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Public (mis)understanding of tDCS as a cognitive enhancer

Laura Cabrera
& Peter Reiner

Governance of Emerging Technologies: Law, Policy, and Ethics

May 21, Phoenix, AZ



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Outline

- What tDCS is all about
- Getting at public perceptions
- The main finding
- Why this is important for tDCS governance

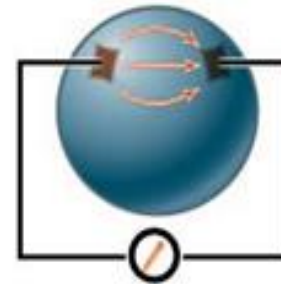


What is tDCS?

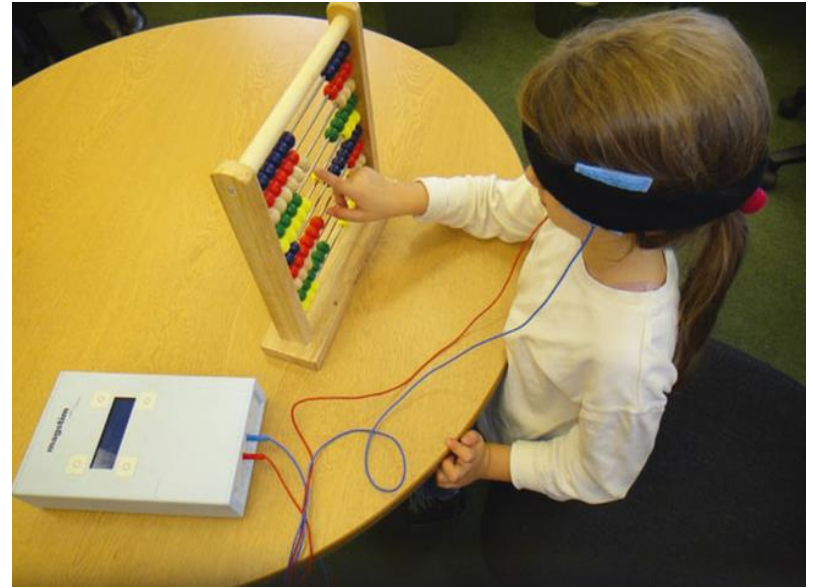
Transcranial Direct Current Stimulation



DC current applied via pair of electrodes; current induced in conductor



Uses of tDCS



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Enthusiasm with restraint

Effects dependent on:

- polarity, area stimulated, intensity/duration of the stimulation
- The effects can be long lasting
- Some effort is still needed

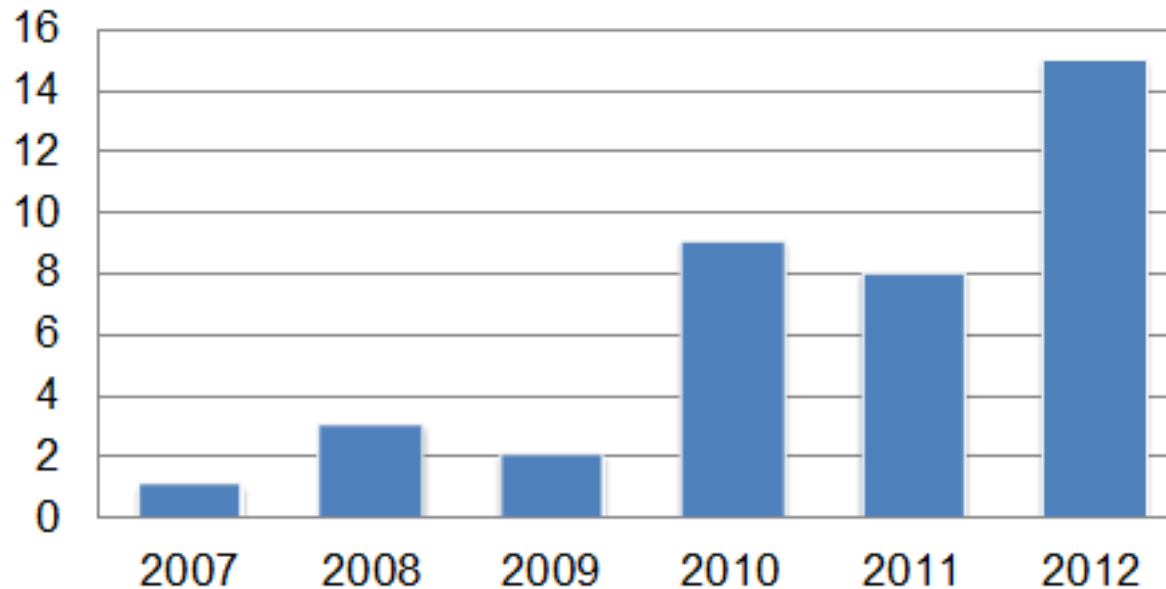


tDCS and the public

**Number of printed media mentioning
tDCS**

articles =13

comments =248



Total=38



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tDCS and the public

Subjects addressed within tDCS online public comments

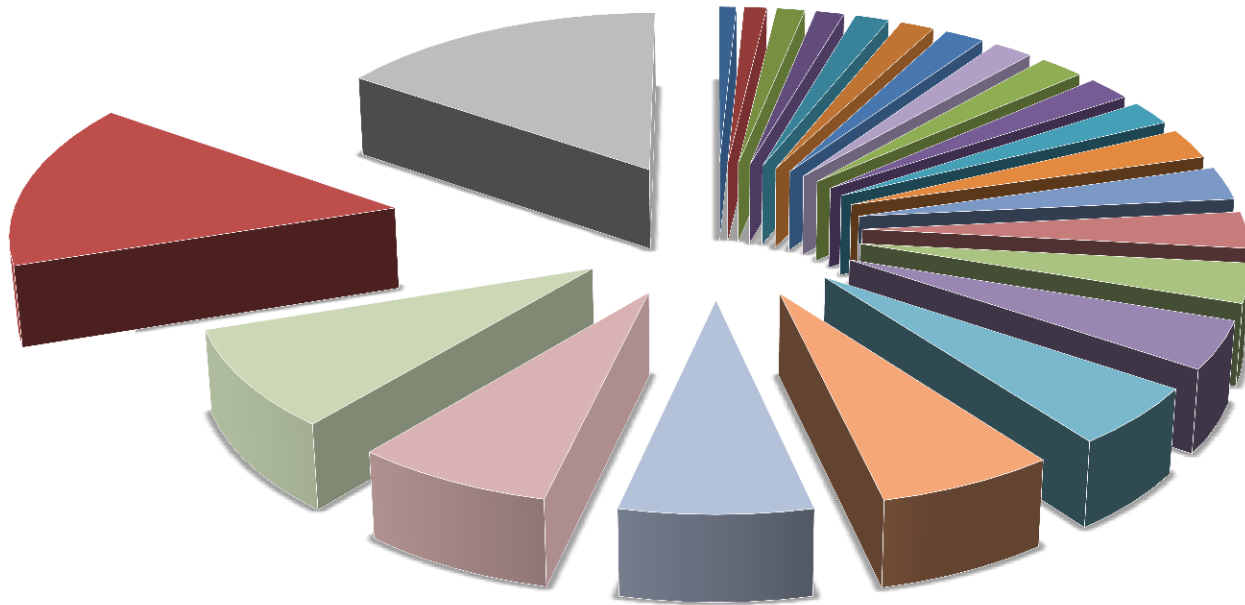
| | |
|---|--------|
| Potential applied contexts (non-therapeutic) | 11.3% |
| Potential benefits & risks | 16.94% |
| Technology Issues | 49.6% |
| ESPI (Ethical, Social, & Policy Implications) | 22.2% |
| Personal position | 51.21% |



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Emerging themes



Misunderstanding (15%)



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Public (mis)understanding: tDCS

“THIS IS CALLED "ECT", my mother had it & its not funny”

“ECT for the masses, the world has gone totally mad!”



Misidentification



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Misidentification

“Well, electrical stimulation sure didn't make Frankenstein any smarter”



THE
FRANKENSTEIN
BICENTENNIAL
PROJECT

1818 - 2018



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Technical Misinterpretation

“If 9v volts speeds up learning wonder what 12v 18 or 240v will do, turn you into einstein?”



=

SMARTER



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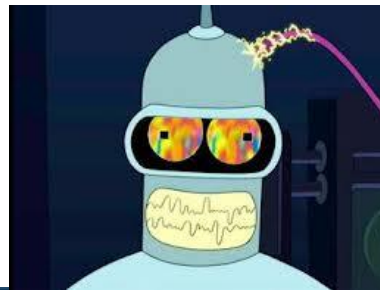
tDCS in the media

Brain zappers: How a blast of electricity can make you better or worse at maths (and the results last six months)

By FIONA MACRAE and RYAN KISIEL
UPDATED: 09:33 GMT, 5 November 2010

MailOnline

Can Electric Shocks To The Brain Improve Math Skills?



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tDCS in the media

Spark of Genius

A new technology promises to supercharge your brain with electricity.
Is it too good to be true?

By [Will Oremus](#) | Posted Monday, April 1, 2013, at 2:30 PM

Slate



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Why understanding matters

Why it matters?

- Progress in science can be put on the line
- Public willingness to negotiate
- Uncritical positions in the debate



Why understanding matters

Ill-informed consumer choices

- DIY tDCS



I Zapped My Brian With tDCS and LIVED!

by anthonymlee

10,398 views

- Commercialization



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Limited US availability.
Maximum 2 headsets per order.

\$249 **Buy Now**

+ \$10 shipping. UK orders £179.

Orders ship July 2013.
First come, first served.



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Conclusion

- Early warning signals
- Stimulate the conversation
- Promote its safe and responsible use outside the clinical setting



Thank you



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