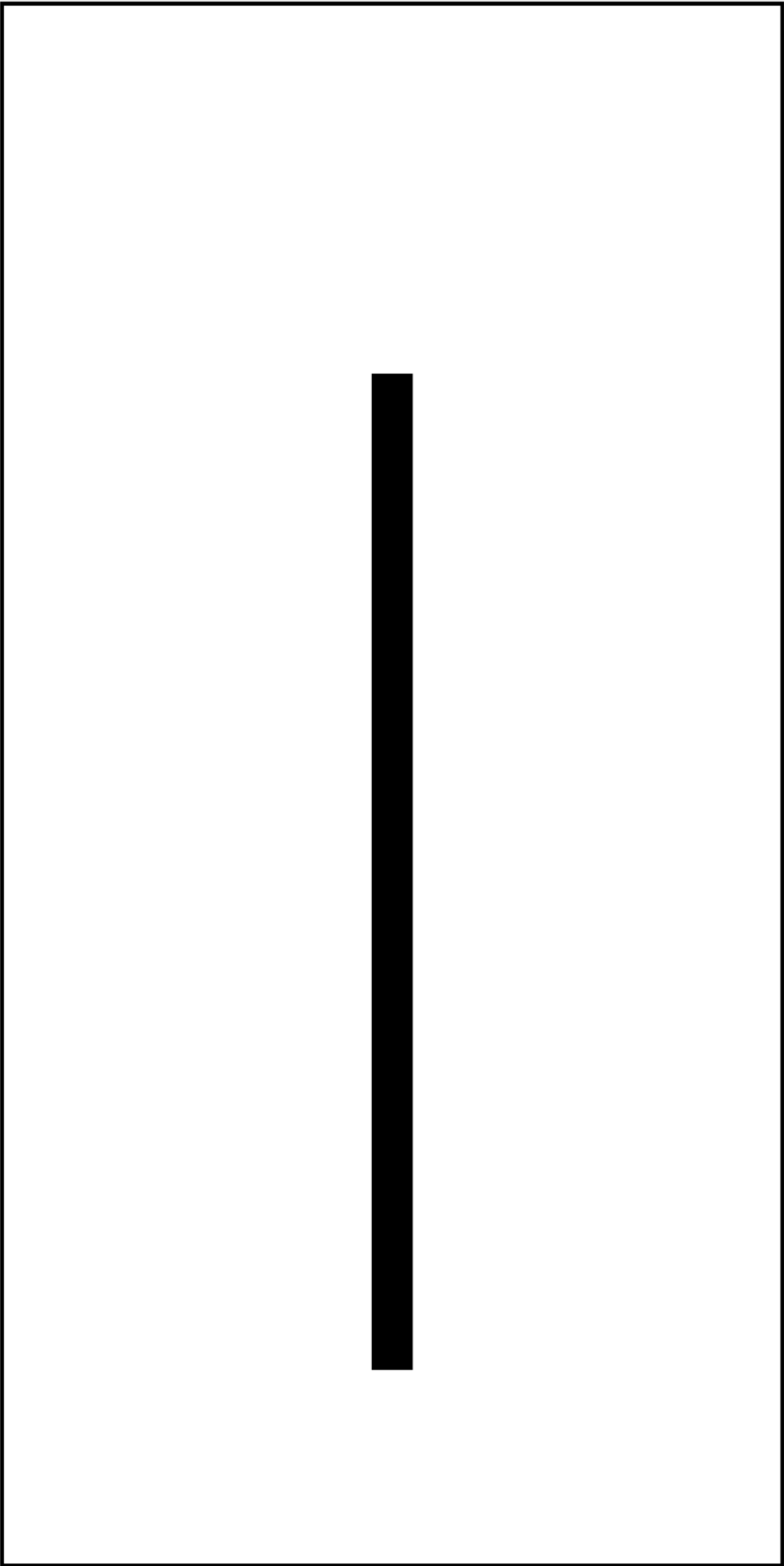
 other non-metal

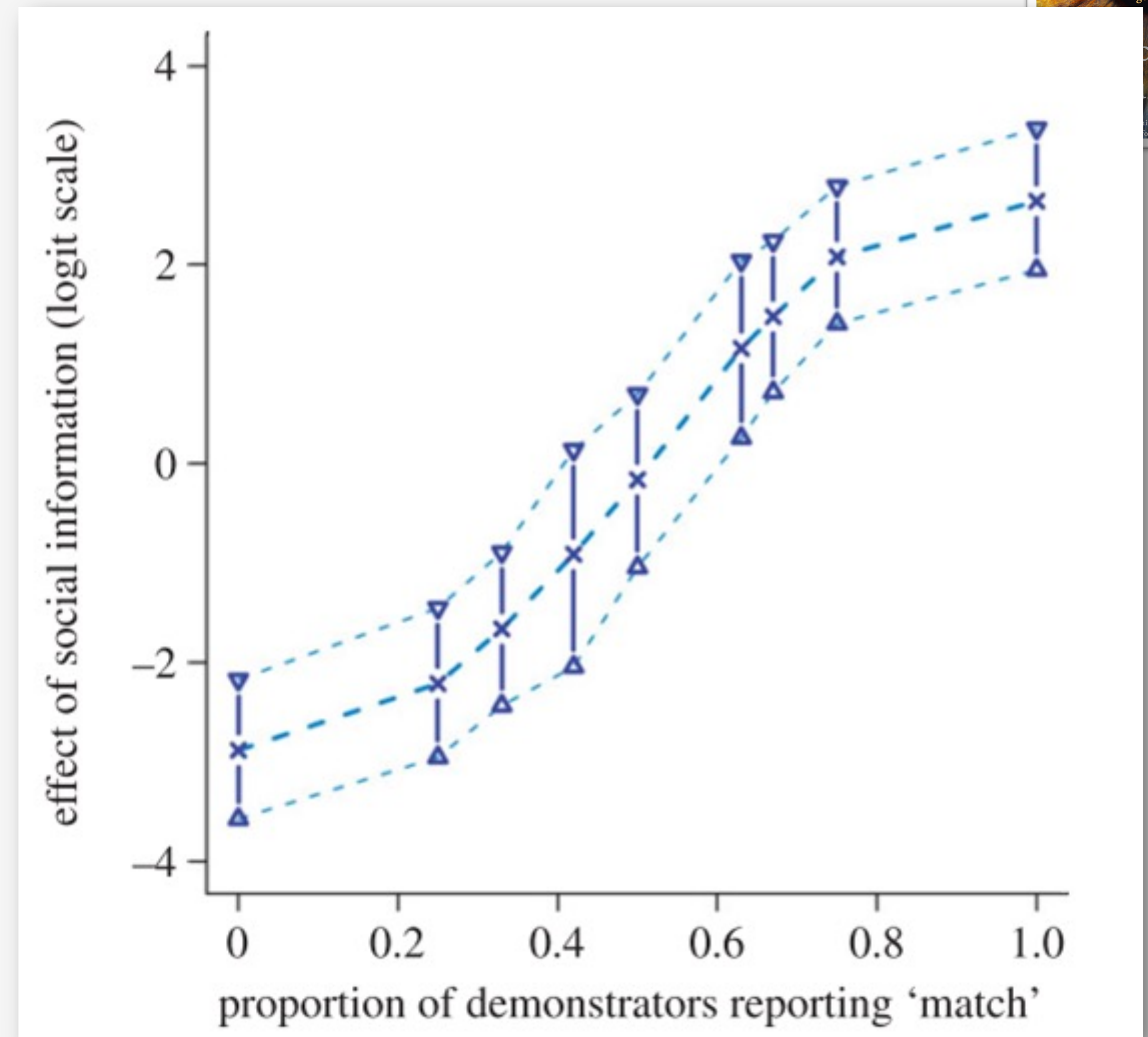
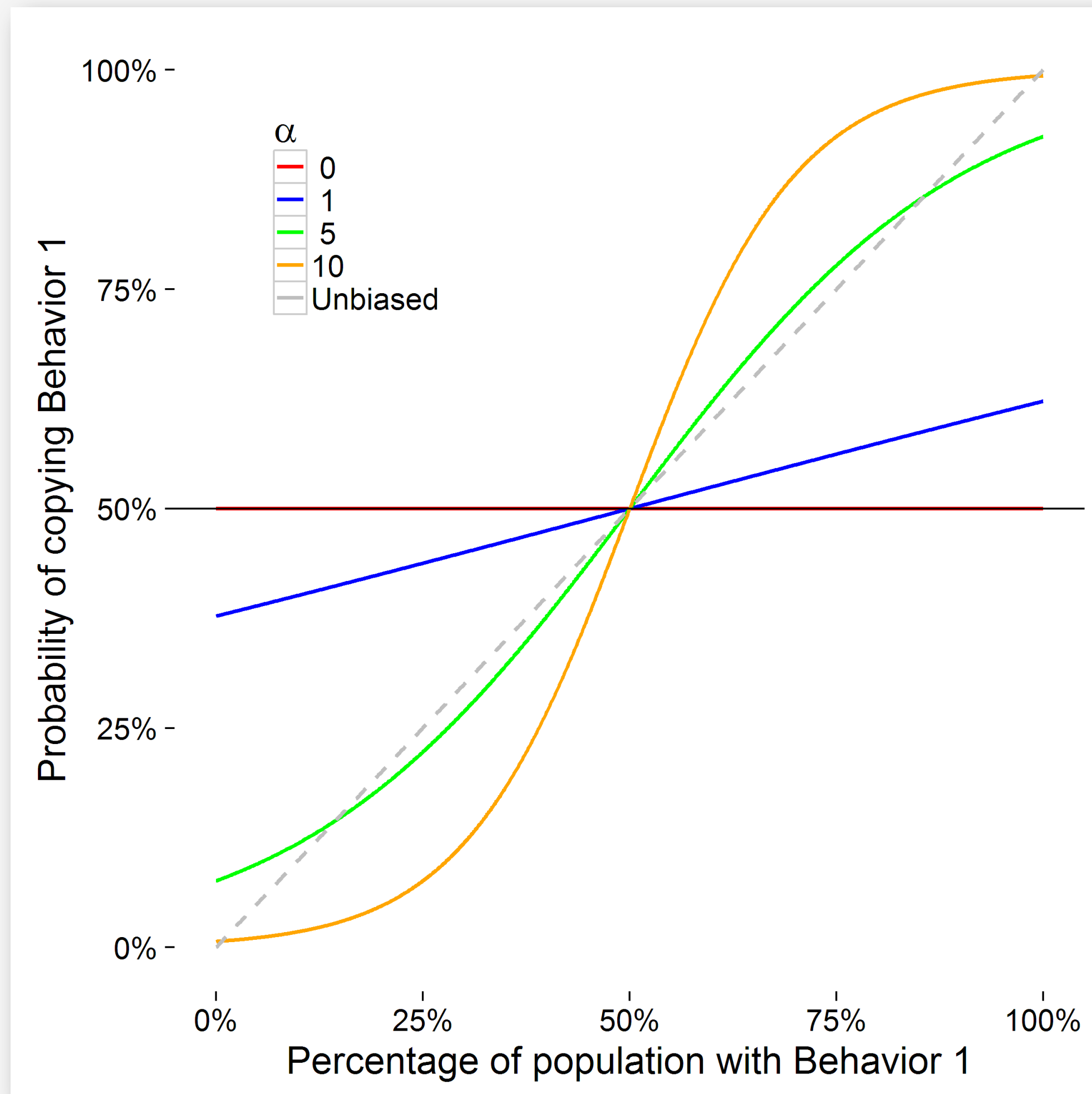
 halogens

 noble gases

 unknown type

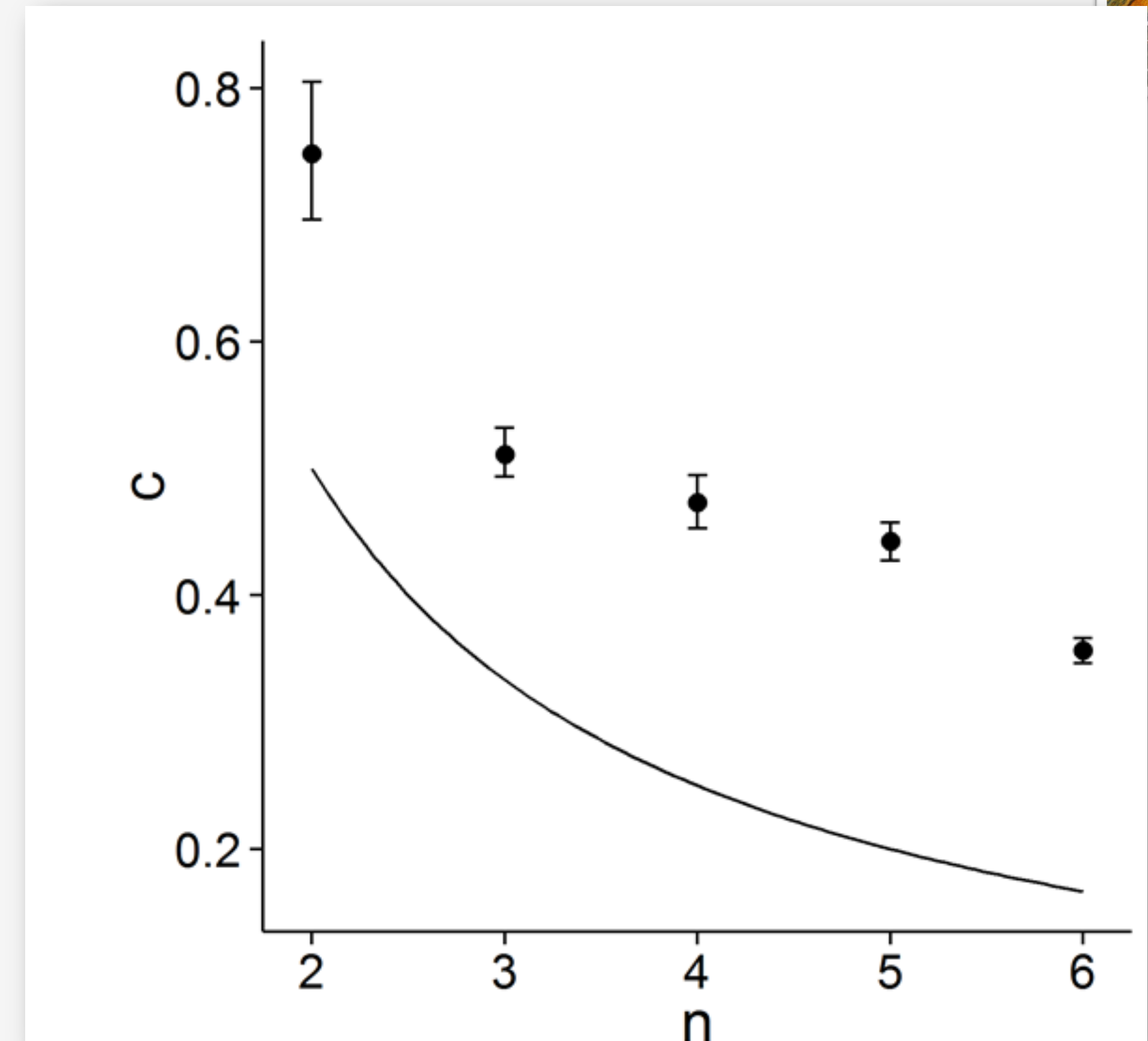
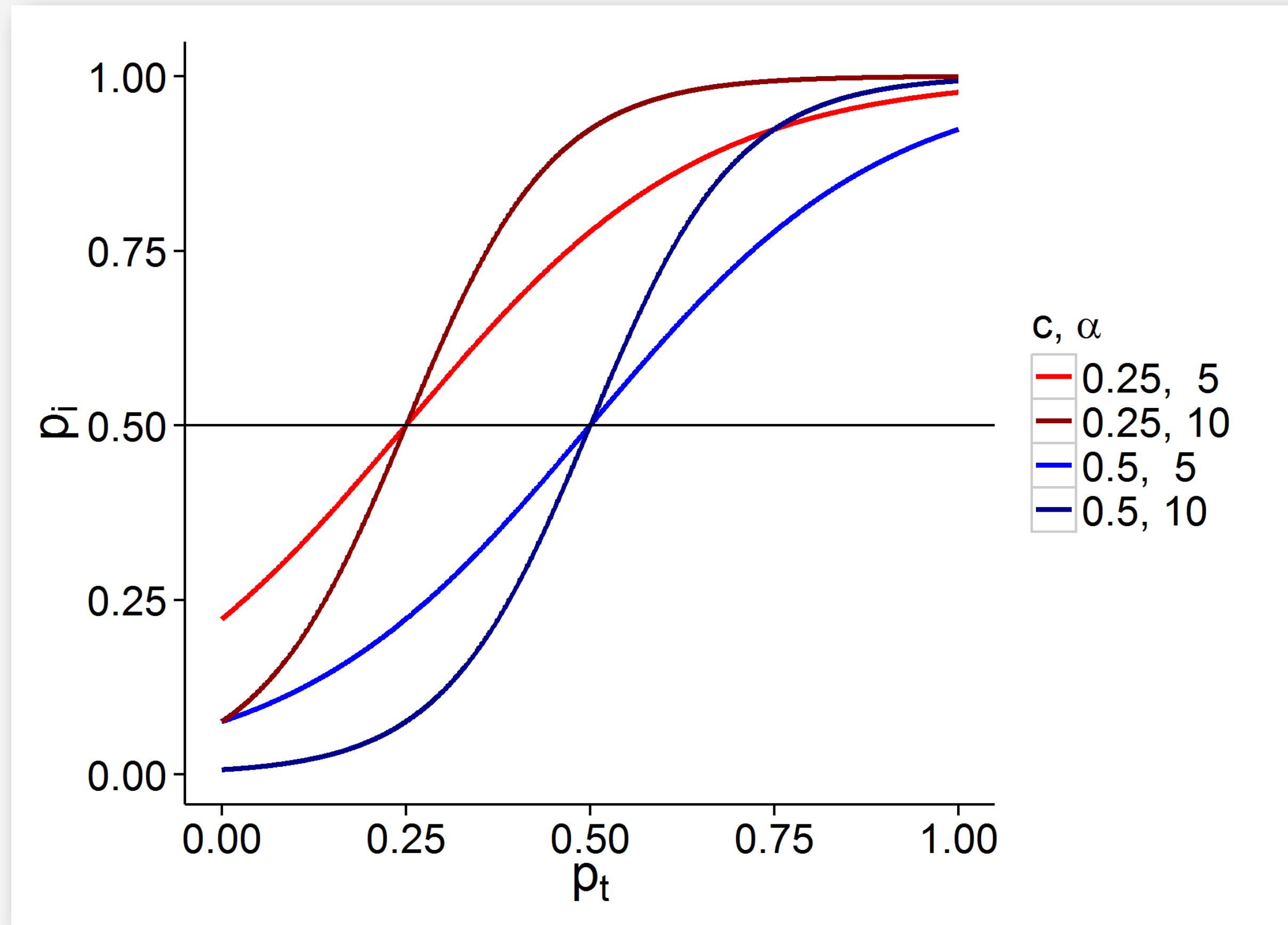






Muthukrishna, M., Morgan, T. J., & Henrich, J. (2016). The when and who of social learning and conformist transmission. *Evolution and Human Behavior*, 37(1), 10-20.

Muthukrishna, M., & Henrich, J. (2019). A problem in theory. *Nature Human Behaviour*, 3(3), 221-229.

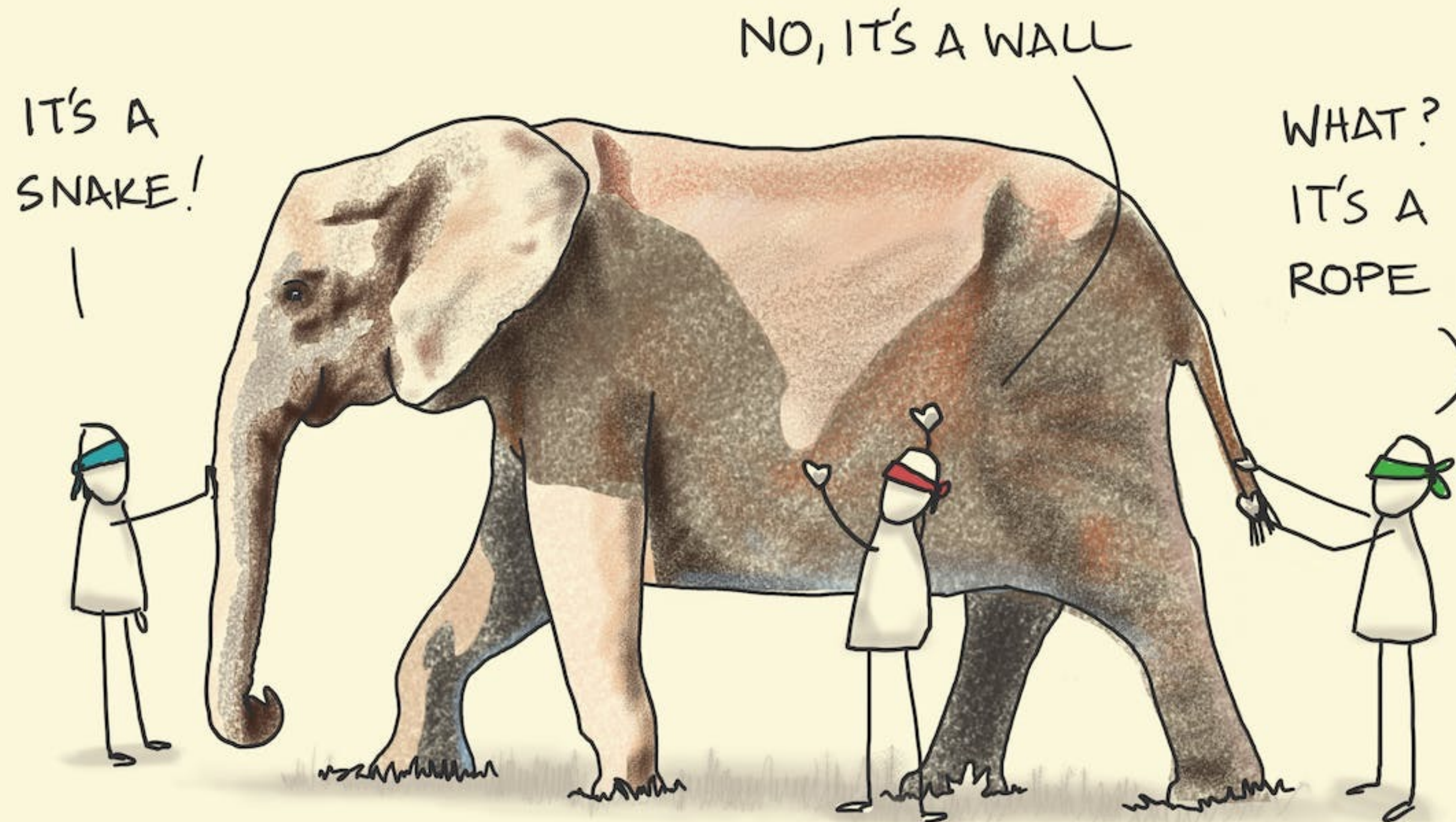


Muthukrishna, M., Morgan, T. J., & Henrich, J. (2016). The when and who of social learning and conformist transmission. *Evolution and Human Behavior*, 37(1), 10-20.

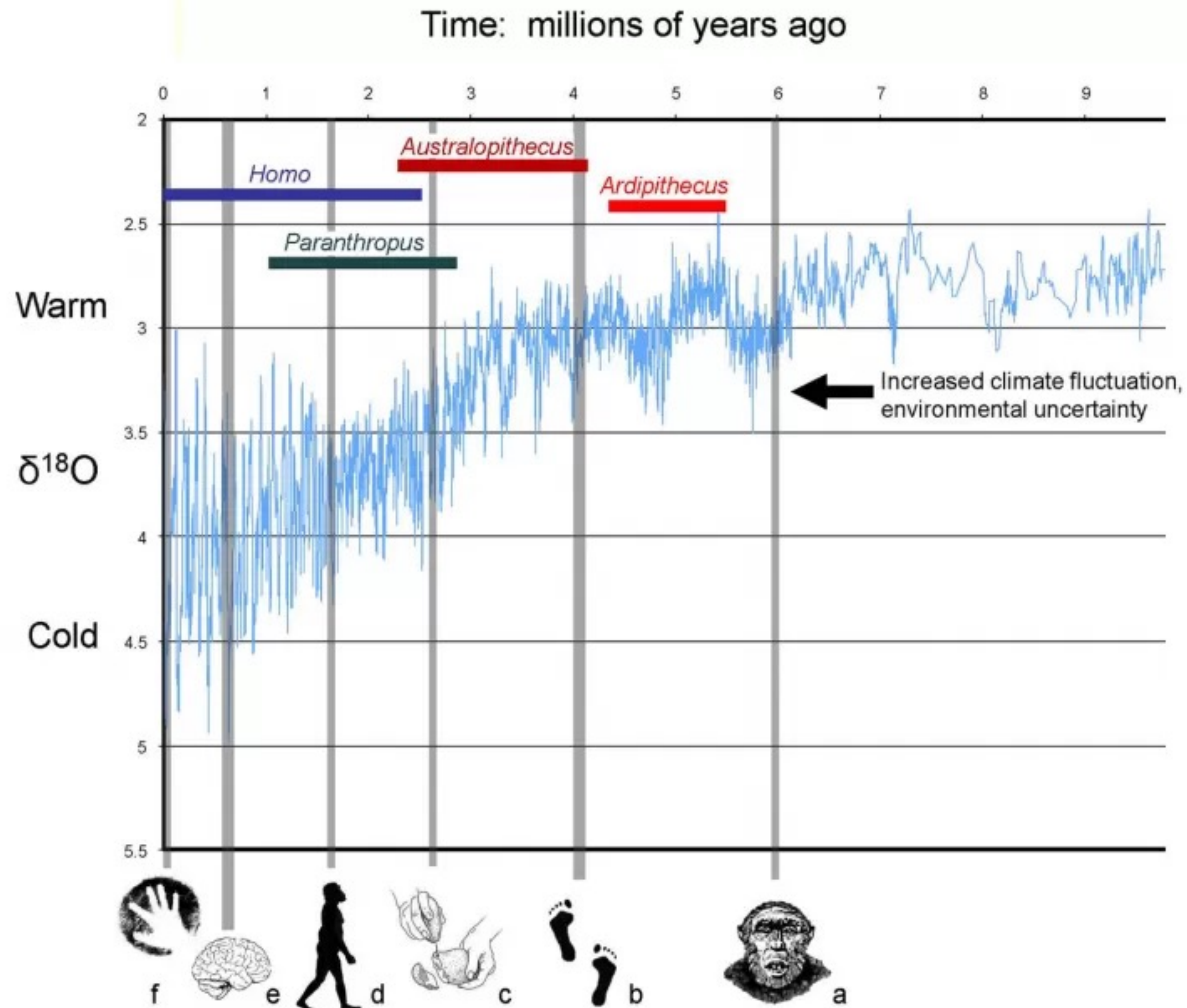
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THE BLIND AND THE ELEPHANT

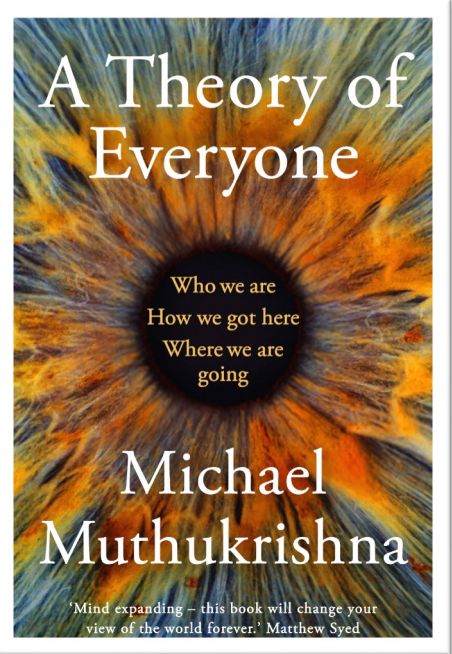
OUR OWN EXPERIENCE IS RARELY THE WHOLE TRUTH



sketchplanations



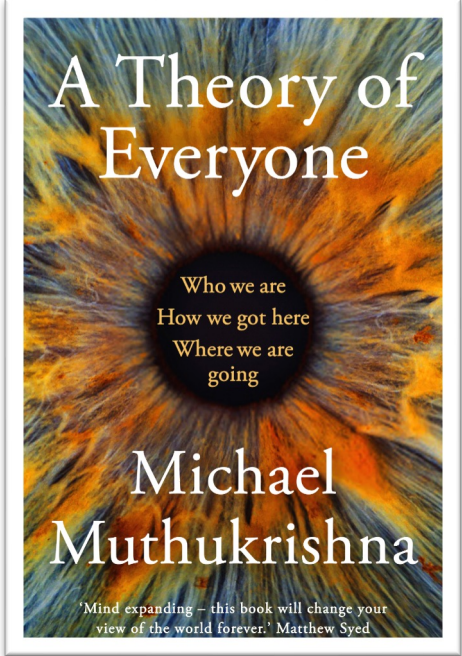
Oxygen isotope curve ($\delta^{18}\text{O}$) for the past 10 million years (data from Zachos et al., 2001)
 (© Copyright Smithsonian Institution)



DUAL INHERITANCE THEORY

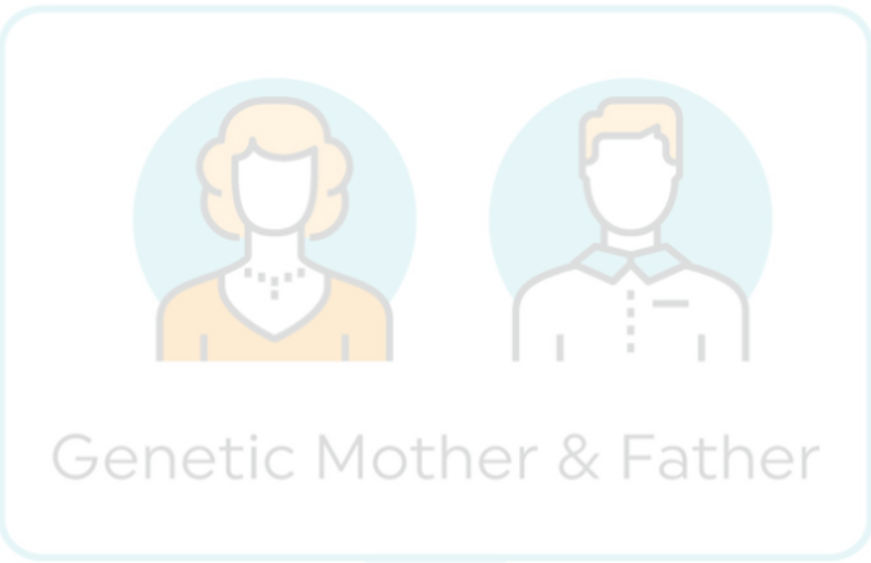
GENETIC Inheritance

CULTURAL Inheritance



DUAL INHERITANCE THEORY

GENETIC Inheritance



- EYE COLOUR
- SKIN COLOUR
- BLOOD TYPE
- HAIR COLOUR & TYPE
- SOME GENETIC DISORDERS
- LACTASE PERSISTENCE

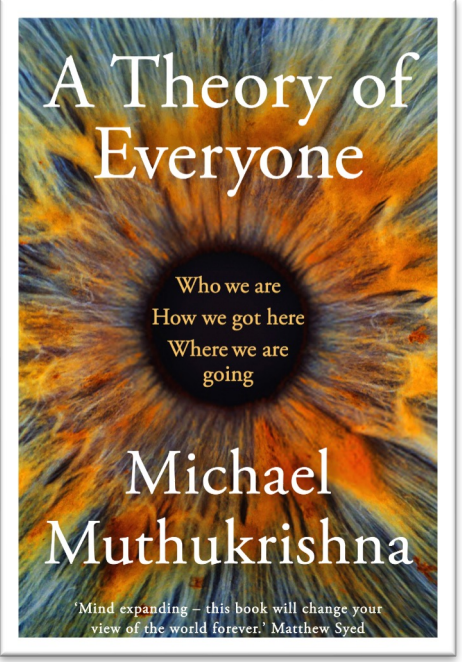


CULTURAL Inheritance

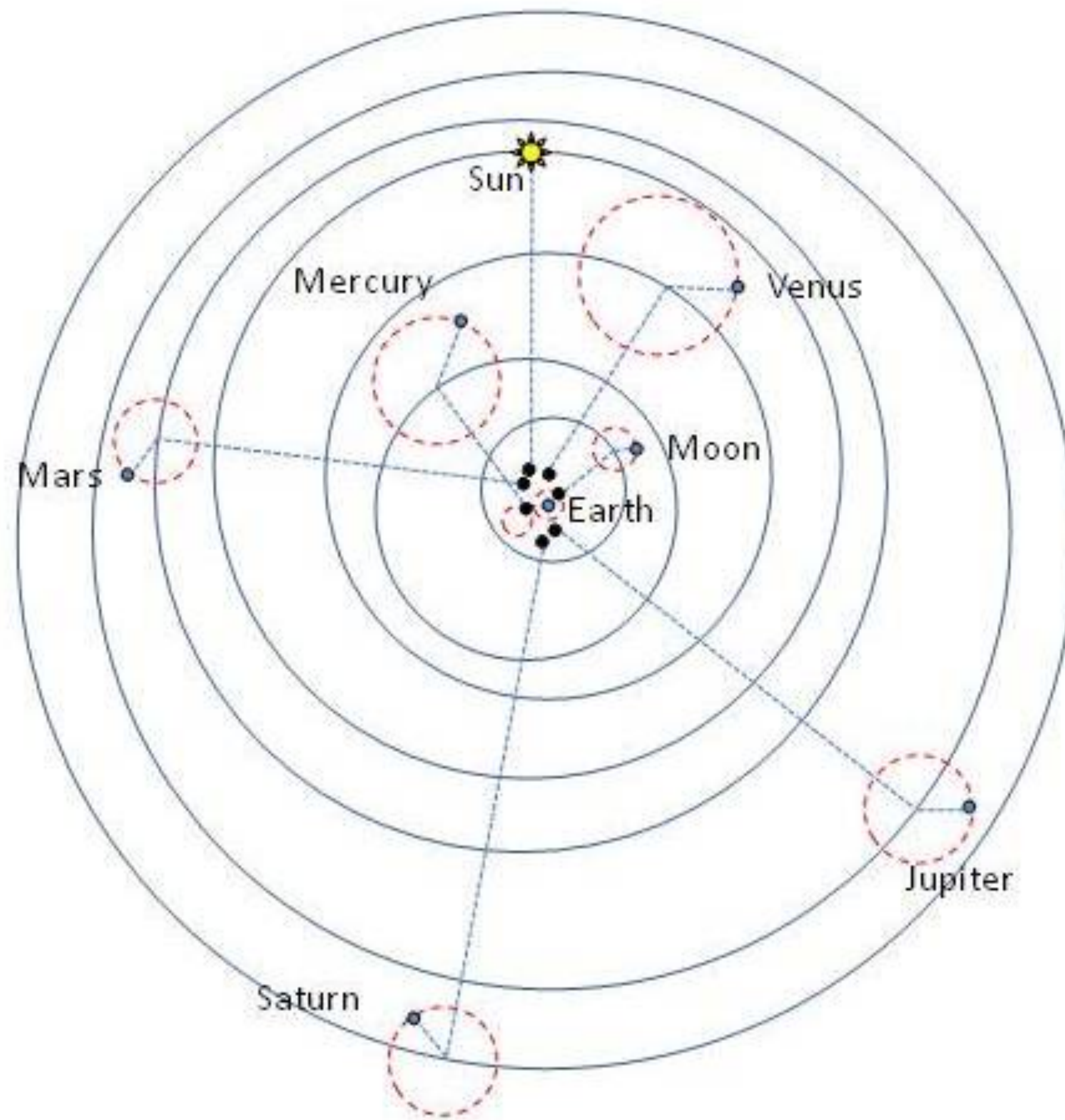


- BELIEFS
- SOCIAL NORMS
- VALUES
- FOOD
- TRADITIONS
- TECHNOLOGIES
- MENTAL TOOLS
- LITERACY
- MATHEMATICS

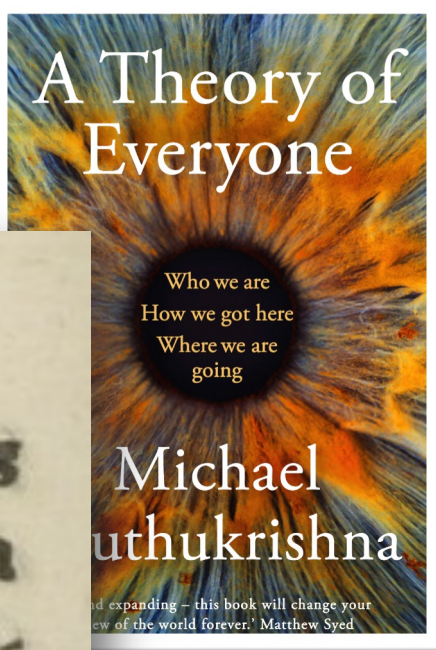
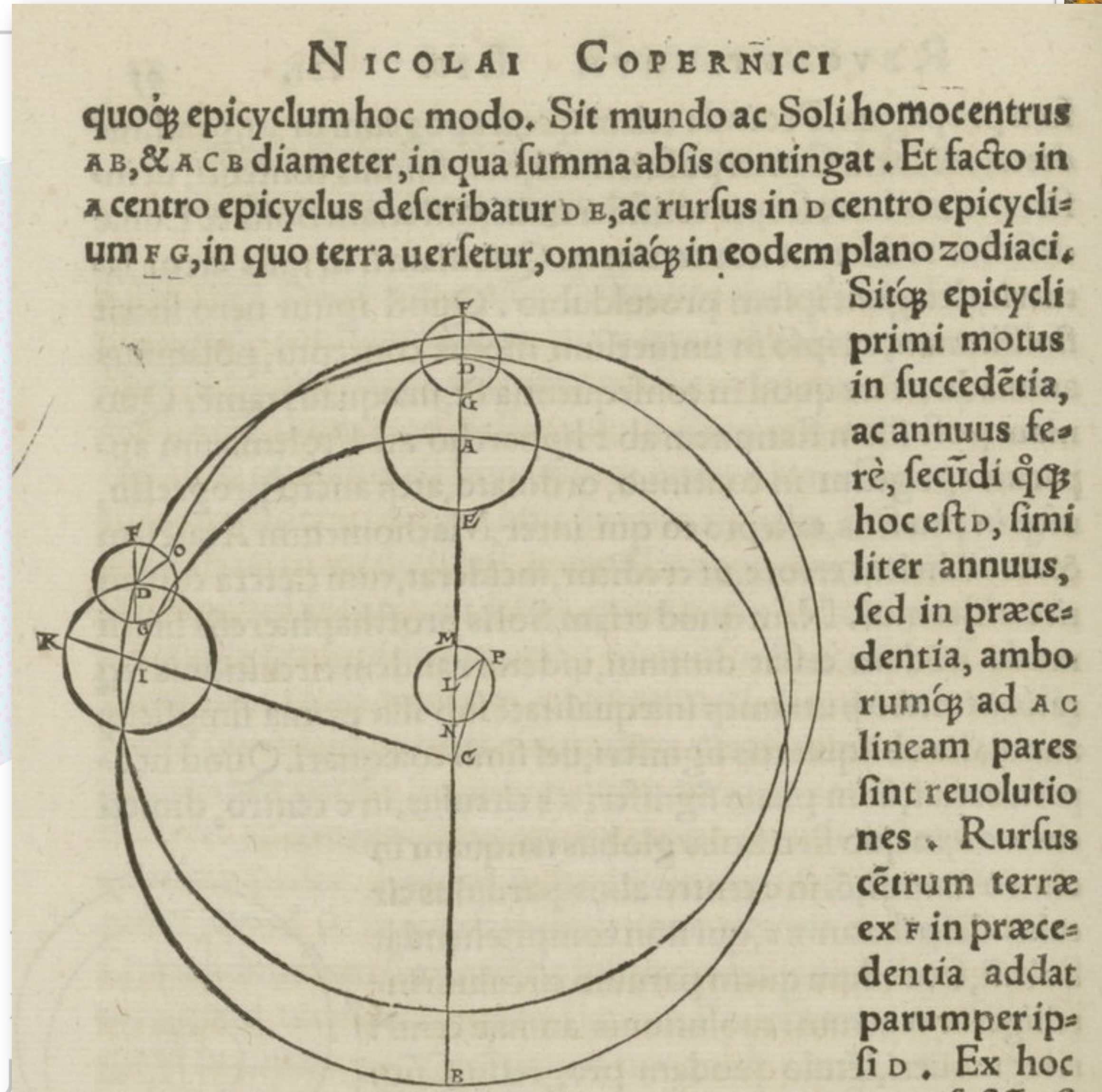
CREATED BY VERONIKA PLANT (2019)
in collaboration with MICHAEL MUTHUKRISHNA



DUAL INHERITANCE THEORY



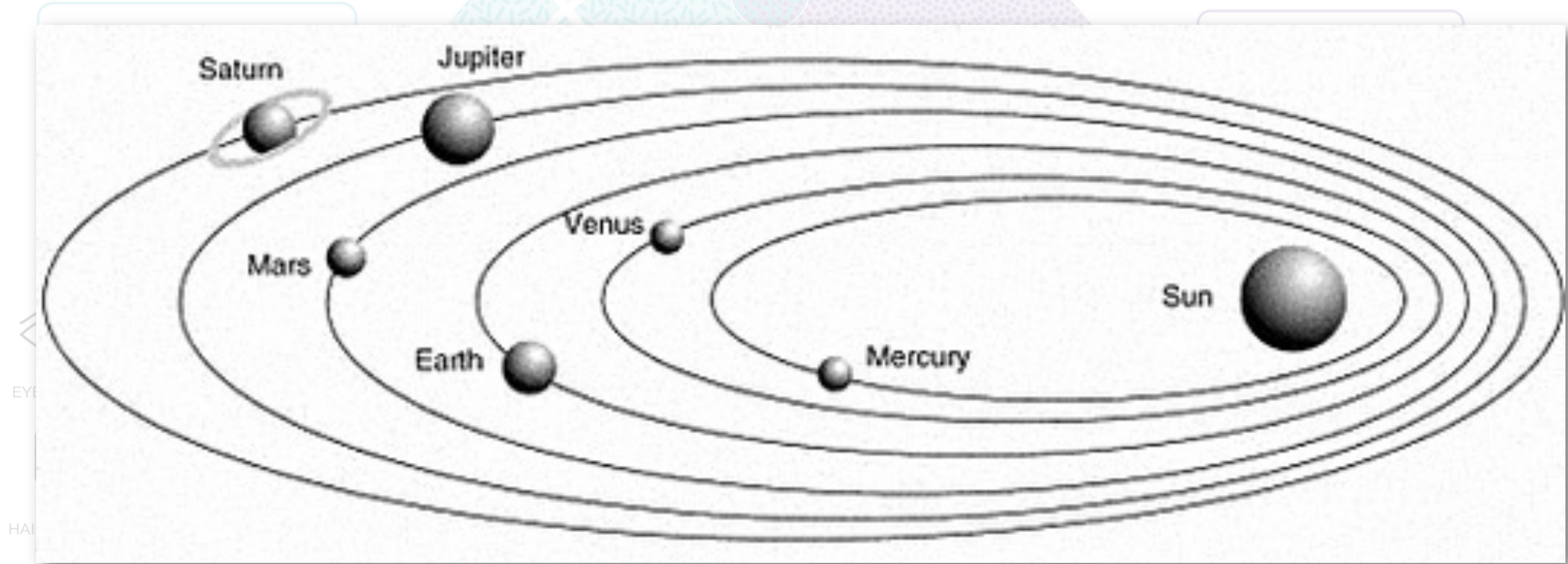
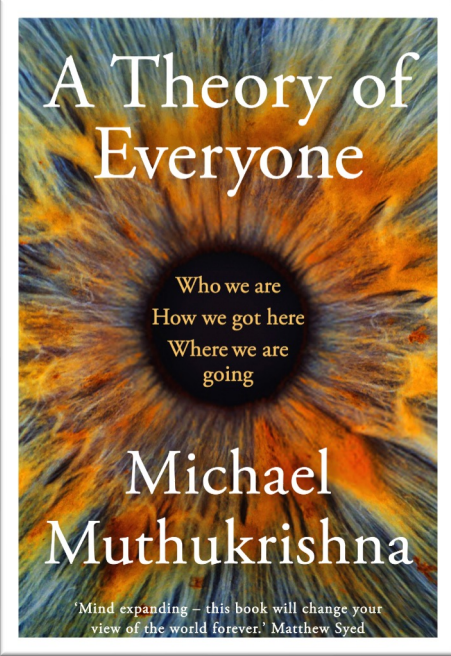
Ptolemaic Model



DUAL INHERITANCE THEORY

GENETIC Inheritance

CULTURAL Inheritance



GENETICS x CULTURE
= HUMAN



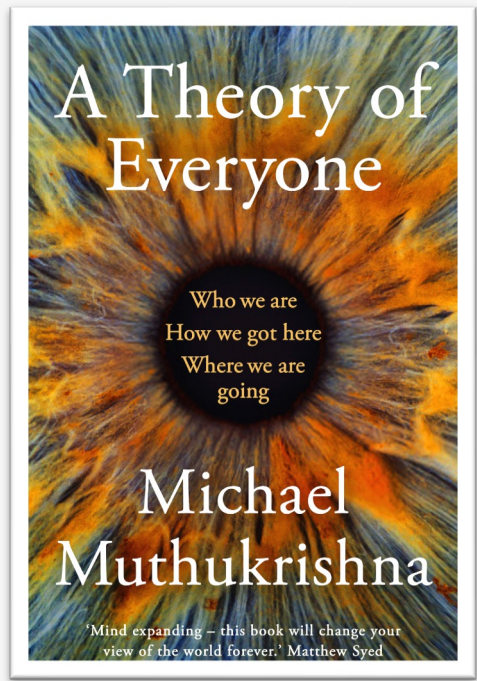
MENTAL TOOLS



LITERACY



MATHEMATICS



Culture is the Software of Our Minds

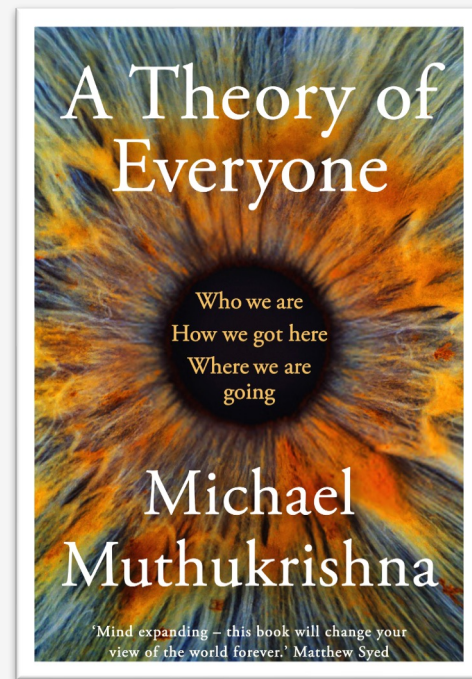
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Henrich, J., & Muthukrishna, M. (2023) What makes us smart? *Topics in Cognitive Science*

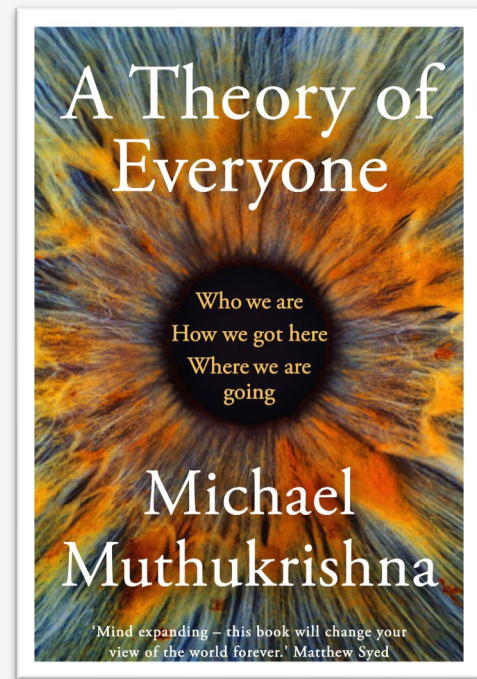
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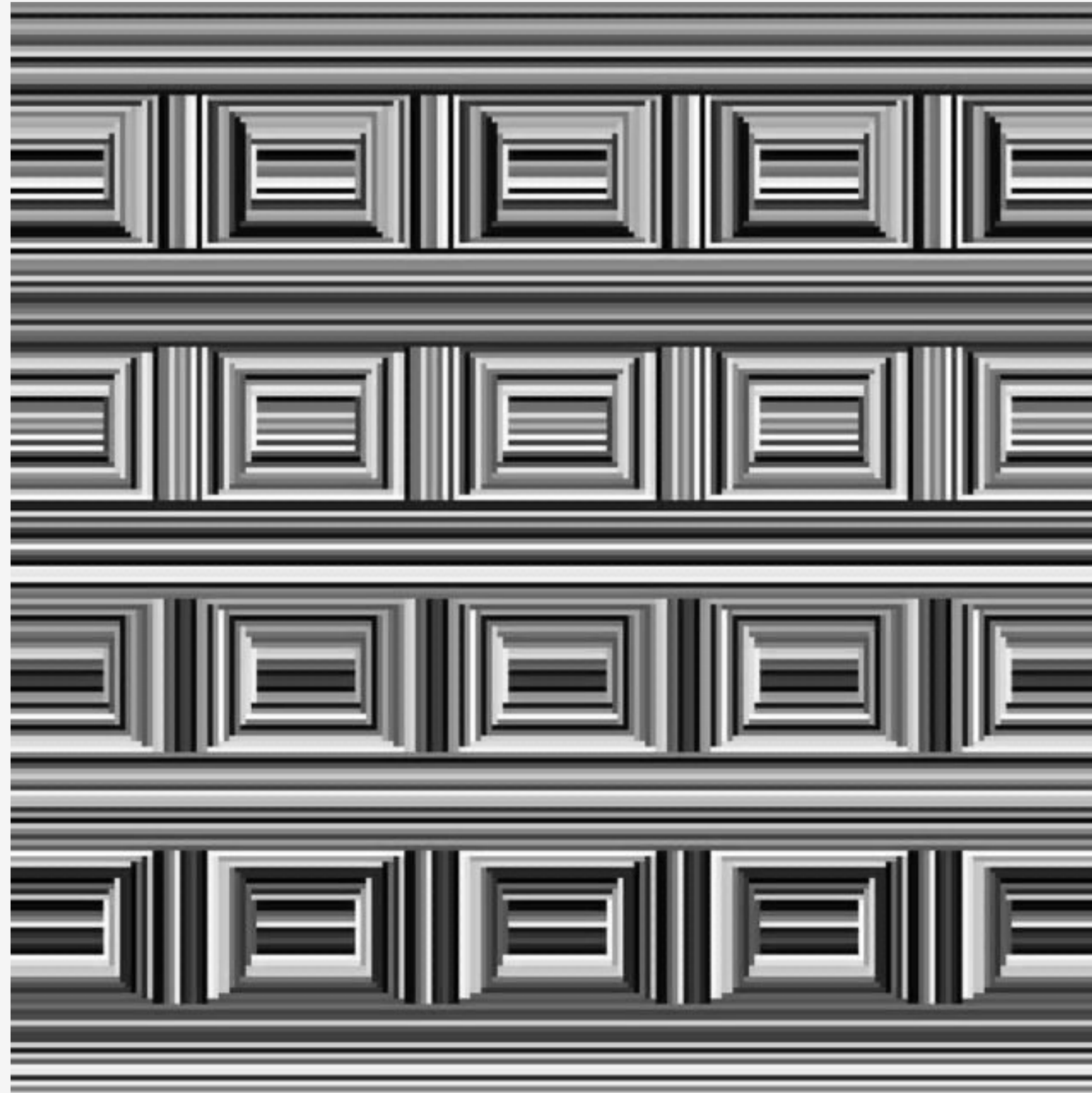
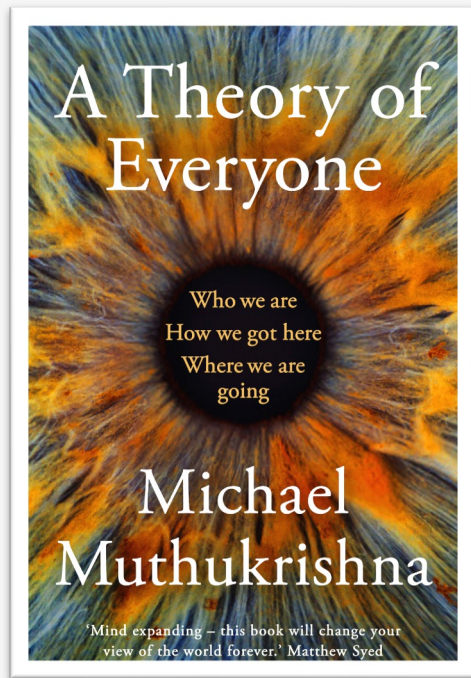
Software of Our Minds



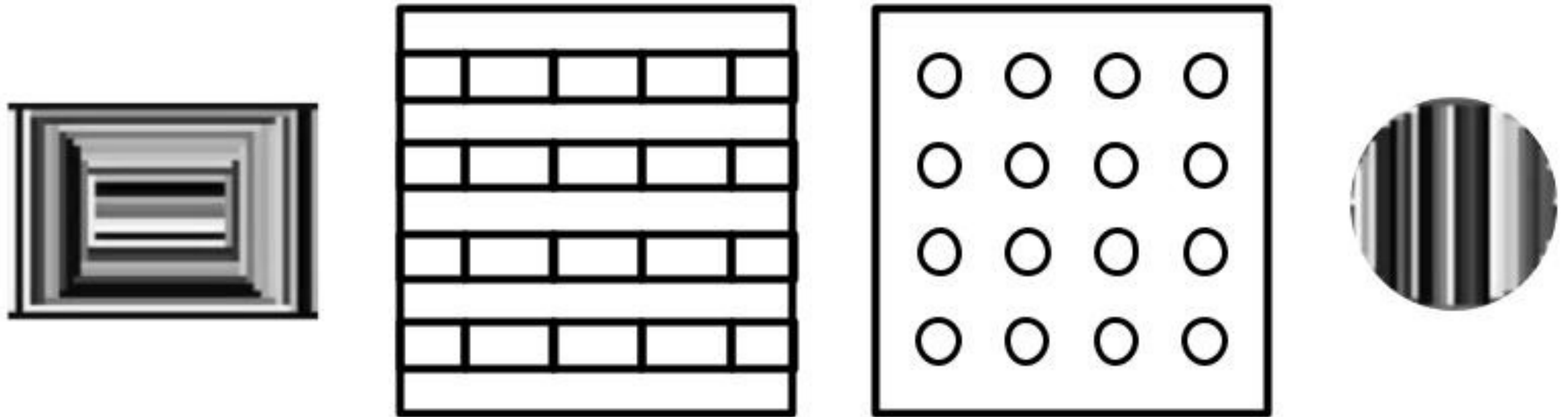
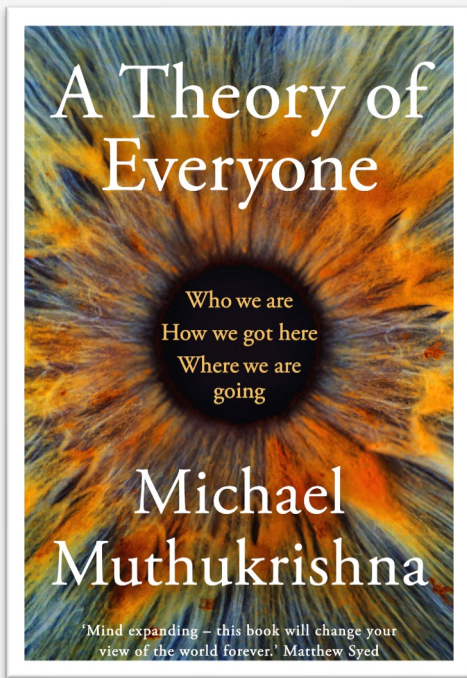
Software of Our Minds



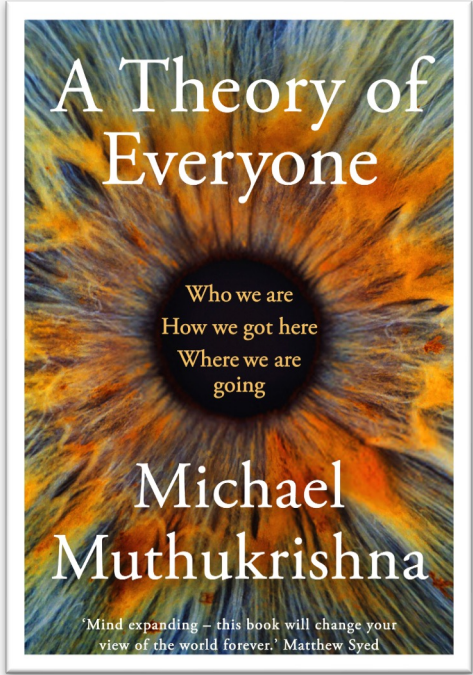
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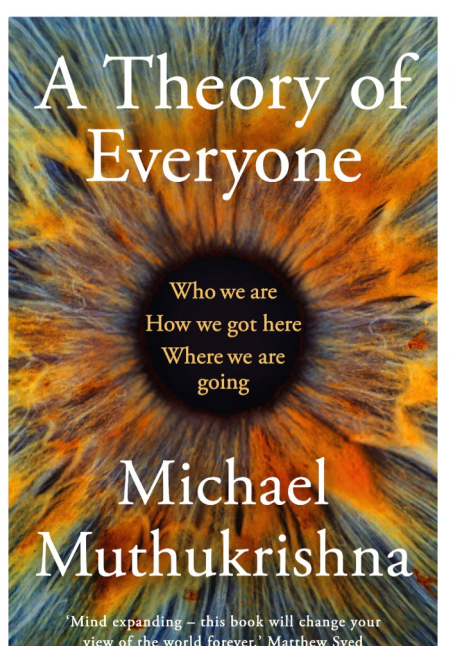
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Software of Our Minds



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A. **UK/US**
Many 90° angles



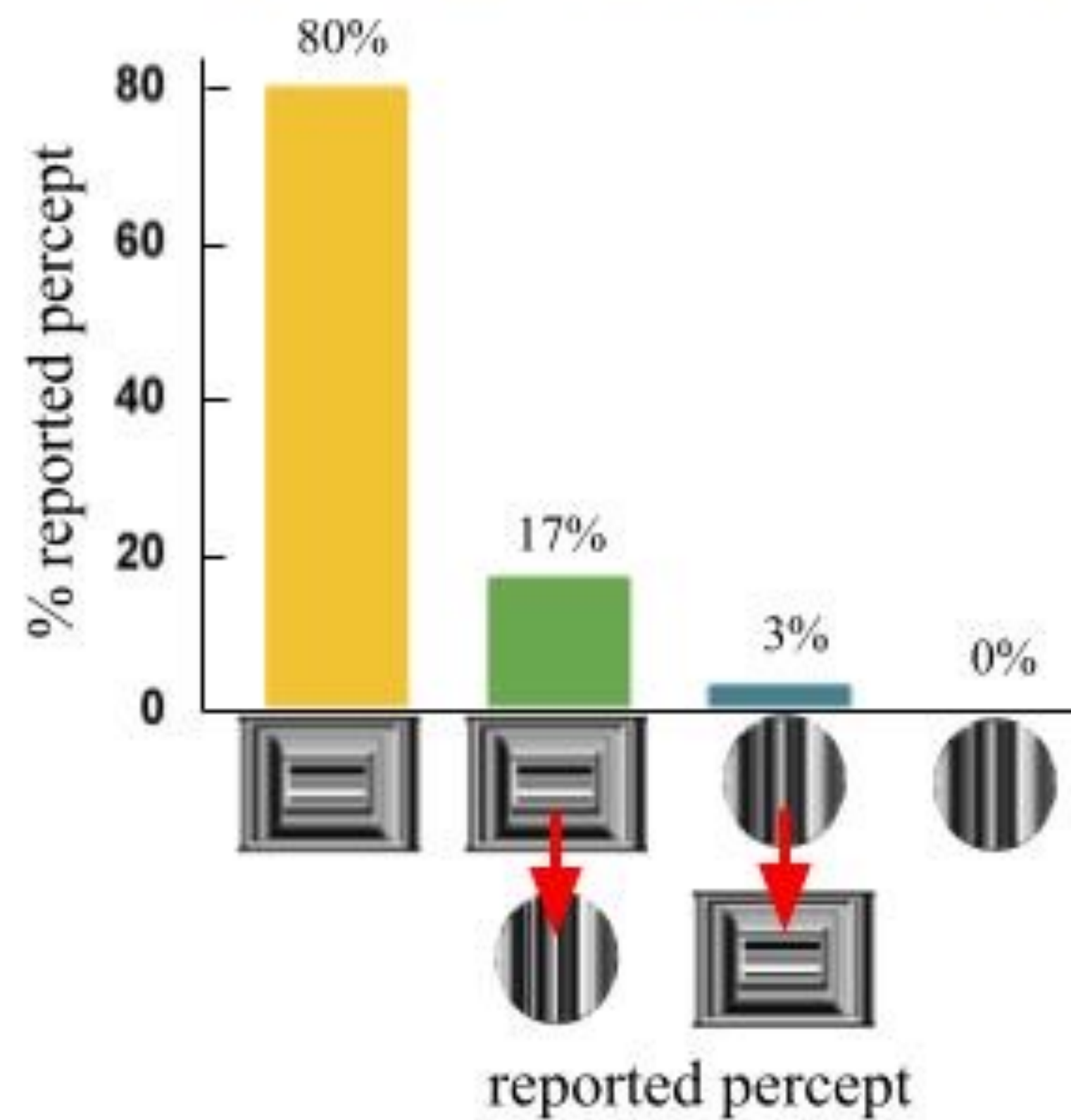
B. **Town**
Limited 90° angles



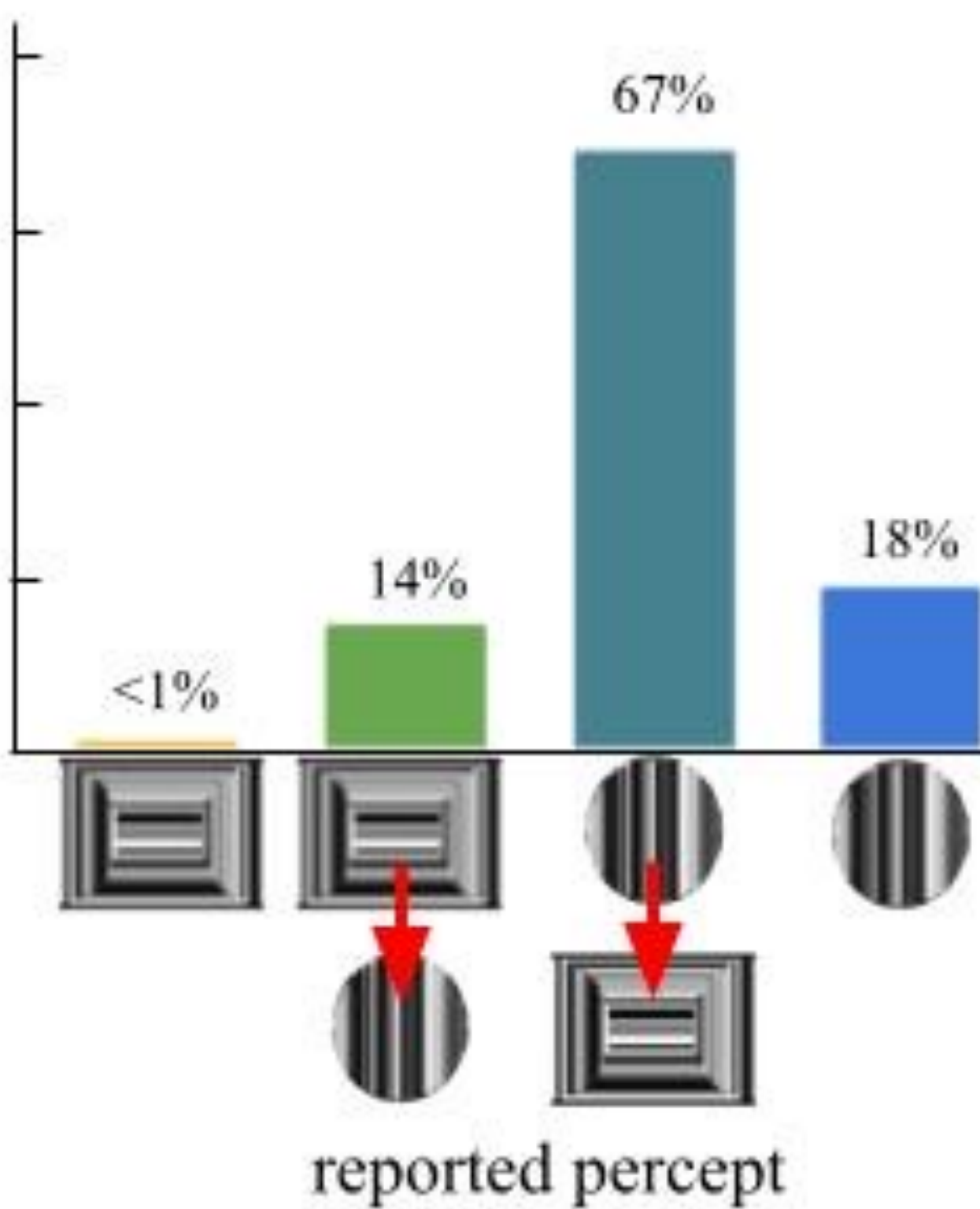
C. **Village**
Minimal 90° angles



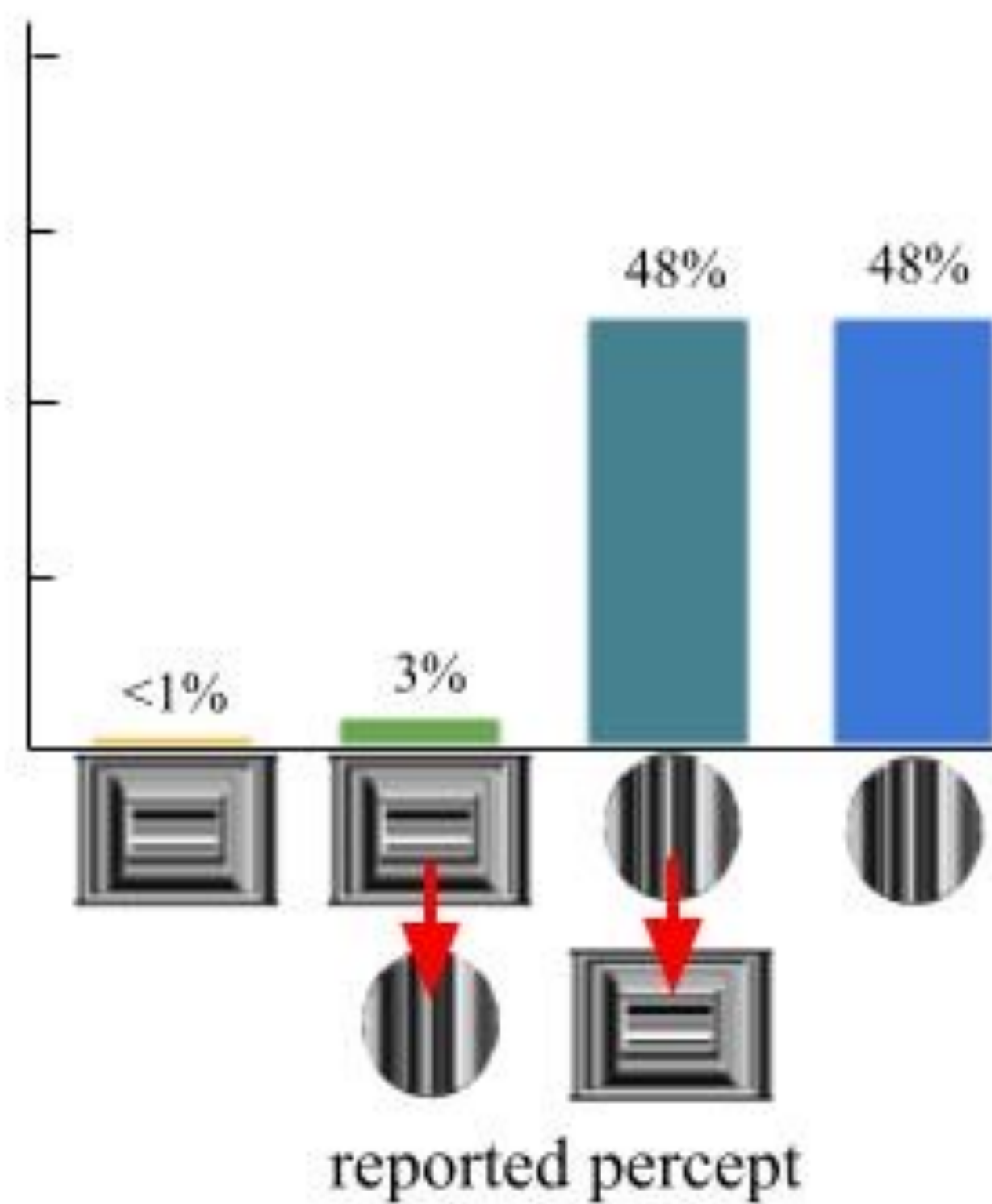
A. UK/US
Many 90° angles

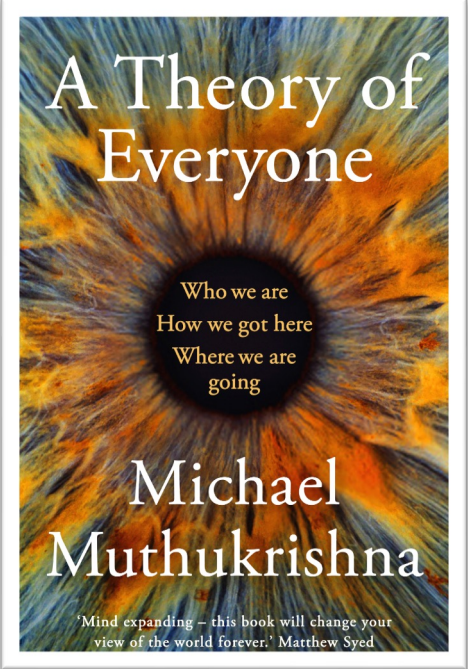
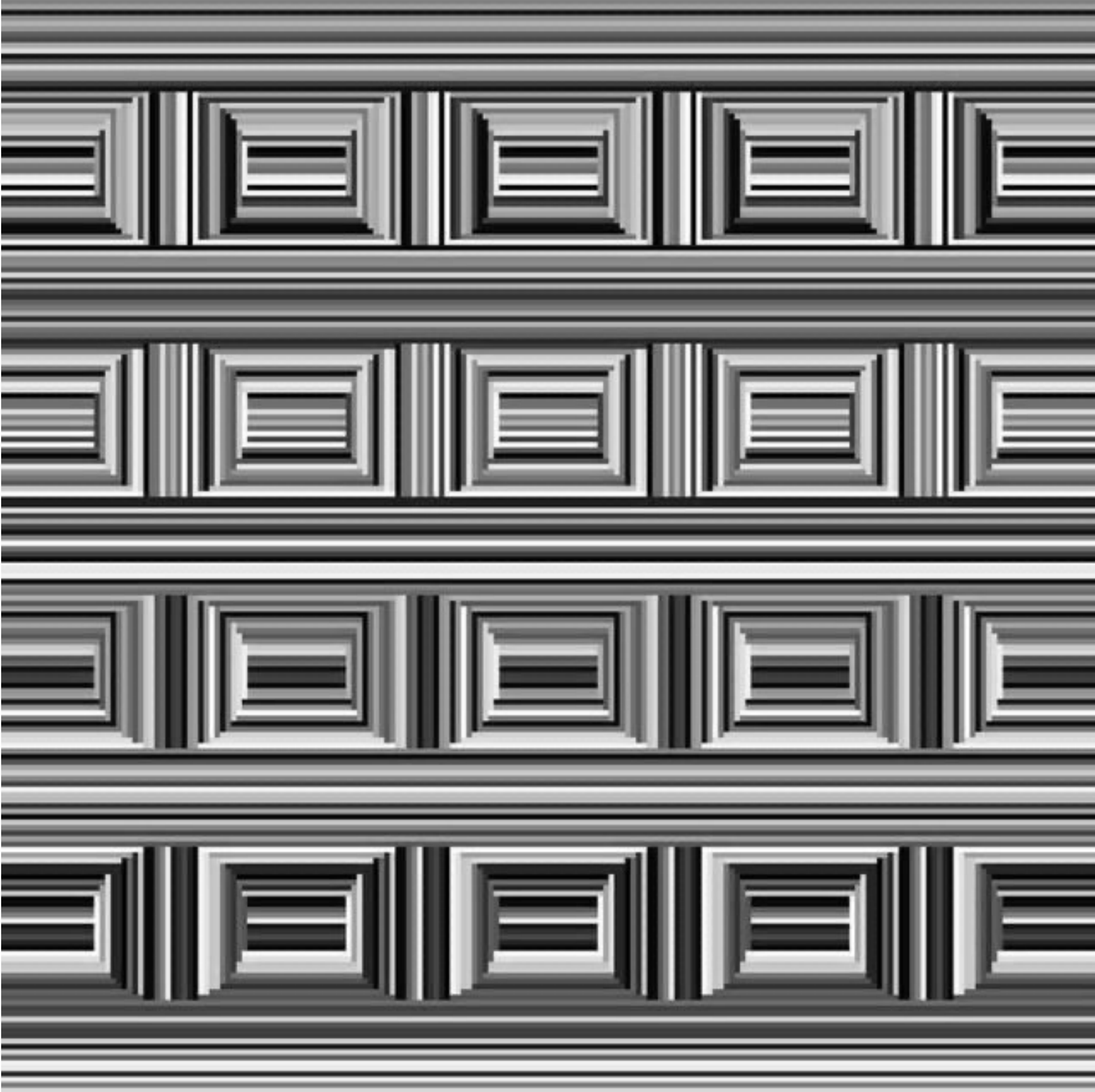


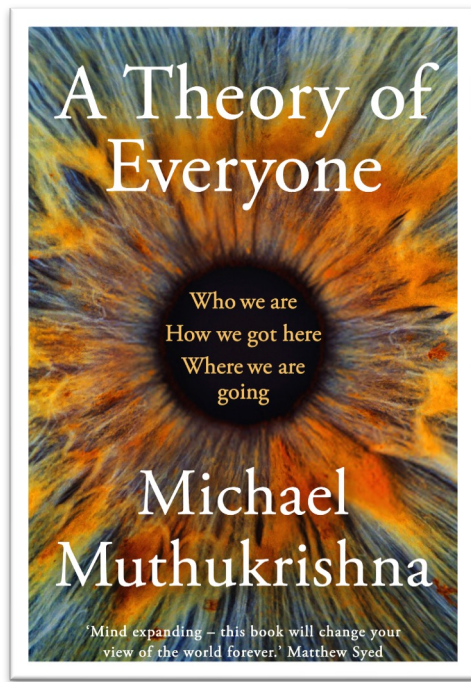
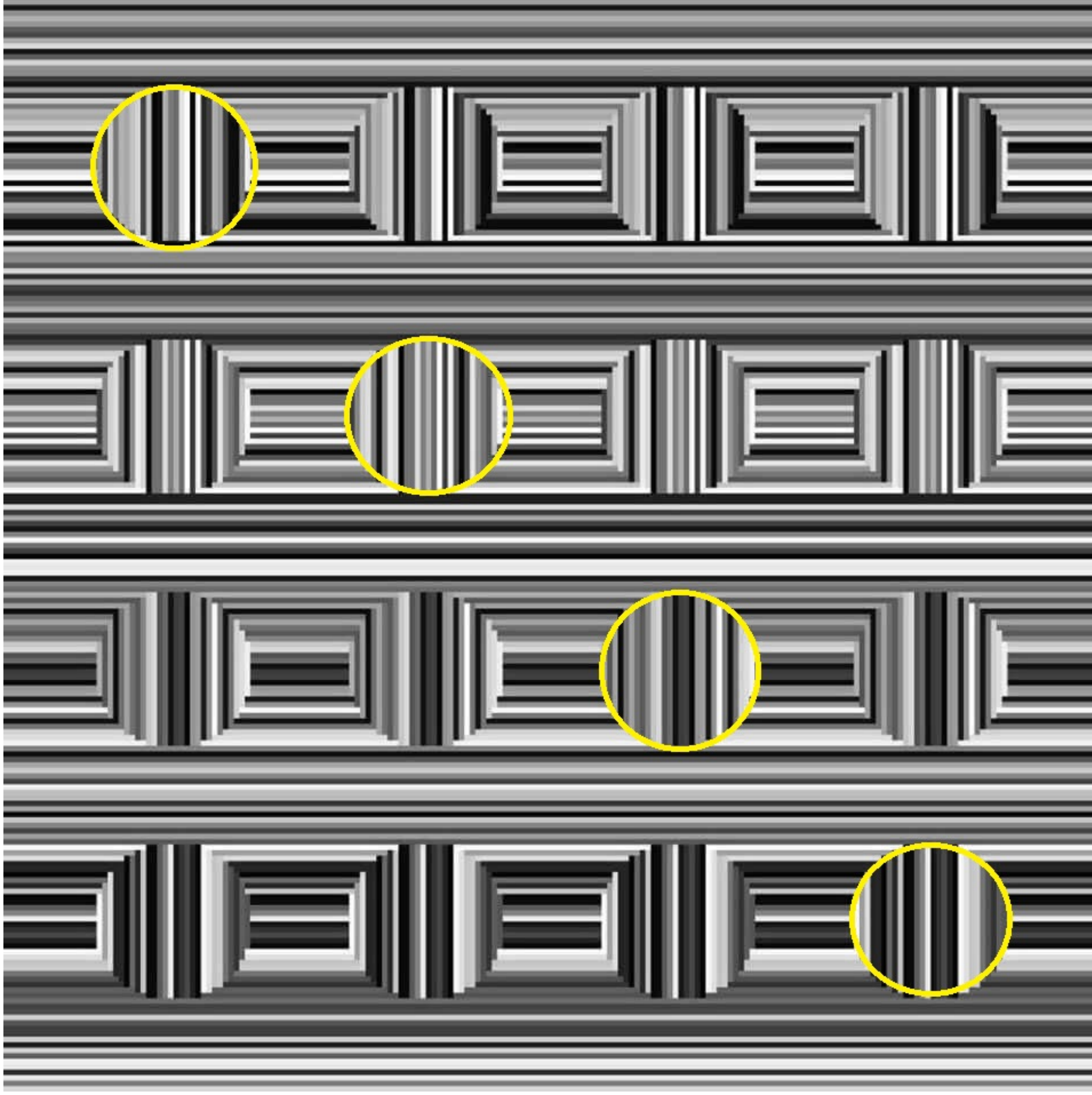
B. Town
Limited 90° angles

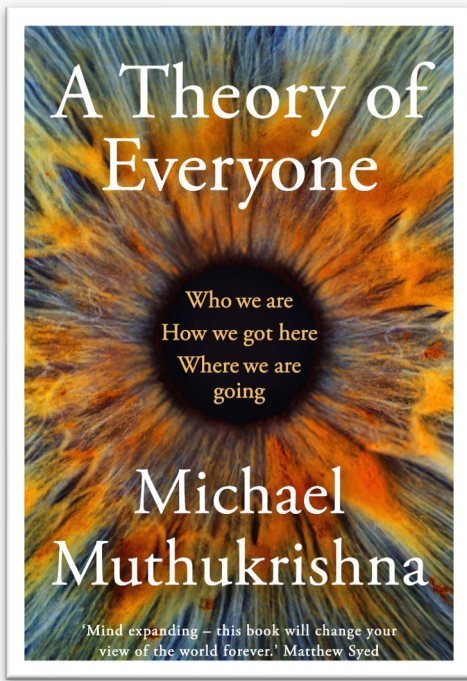


C. Village
Minimal 90° angles









Our Intelligence is in our Software

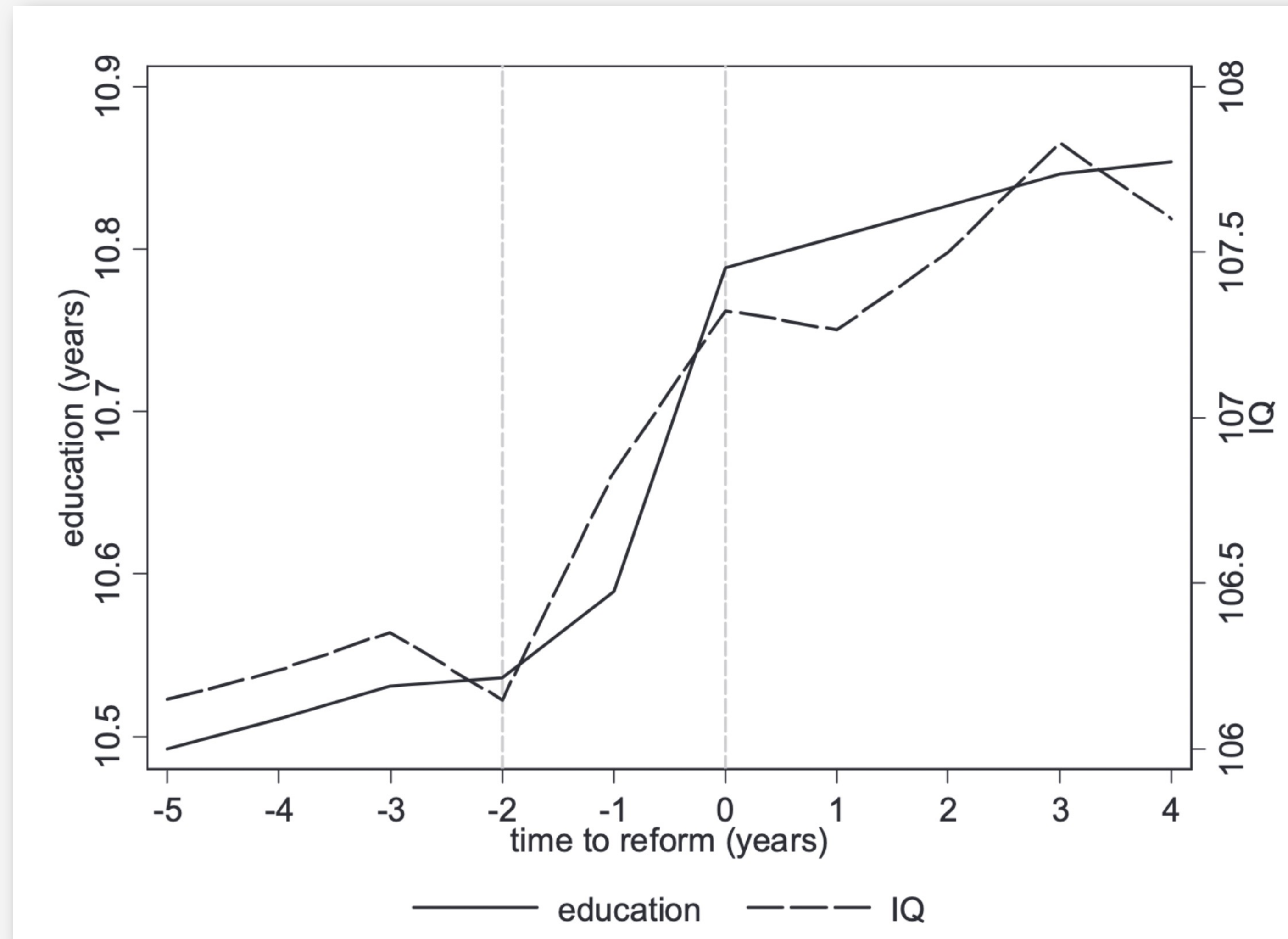
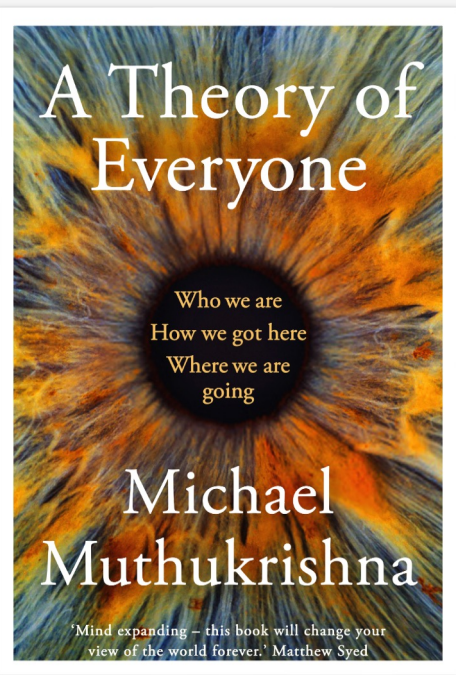
Uchiyama, R., Spicer, R., & Muthukrishna, M. (2022). Cultural evolution of genetic heritability. *Behavioral and Brain Sciences*

Henrich, J., & Muthukrishna, M. (2023) What makes us smart? *Topics in Cognitive Science*

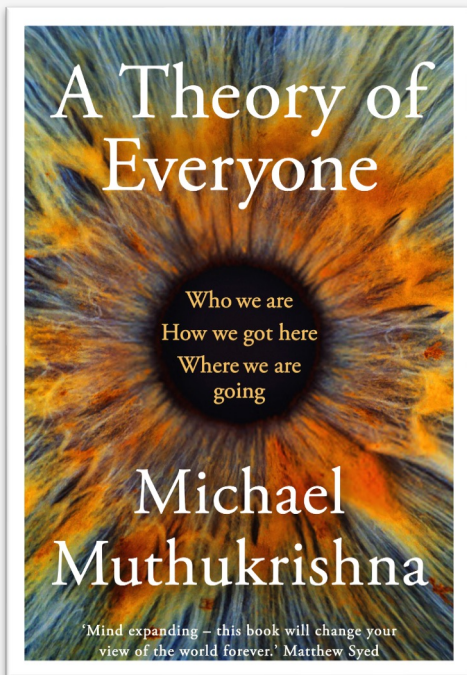
Davis, H. E., Henrich, J. & Muthukrishna, M. (2023). Formal education increases IQ Test Performance: Causal Evidence from a Natural Experiment in Namibia and Angola. *Working Paper*

Muthukrishna, M. (2023) A Theory of Everyone: The New Science of Who We Are, How We Got Here, and Where We're Going, *MIT Press & Basic Books*

What makes us smart?



What makes us smart?



How Much Does Education Improve Intelligence? A Meta-Analysis



Stuart J. Ritchie^{1,2} and Elliot M. Tucker-Drob^{3,4}

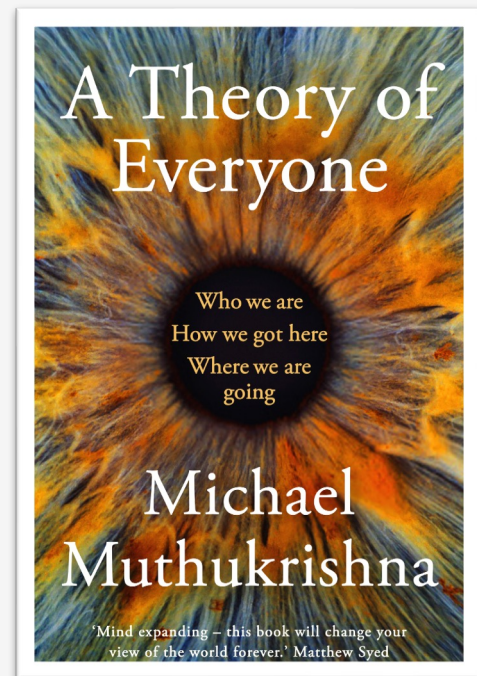
¹Department of Psychology, The University of Edinburgh; ²Centre for Cognitive Ageing and Cognitive Epidemiology, The University of Edinburgh; ³Department of Psychology, University of Texas at Austin; and ⁴Population Research Center, University of Texas at Austin

Abstract

Intelligence test scores and educational duration are positively correlated. This correlation could be interpreted in two ways: Students with greater propensity for intelligence go on to complete more education, or a longer education increases intelligence. We meta-analyzed three categories of quasiexperimental studies of educational effects on intelligence: those estimating education-intelligence associations after controlling for earlier intelligence, those using compulsory schooling policy changes as instrumental variables, and those using regression-discontinuity designs on school-entry age cutoffs. Across 142 effect sizes from 42 data sets involving over 600,000 participants, we found consistent evidence for beneficial effects of education on cognitive abilities of approximately 1 to 5 IQ points for an additional year of education. Moderator analyses indicated that the effects persisted across the life span and were present on all broad categories of cognitive ability studied. Education appears to be the most consistent, robust, and durable method yet to be identified for raising intelligence.

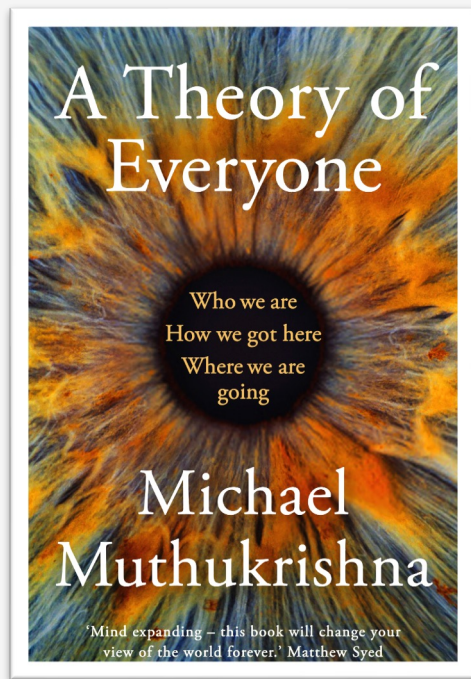
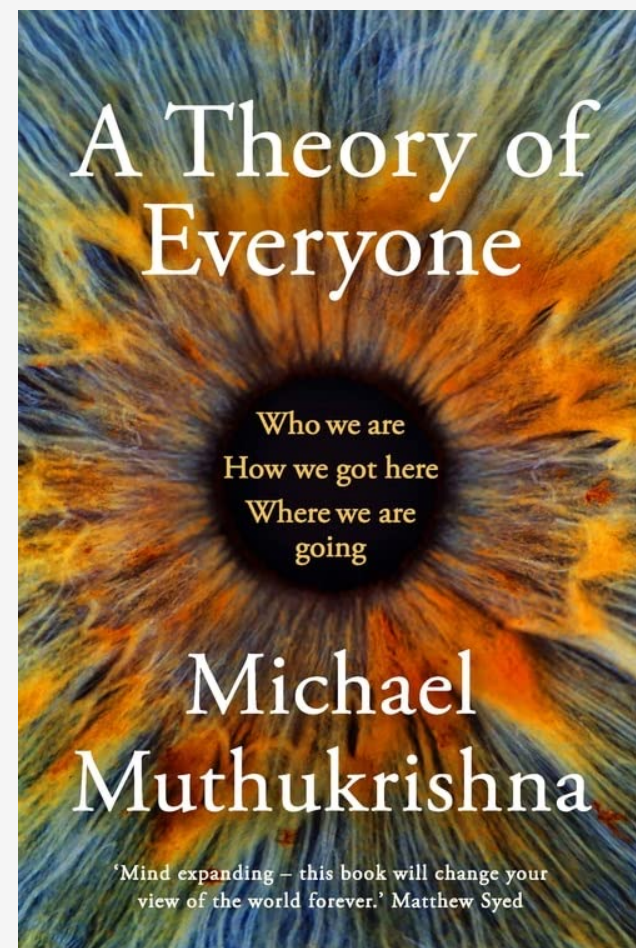
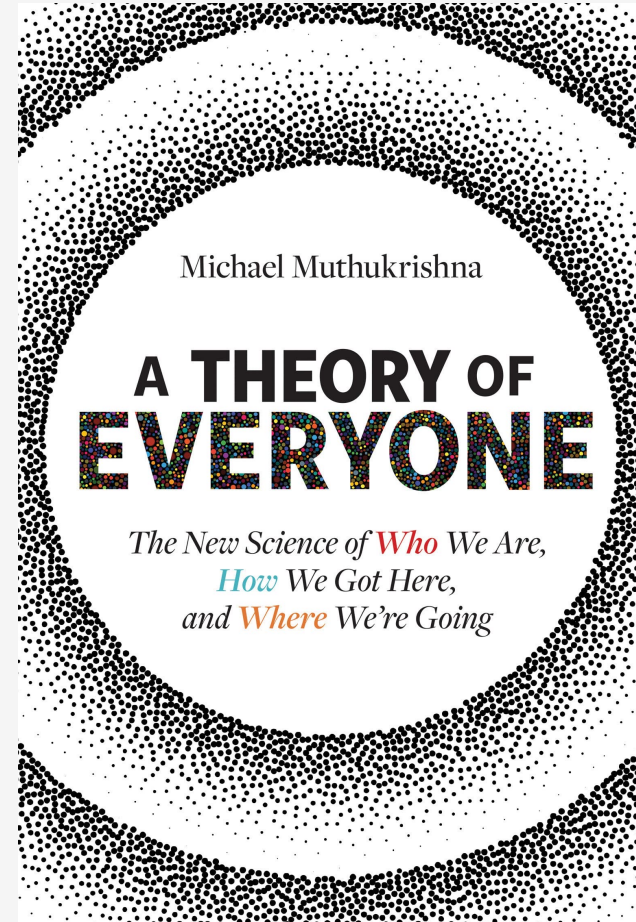
Psychological Science
2018, Vol. 29(8) 1358–1369
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DOI: 10.1177/0956797618774253
www.psychologicalscience.org/PS


What makes us smart?



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Software of Our Minds

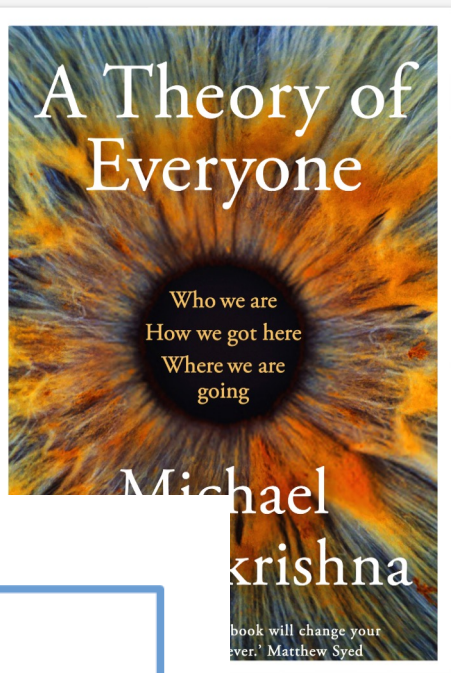


1, 2, 3, many...

I, II, III, IV, V, VI...

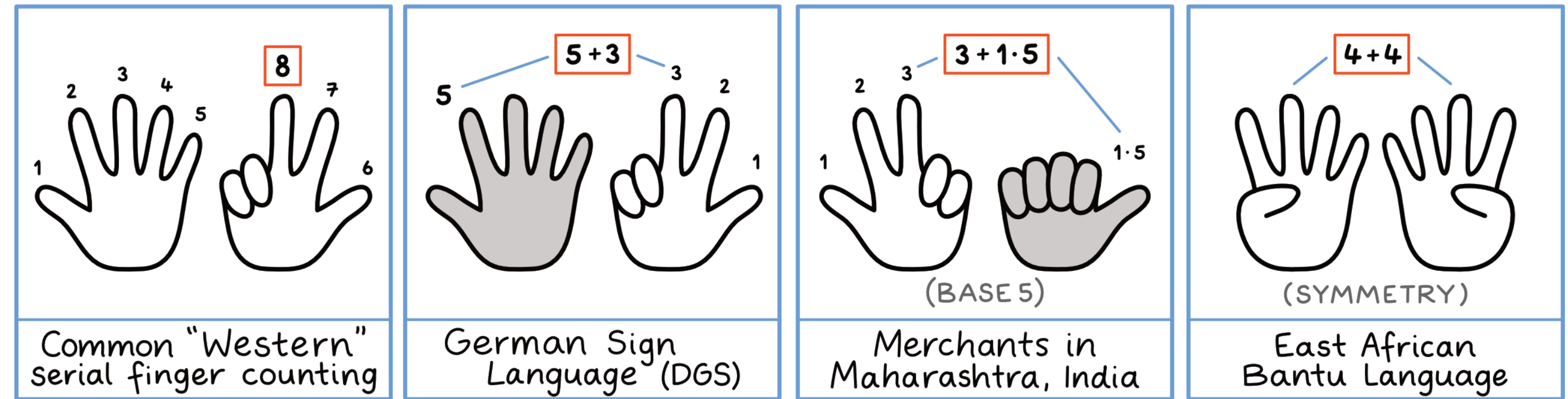


Software of Our Minds

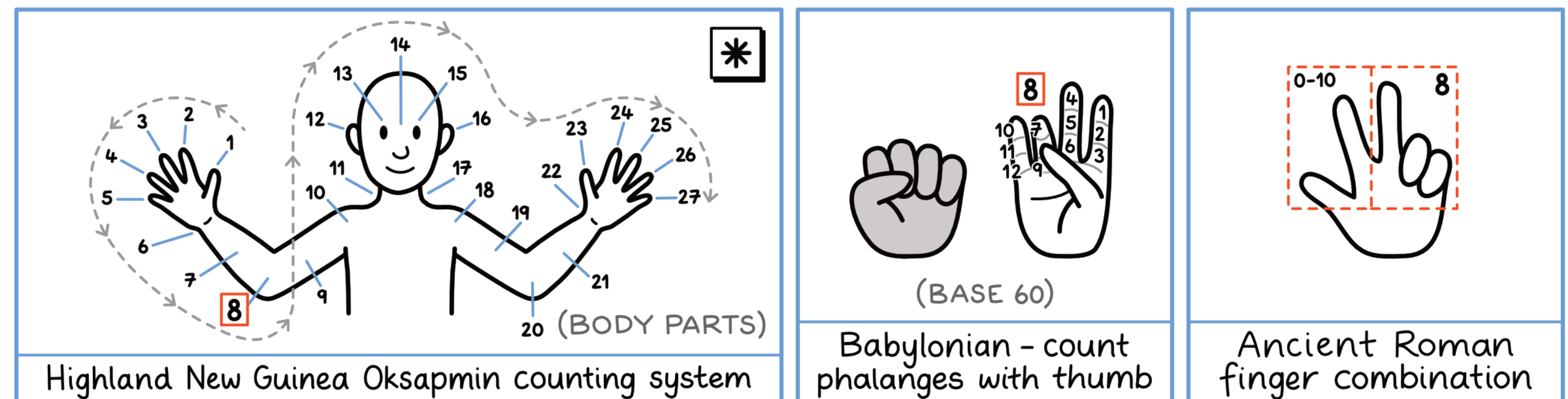


1, 2, 3, many...

I, II, III, IV, V, VI...



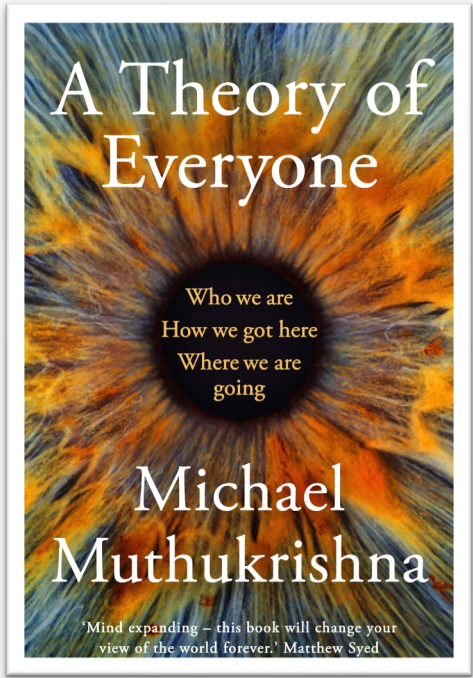
~~~~~ CULTURAL & HISTORICAL VARIABILITY  
DIFFERENT WAYS to SHOW the NUMBER [8] ~~~~~ in FINGER COUNTING



© 2023 VERONIKA PLANT in collaboration with MICHAEL MUTHUKRISHNA

based on BENDER & BELLER (2011) \*based on MARMASSE et al. (2000)





# Software of Our Minds

1, 2, 3, many...

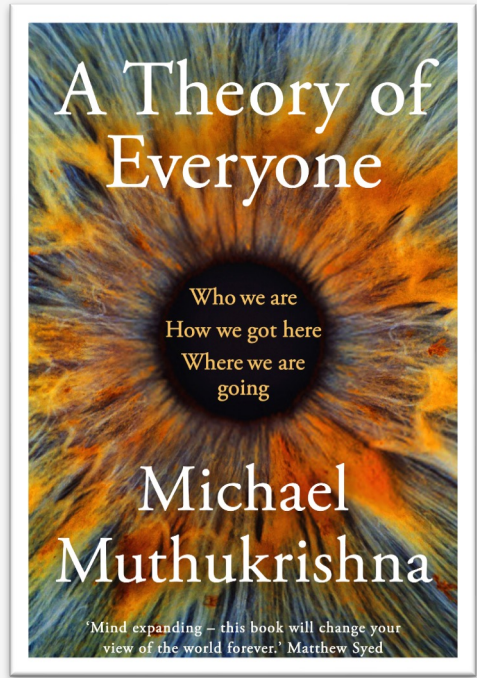
I, II, III, IV, V, VI...

0?





# Software of Our Minds



1, 2, 3, many...

0?

I, II, III, IV, V, VI...

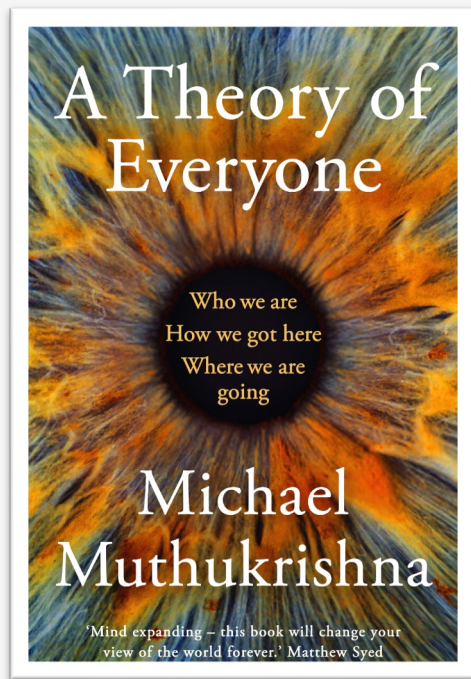


“Negative numbers **darken the very whole doctrines of the equations...**”

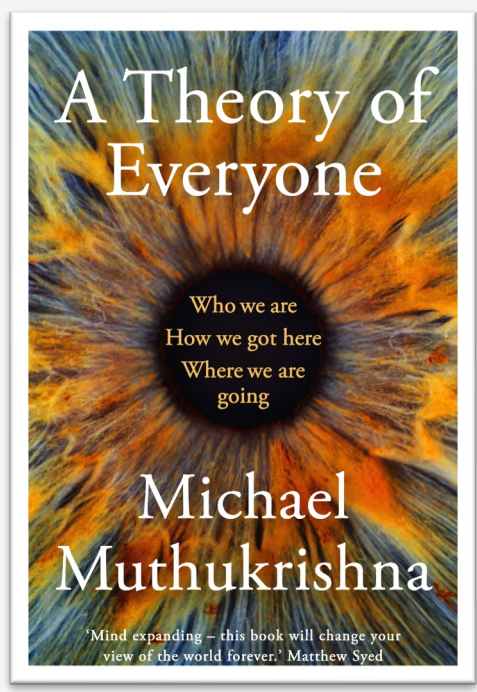
– FRANCIS MASÈRES, 1759



# Software of Our Minds





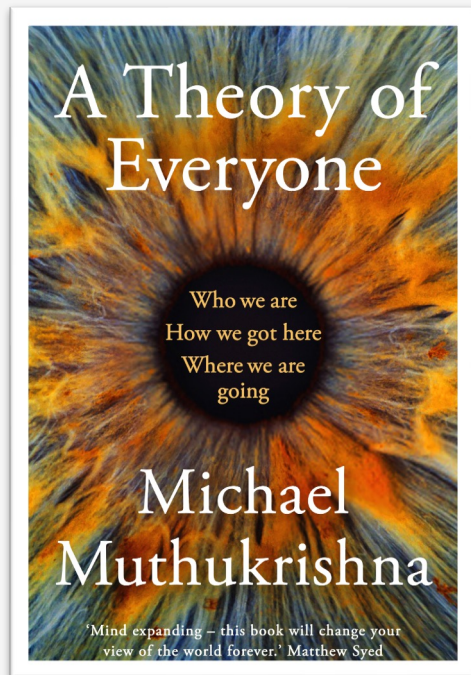


# Software of Our Minds





# Software of Our Minds

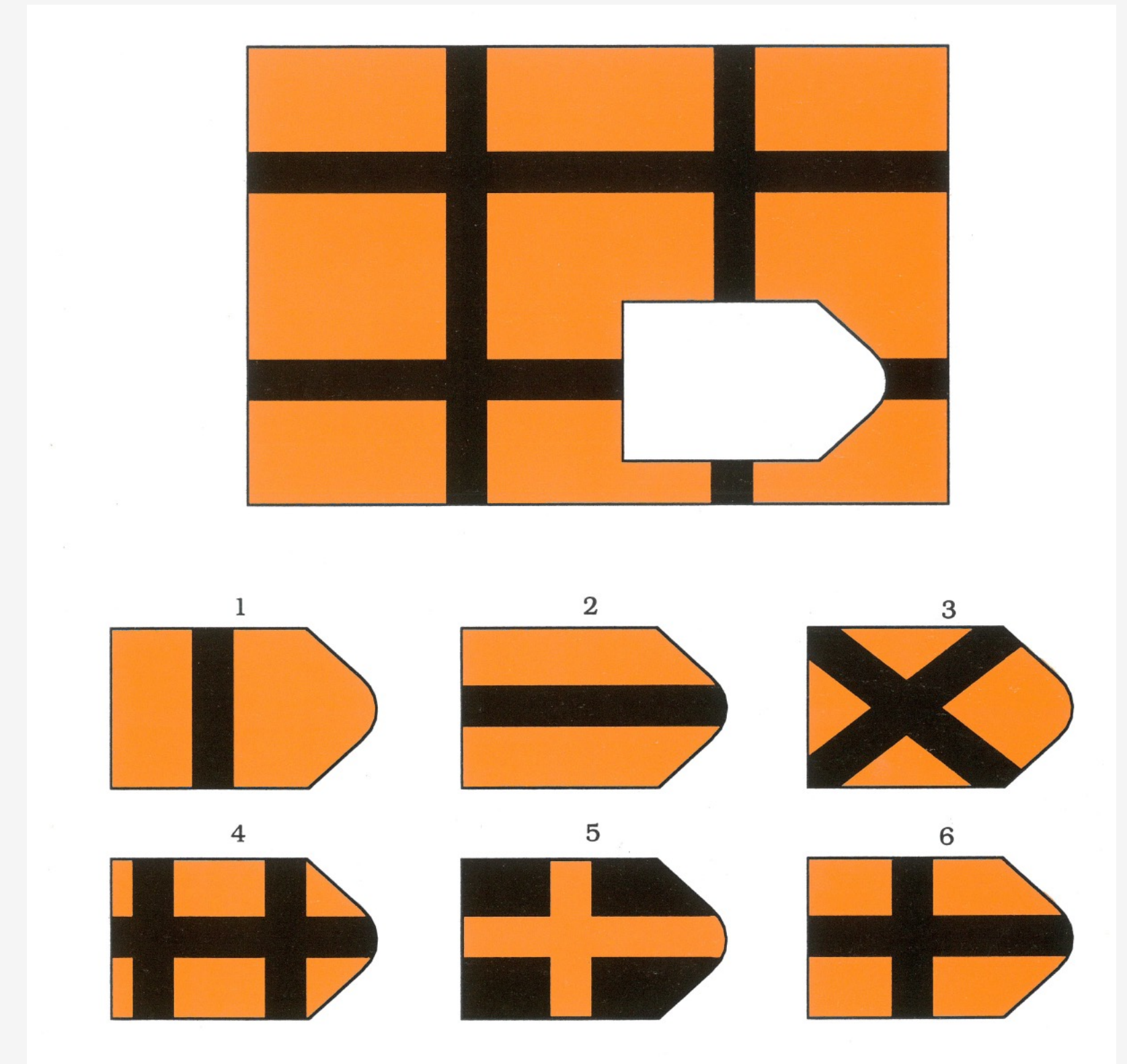


129 participants

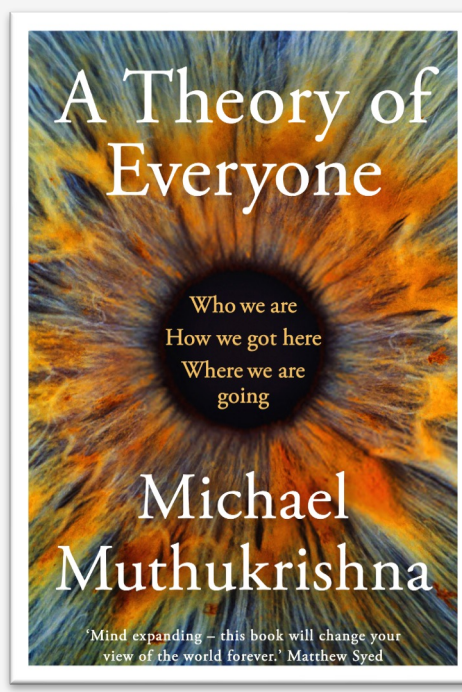
Table 1: Descriptive statistics on key variables

| Variable                    | No school |        |       | School |        |       | Test         |
|-----------------------------|-----------|--------|-------|--------|--------|-------|--------------|
|                             | N         | Mean   | SD    | N      | Mean   | SD    |              |
| Age (years)                 | 41        | 12.44  | 3.89  | 88     | 12.24  | 2.78  | F= 0.112     |
| Sex (0 = girls)             | 41        |        |       | 88     |        |       | F= 0.021     |
| Height (cm)                 | 38        | 130.59 | 23.64 | 81     | 136.52 | 16.81 | F= 2.45      |
| Weight (kg)                 | 39        | 40.07  | 32.23 | 81     | 31.93  | 10.65 | F= 4.238**   |
| BMI                         | 38        | 22.50  | 18.37 | 81     | 16.64  | 1.90  | F= 8.144***  |
| Siblings (total)            | 19        | 6.84   | 3.18  | 86     | 6.14   | 2.36  | F= 1.205     |
| School (grade)              | 5         | 1.20   | 2.68  | 23     | 3.74   | 2.26  | F= 4.875**   |
| Reading ability (0-5)       | 40        | 0.19   | 0.70  | 83     | 2.20   | 2.04  | F= 36.77***  |
| Arithmitic (0-3)            | 40        | 0.05   | 0.32  | 83     | 1.14   | 1.07  | F= 39.267*** |
| Reading comprehension (0-4) | 40        | 0.00   | 0.00  | 83     | 0.88   | 1.46  | F= 14.454*** |
| RCPM (z score)              | 40        | 10.88  | 2.95  | 84     | 15.01  | 5.80  | F= 18.067*** |
| QT (z score)                | 26        | 11.35  | 6.53  | 63     | 21.89  | 8.28  | F= 33.478*** |

Statistical significance markers: \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$

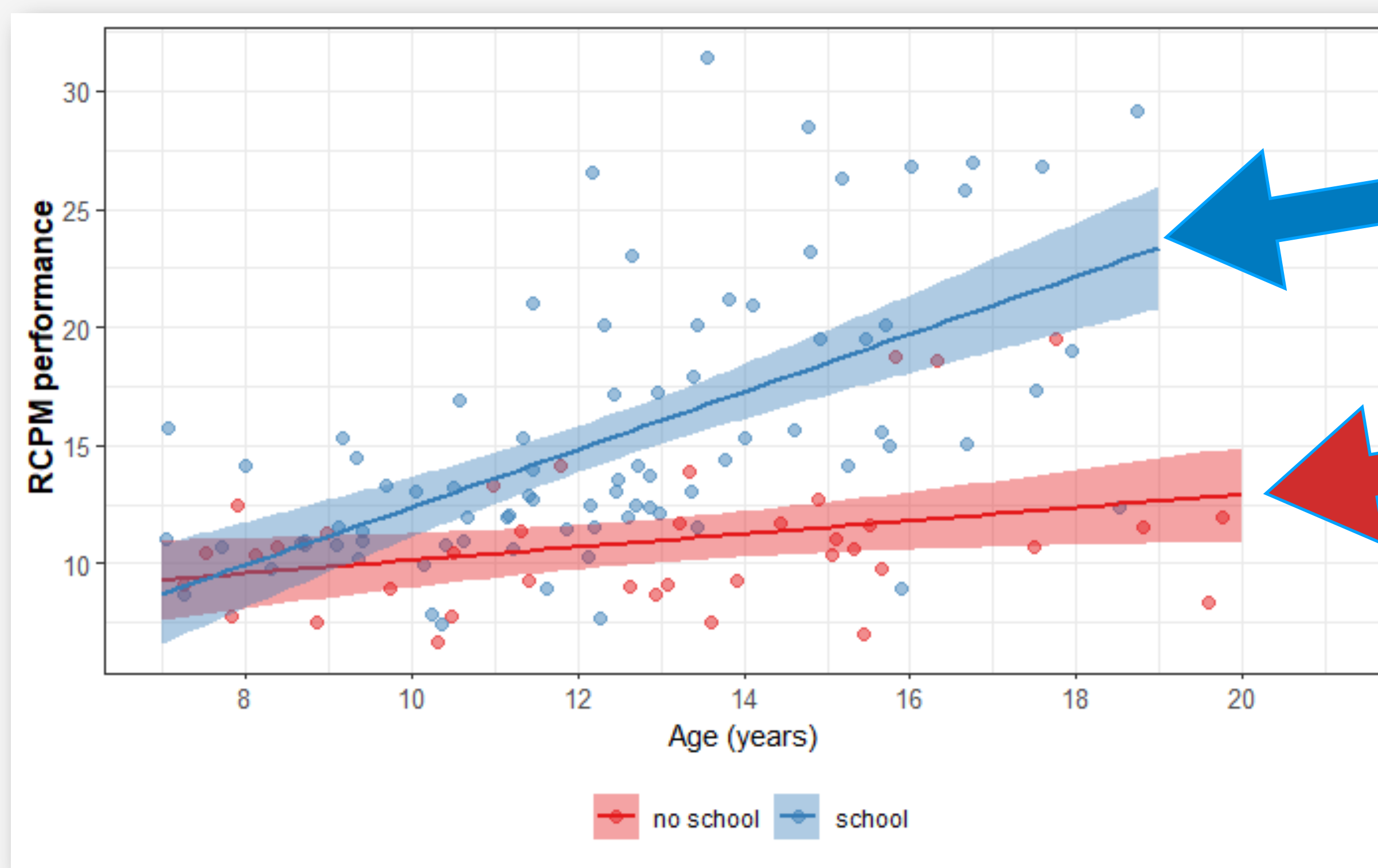






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129 participants

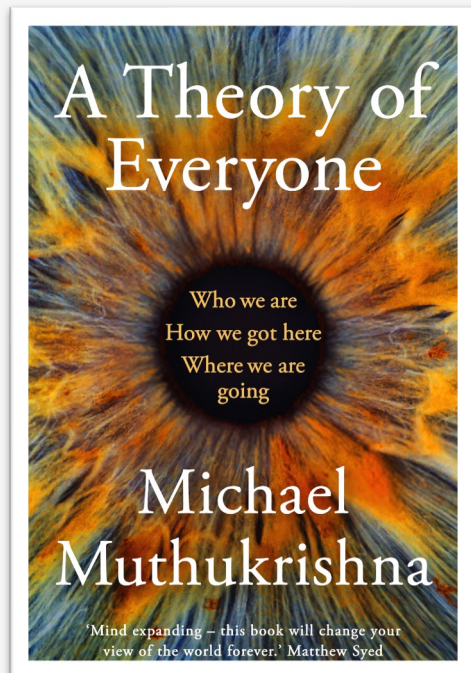


$b = 1.22, p < .001$

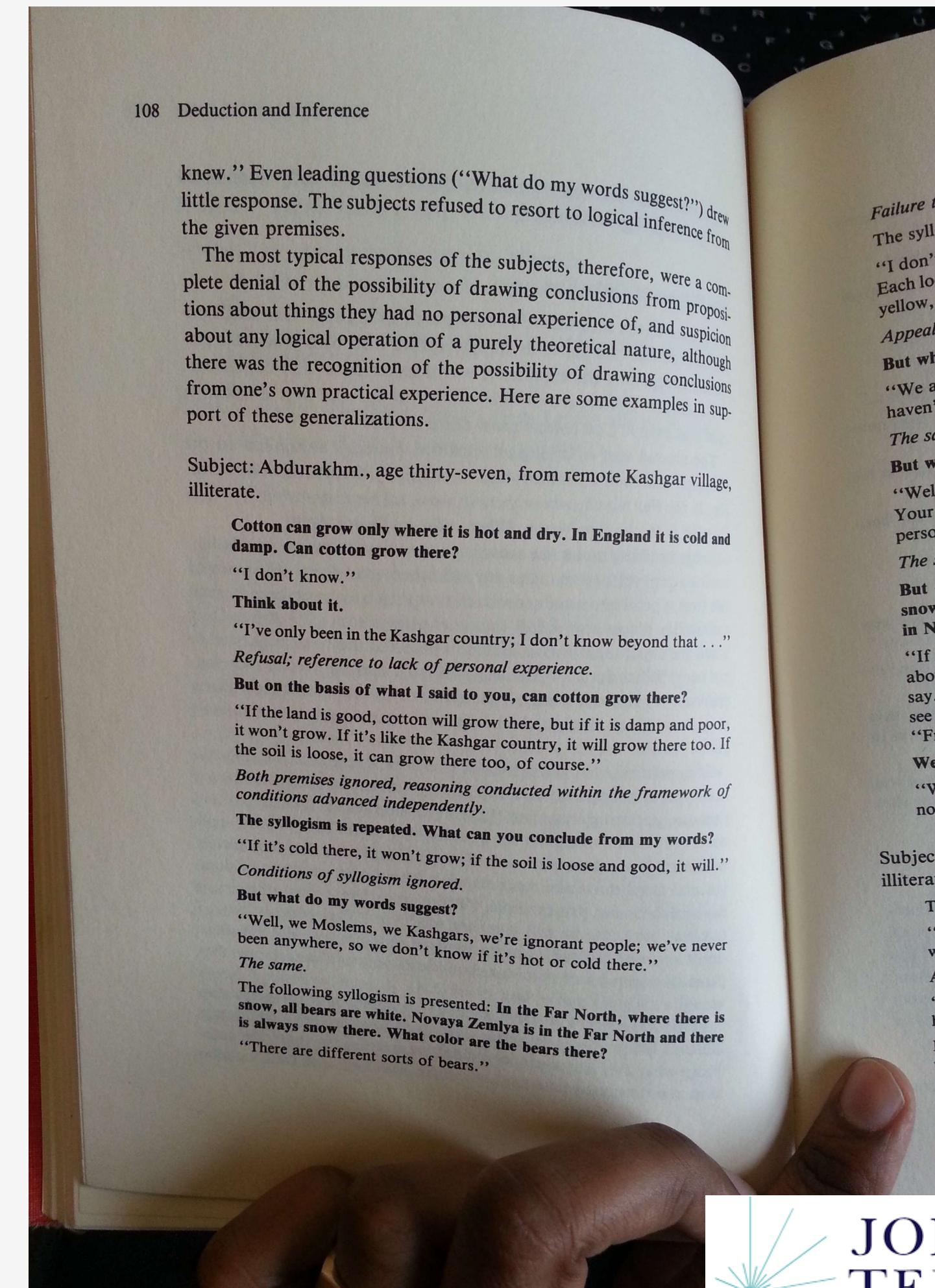
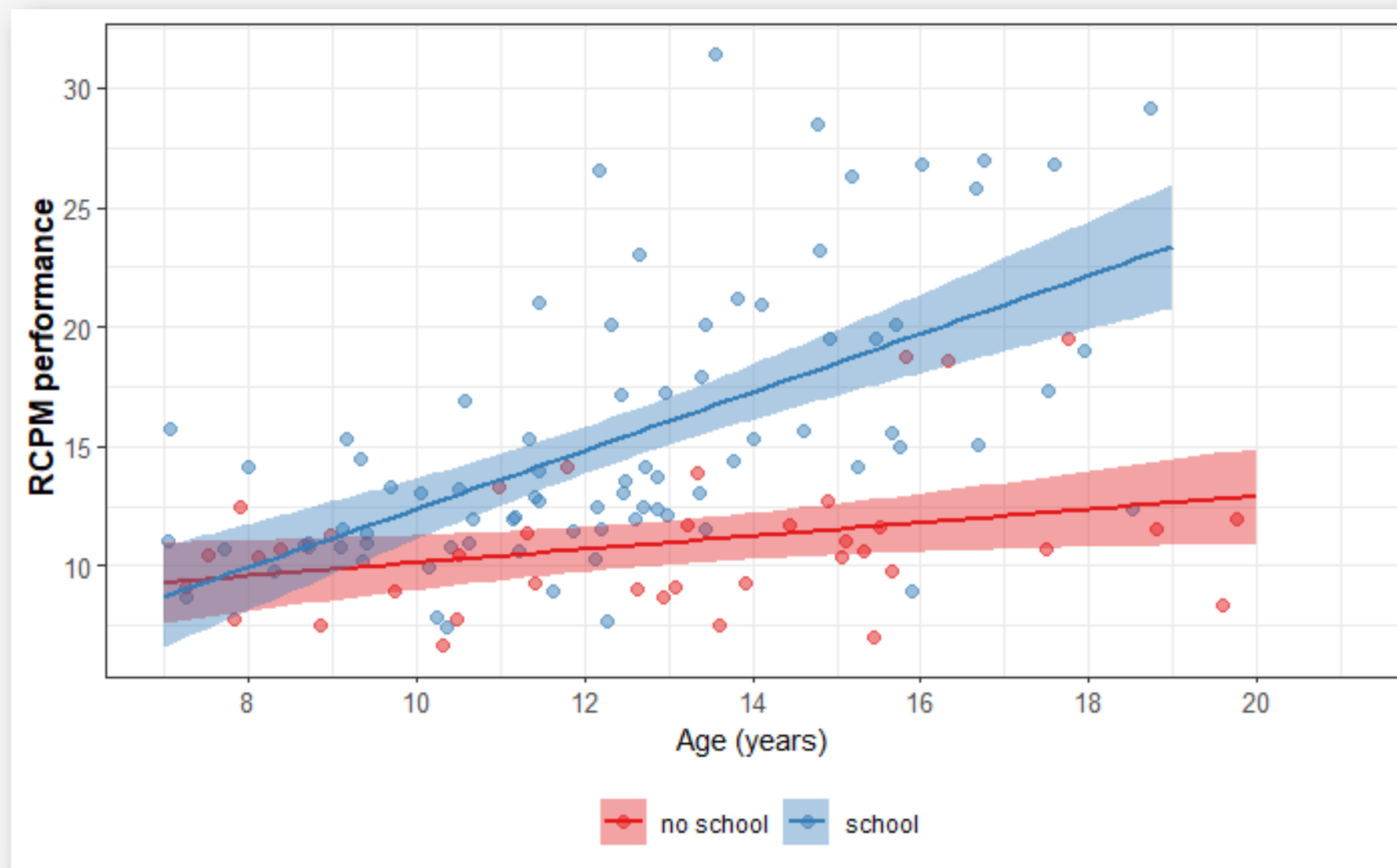
$b = 0.27, p = .03$



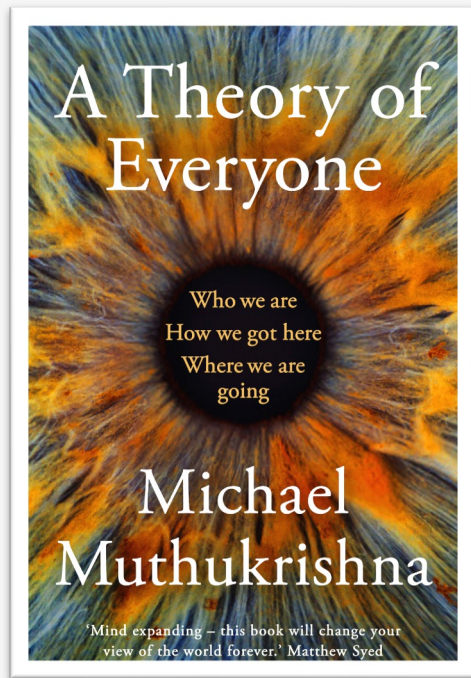
# Software of Our Minds



129 participants

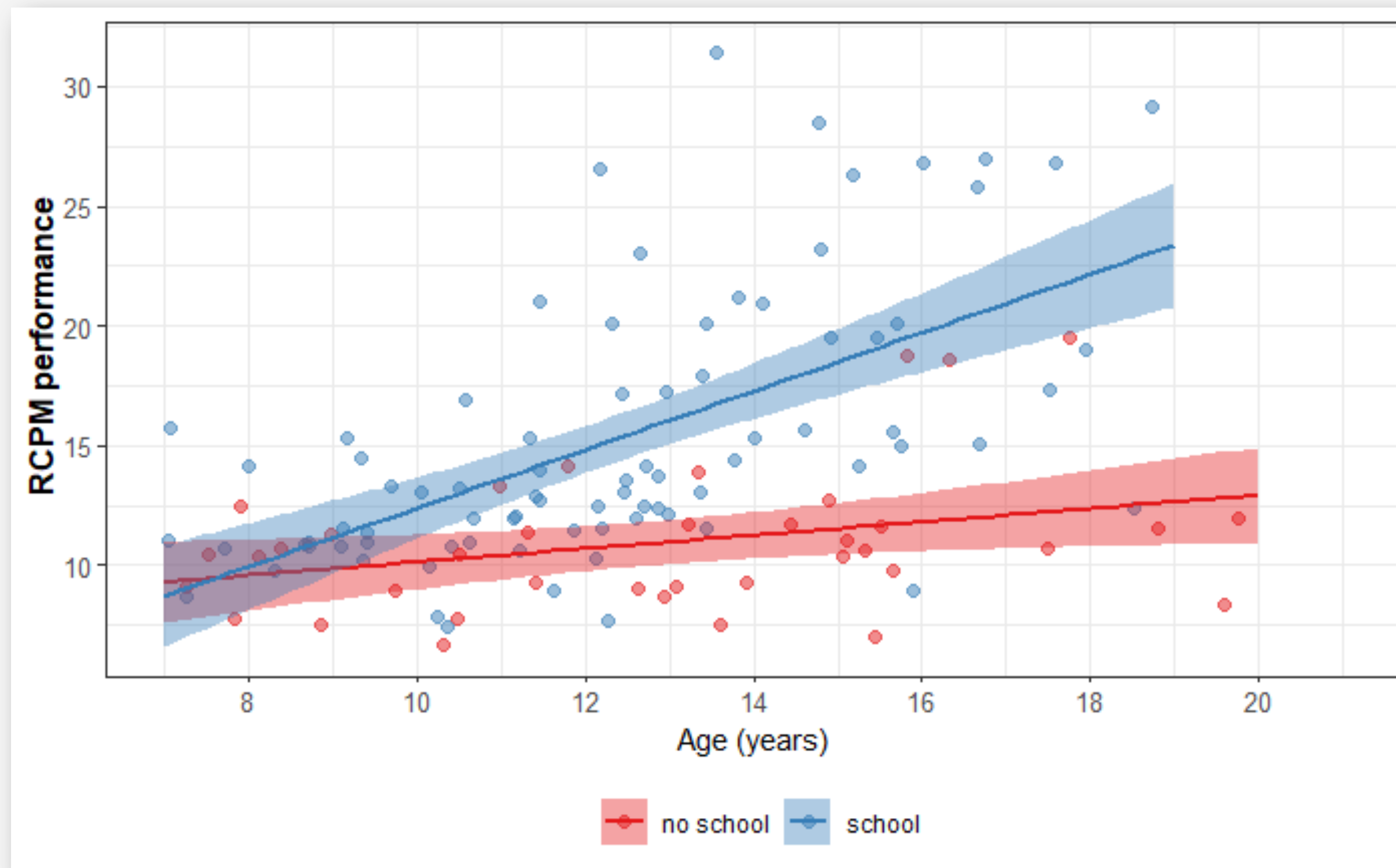






# Software of Our Minds

129 participants



**Luria:** *“In the North, there is snow, and all bears are white. Novaya Zemlya is in the far North. What color are the bears there?”*

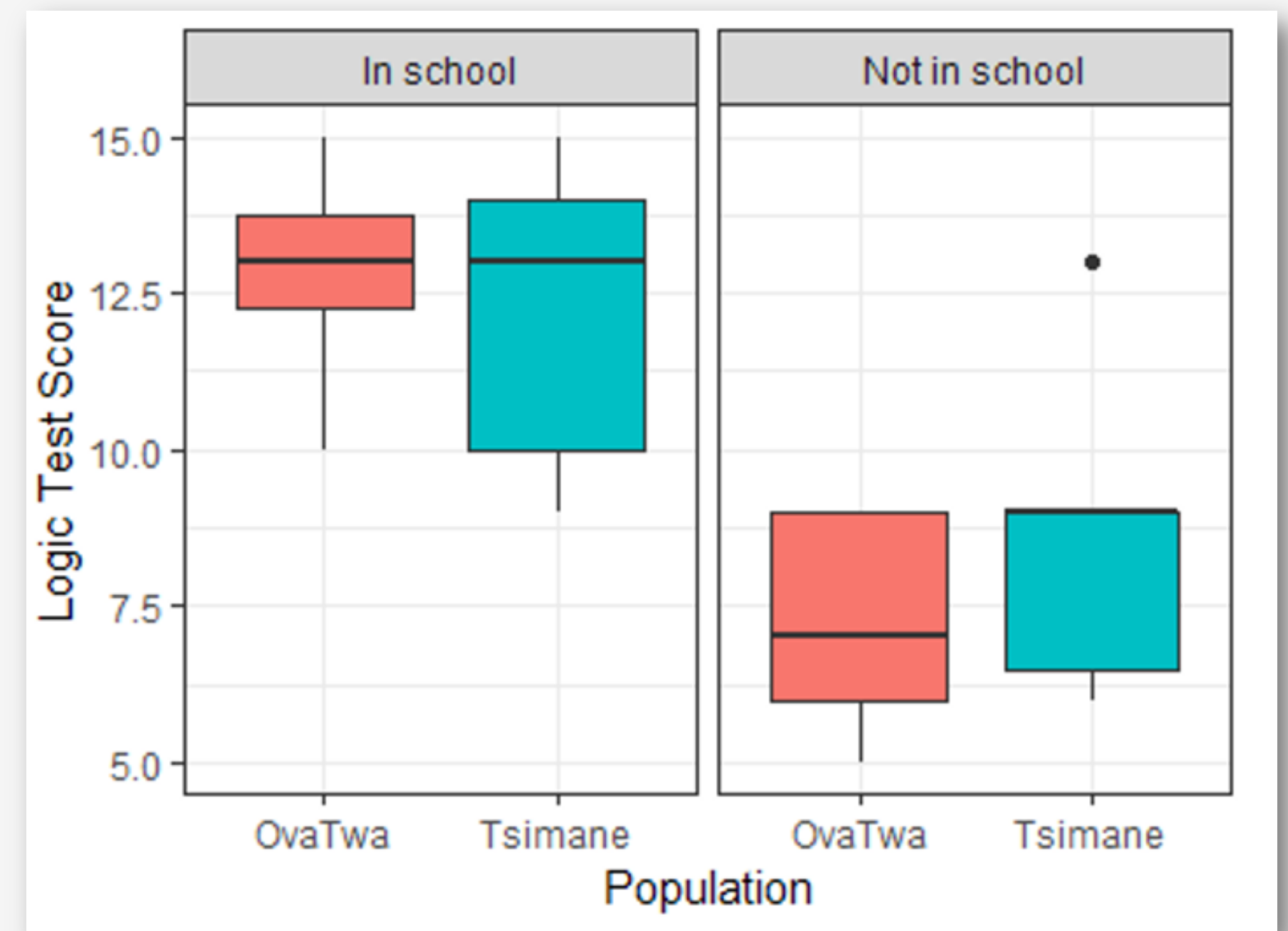
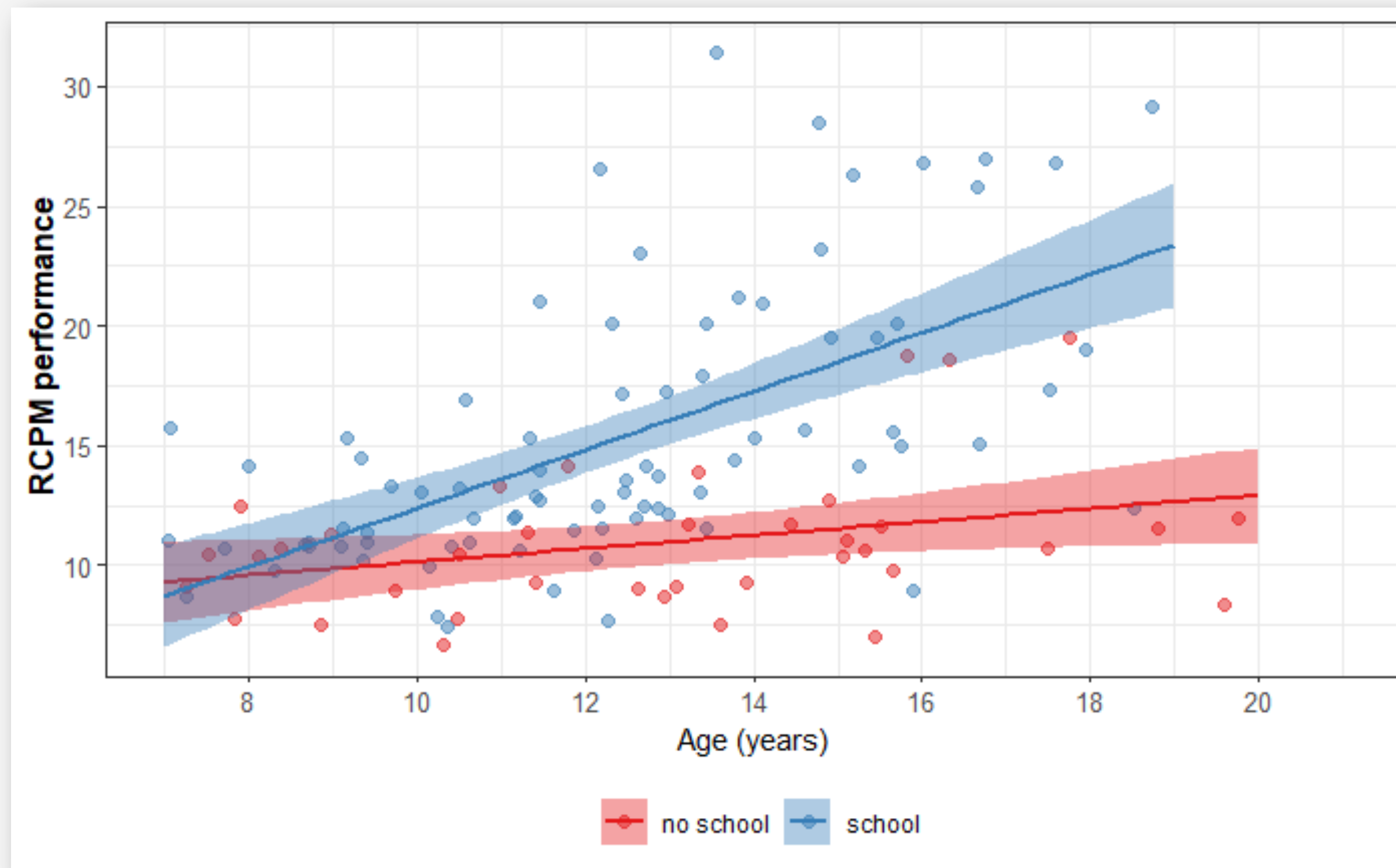
**Peasant:** *“I don’t know. I’ve never been to the far North. I saw a black bear here once.”*





# Software of Our Minds

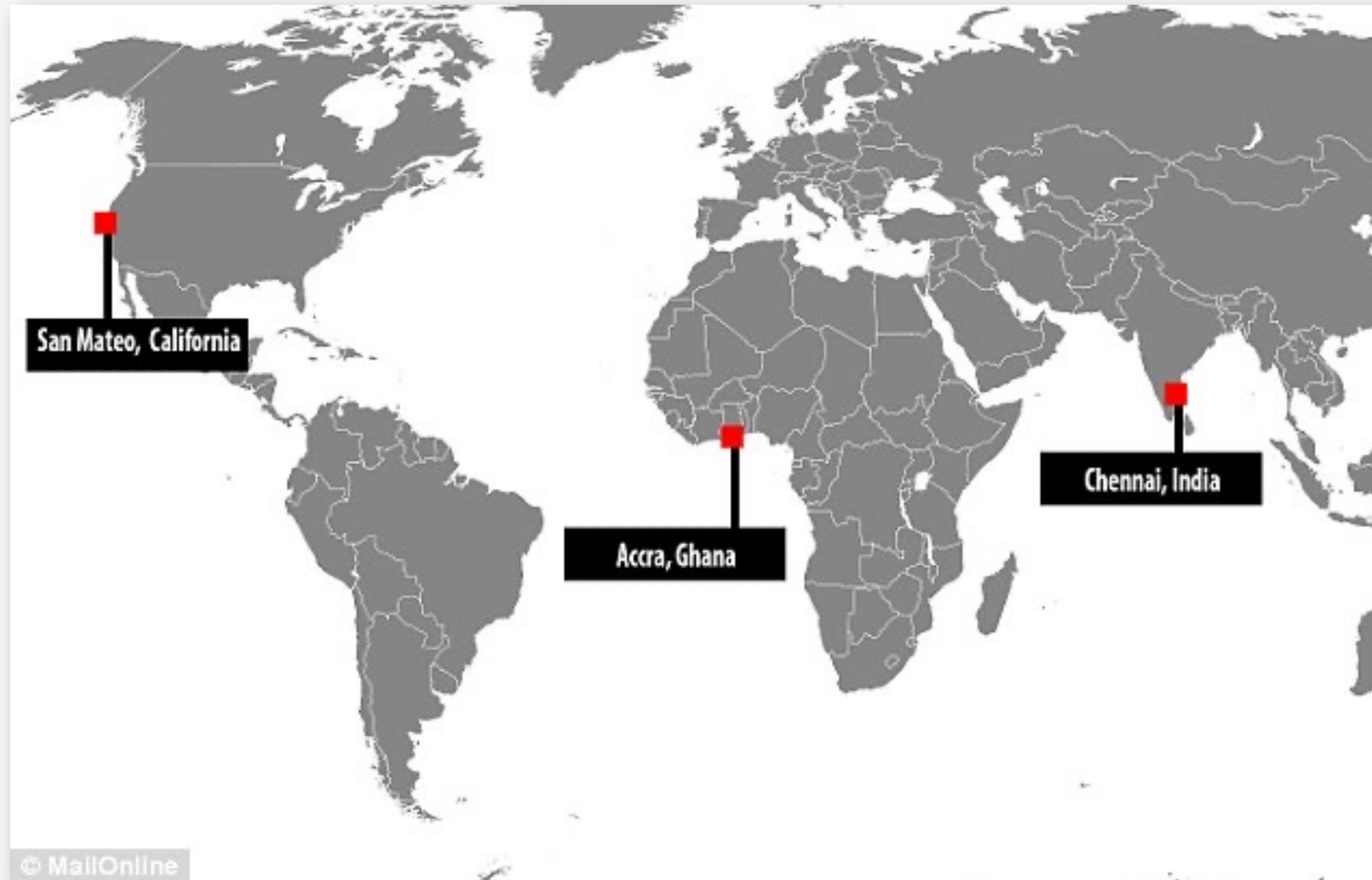
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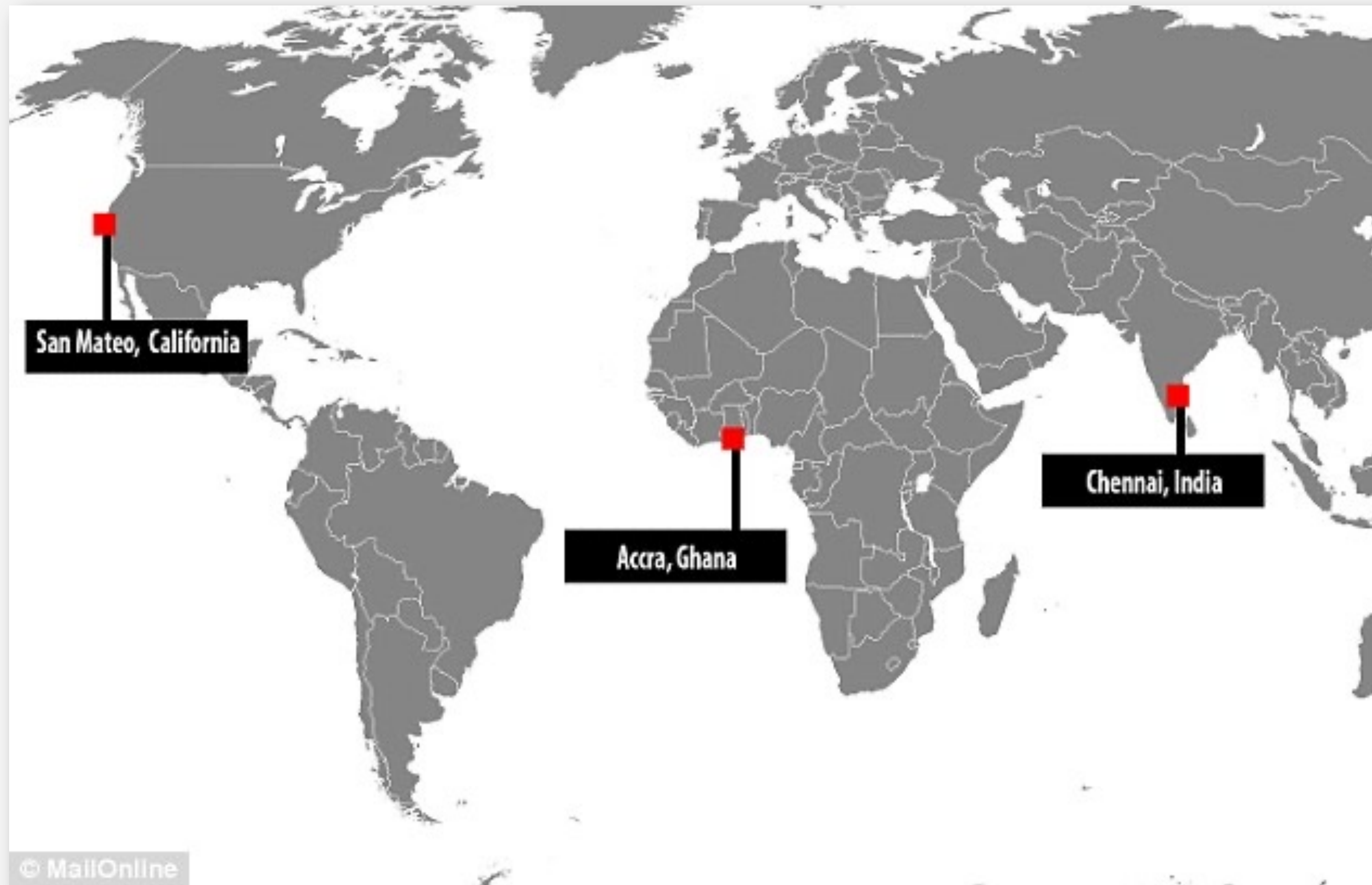


Luhrmann, T. M., Padmavati, R., Tharoor, H., & Osei, A. (2015). Hearing voices in different cultures: A social kindling hypothesis. *Topics in cognitive science*, 7(4), 646-663.





# Software of Our Minds



## Good Reasons for Bad Feelings

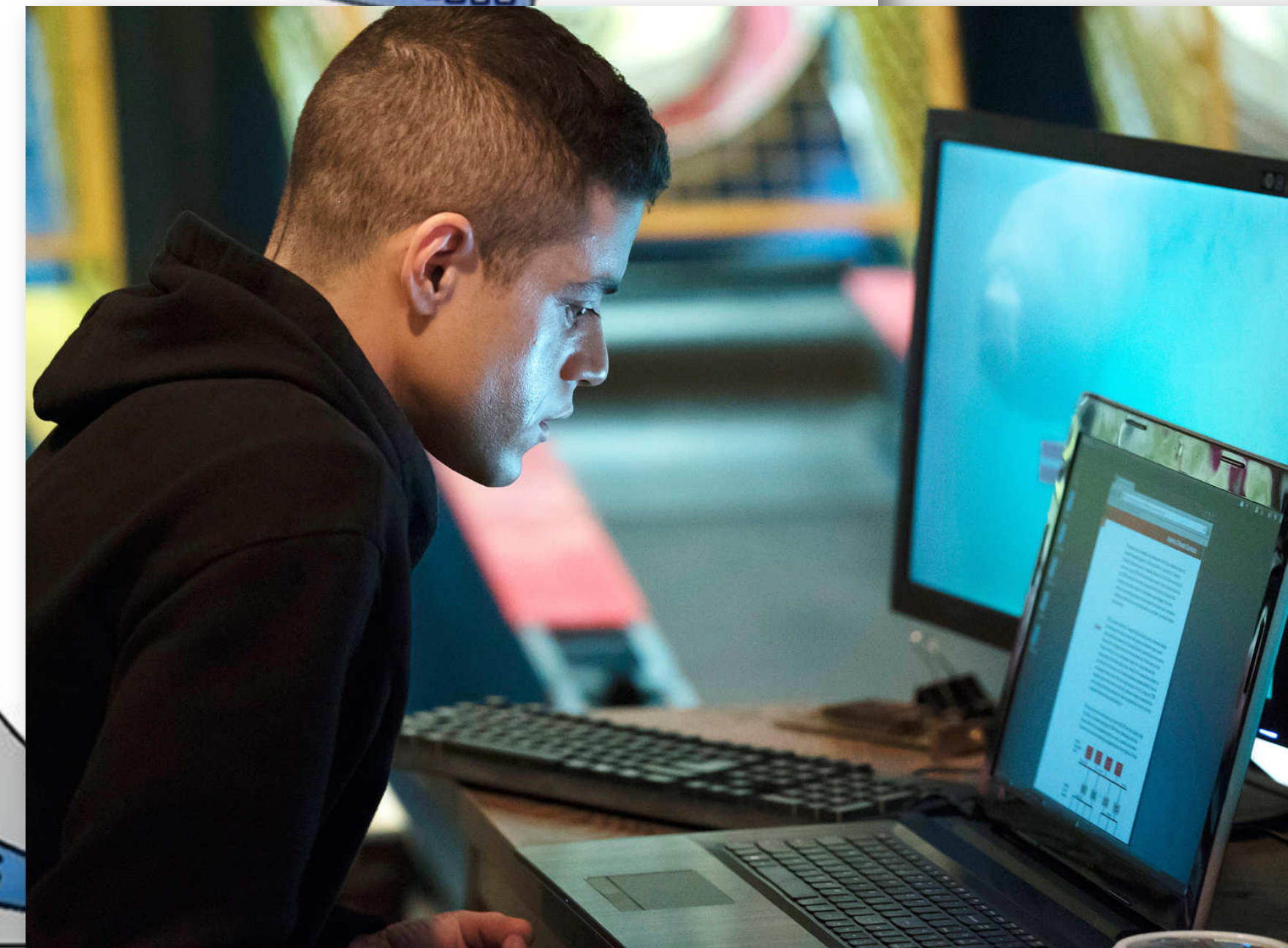
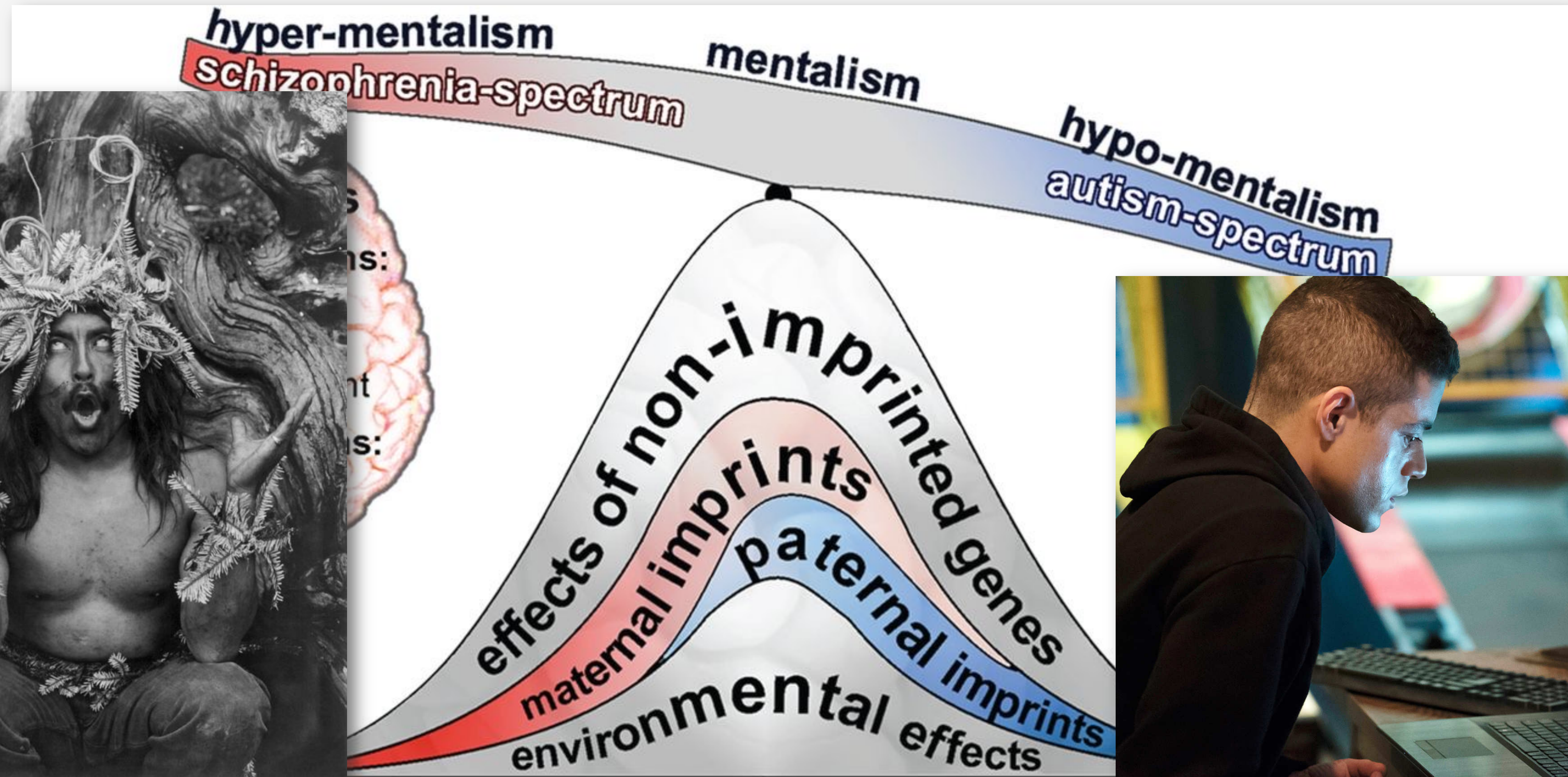
*Insights from the Frontier of Evolutionary Psychiatry*

**RANDOLPH M. NESSE**





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Byars, S. G., Stearns, S. C., & Boomsma, J. J. (2014). Opposite risk patterns for autism and schizophrenia are associated with normal variation in birth size: phenotypic support for hypothesized diametric gene-dosage effects. *Proceedings of the Royal Society B: Biological Sciences*





# Software of Our Minds

blue yellow red  
purple black





# Software of Our Minds

blue yellow red  
purple black





# Software of Our Minds

blue yellow red

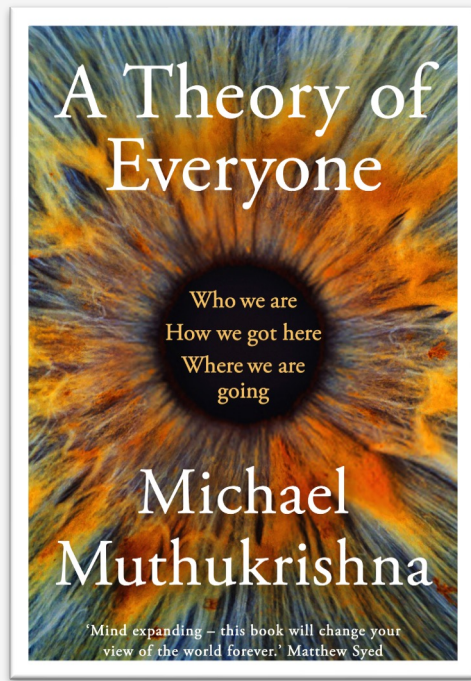
purple black

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blue yellow red

purple black





# What does all this mean practically?

Uchiyama, R., Spicer, R., & Muthukrishna, M. (2022). Cultural evolution of genetic heritability. *Behavioral and Brain Sciences*

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Muthukrishna, M. (2023) A Theory of Everyone: The New Science of Who We Are, How We Got Here, and Where We're Going, *MIT Press & Basic Books*



OUR SOFTWARE IS FLEXIBLE

OUR SOFTWARE CAN BE REWRITTEN

MENTAL MODELS MATTER

INNOVATION IS A SOCIAL PROCESS

AI CAN ACCELERATE CULTURAL EVOLUTION



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The Guardian

# A Theory of Everyone

Who we are  
How we got here  
Where we are  
going

Michael  
Muthukrishna

‘Mind expanding – this book will change your  
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