



Australian Government
Australian Research Council



OzGrav

ARC Centre of Excellence for Gravitational Wave Discovery

Communicating Science Through Writing

Jackie Bondell, M.S., NBCT

EPO Coordinator, OzGrav

@ARC_OzGrav





*If you can't explain it simply,
you don't understand it well enough.*

Albert EINSTEIN

Importance of Writing about Science for General Audiences

Benefits for the Audience

- Learning new content
- Being part a learned population
- Understanding the role of science in their own lives

Benefits for the Writer

- Examining and refining their own understanding
- Communicating important scientific ideas to non scientists
- Using their personal strengths to grow as a communicator



Tip 1: Be careful with jargon!

- ‘Articles neaten up the messy process of science, presenting ideas, evidence, and reasoning in a way that’s easy to understand’

— www.understandingscience.org

Activity 1 (from AusSMC): ‘Cut the Crap’ and ‘Embrace the Active Voice’

Activity 2: Ten Hundred Most Common Words



'Cut the Crap' and 'Embrace the Active Voice'

Complete the worksheet exercises

'Kangaroos have large, powerful hind legs, large feet adapted for leaping, a long muscular tail for balance, and a small head. Like most marsupials, female kangaroos have a pouch called a marsupium in which joeys complete postnatal development.

The large kangaroos have adapted much better than the smaller macropods to land clearing for pastoral agriculture and habitat changes brought to the Australian landscape by humans. Many of the smaller species are rare and endangered, while kangaroos are relatively plentiful.'

Ten Hundred Most Common Words

- Pick a principle / law
- Write a three sentence description – explain the principle and its importance
- Focus on no jargon!
- Edit until it only contains the allowed words

TOPICS:

Kepler's Laws (Any)

Newton's Law of Gravitation

Anything Einsteinian

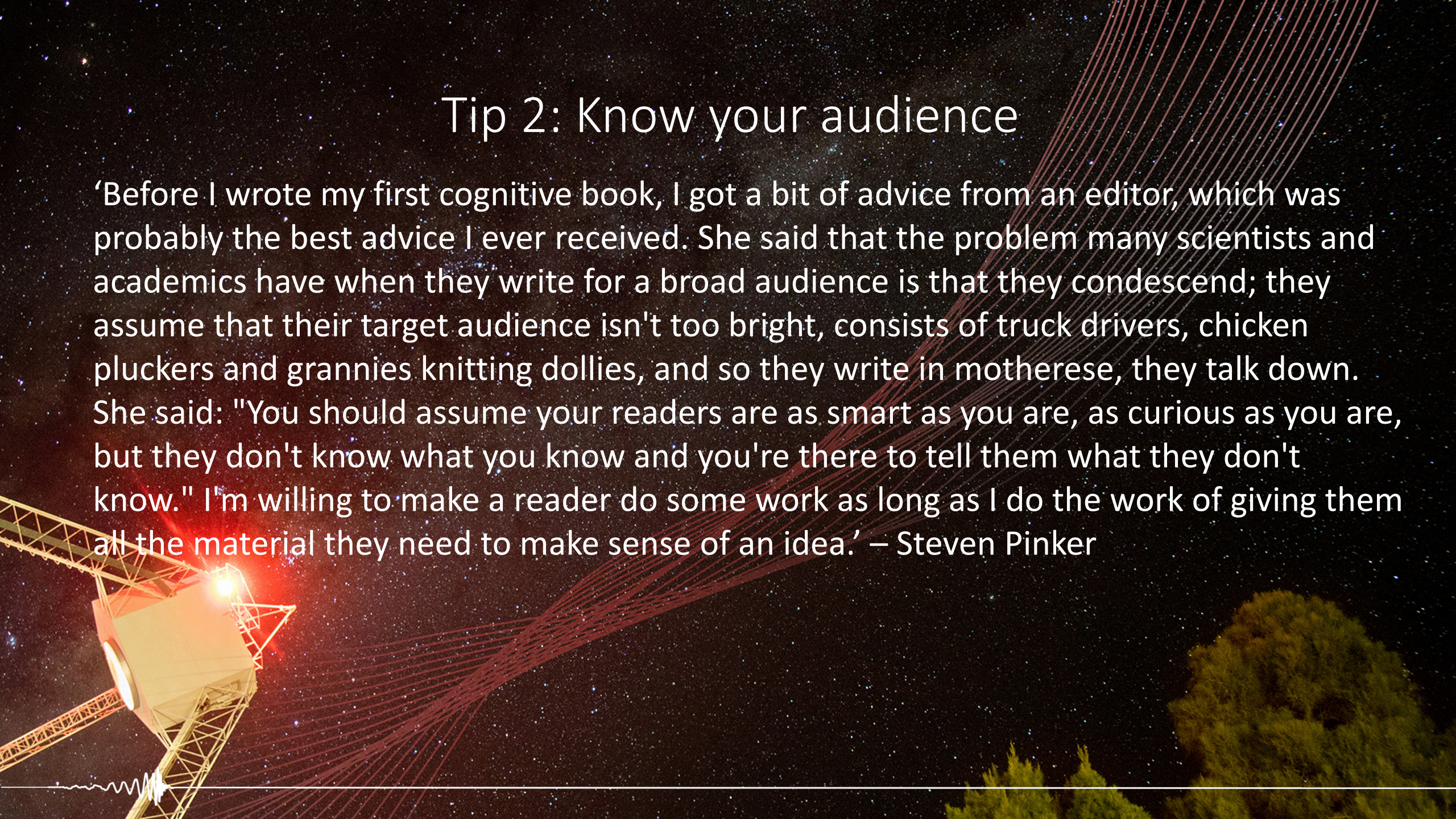
Gravitational Waves

Conservation law (any)



Tip 2: Know your audience

‘Before I wrote my first cognitive book, I got a bit of advice from an editor, which was probably the best advice I ever received. She said that the problem many scientists and academics have when they write for a broad audience is that they condescend; they assume that their target audience isn't too bright, consists of truck drivers, chicken pluckers and grannies knitting dollies, and so they write in motherese, they talk down. She said: "You should assume your readers are as smart as you are, as curious as you are, but they don't know what you know and you're there to tell them what they don't know." I'm willing to make a reader do some work as long as I do the work of giving them all the material they need to make sense of an idea.’ – Steven Pinker



Tip 3: Use Analogies Wisely

Analogies are often used in science, but students may not appreciate their significance, and so the analogies can be misunderstood or discounted. –

www.physiology.org

Good analogies: simple, easy to remember, and based on familiar analog concepts, chosen and explained carefully and acknowledging limitations

Water, pipe → blood, blood vessel

Trampoline, bowling ball → spacetime, black hole

Activity: Share and evaluate your favourite go-to analogy

Tip 4: Don't fear creative writing

Benefits of creative science writing

- Embracing your creative side – music, poetry, story-telling, art, comics
- Reaching an audience you may not otherwise reach (content)
- Reaching a broader audience – accessibility of art and stories

Activity: Science Haikus –
topics from a hat!

(Reminder: 5 – 7 – 5)



Especially for Children

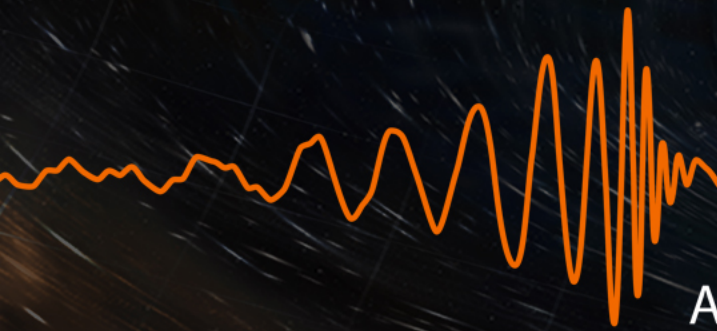
From Emily Sohn with Science News for Kids:

- Keep words short, sentences short, and paragraphs short.
- Appeal to the senses, especially in your lede. Find something about your topic that kids can picture, smell, taste, hear, or touch.
- Don't try to do too much. Stick to just one or two main ideas.
- Some guiding principles: Science is new. Science is everywhere. Science is fun. Science is adventure.
- You can make yourself a character in your story. Kids like having someone to identify with.
- Don't! overuse! Exclamation! points!



Final Thoughts...

- Focus on your message. Don't try to say too much. Ask yourself what you want the reader to take away.
- Use analogies wisely and don't rely on scientific jargon
- Don't talk down to your audience – they are reading your piece because they are interested and will work a little to understand
- Get feedback from your peers, your friends, your family, etc. but remain true to your voice
- Be open to alternatives to writing... pictures, graphics, etc. can be helpful



OzGrav

ARC Centre of Excellence for Gravitational Wave Discovery



Australian Government
Australian Research Council