

Reducing the Risk of Electrical Contact

The difference between going home and not!



NERC
NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION



Human Performance Conference

Monika Bay, BGE

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An Exelon Company

Electrical contact is a very big deal

3rd highest
cause of death
in US
construction
industry

81 electrical contact
fatalities in 2015...

26 of those were
power-line workers...

That's one line-worker
dead every 2 weeks...



It's trying to kill you!

500 mA will light a 60 watt bulb!



1.5 A	Tissues and organs burn
200 – 500 mA	Heart stops
100 – 200 mA	Heart fibrillation
30 – 75 mA	Can't breathe
10 – 40 mA	Can't let go
3 – 10 mA	Muscles contract painfully
0.5 – 3 mA	Tingling sensation

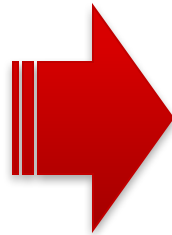
What gets in the way?

**Our brains are
designed to take
subconscious mental
short-cuts**



How we assess a situation

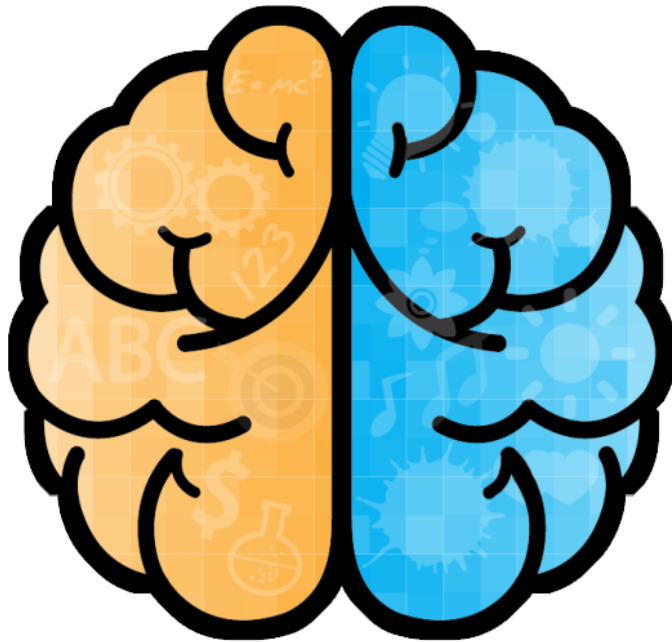
Our System 1 processes very quickly



We create mental models



What are mental models?

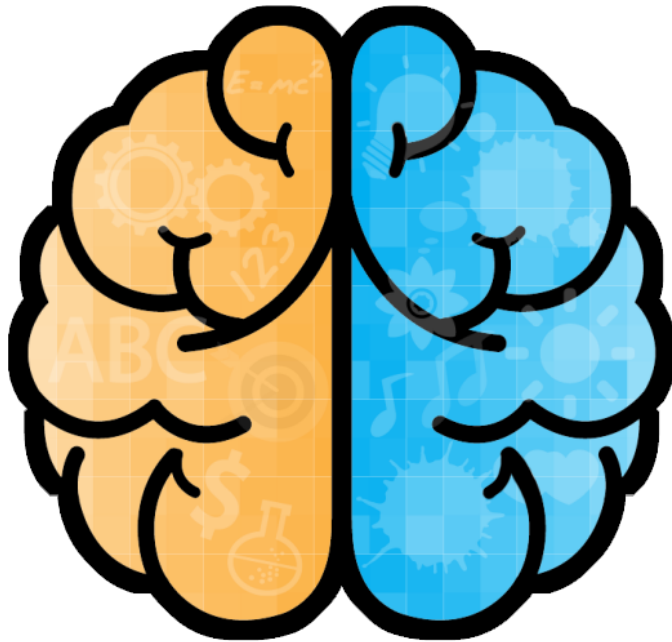


Representations of the world around us

Built subconsciously largely through our intuition, knowledge and experience

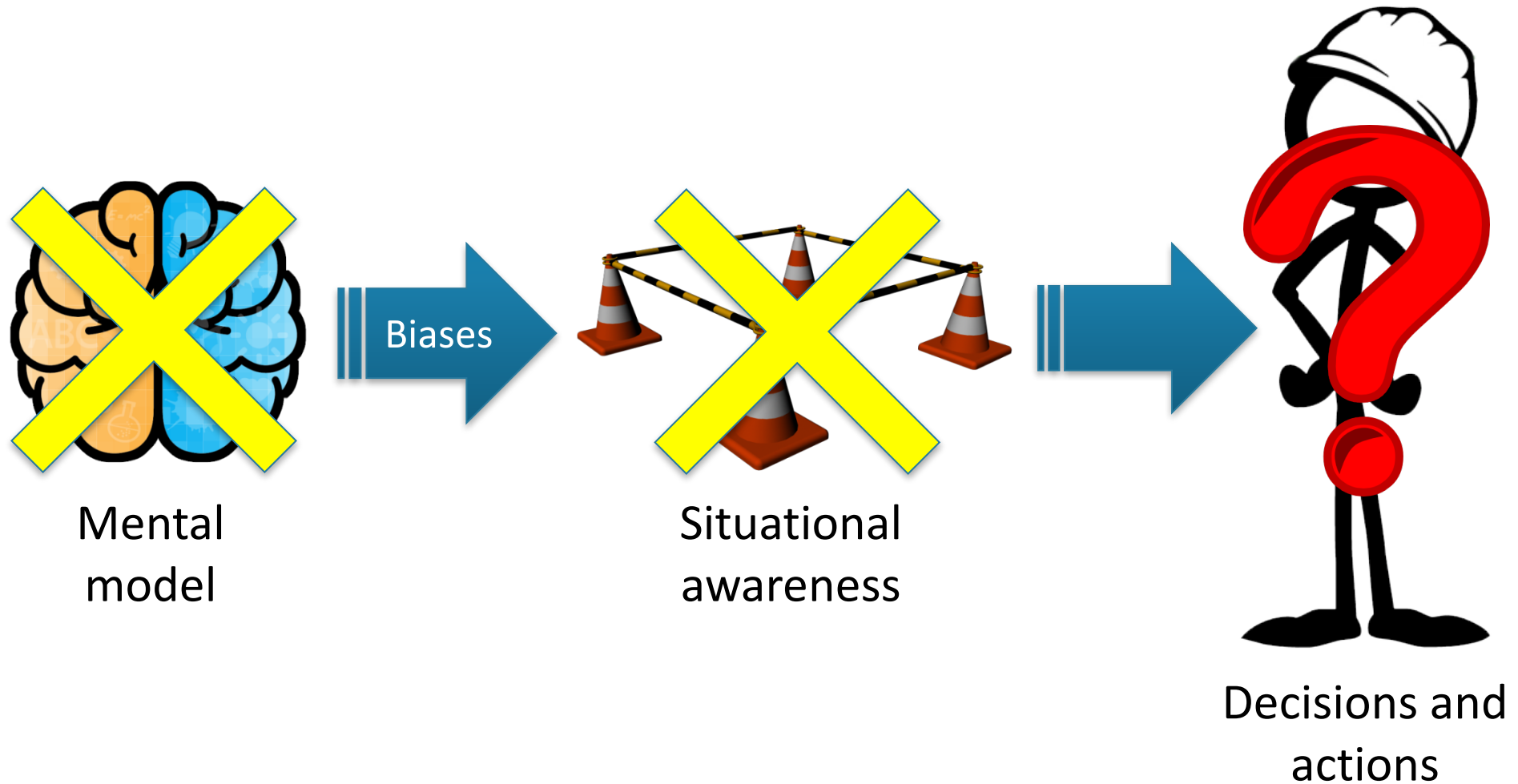
Include only some information extracted from the environment

It can be a big problem!

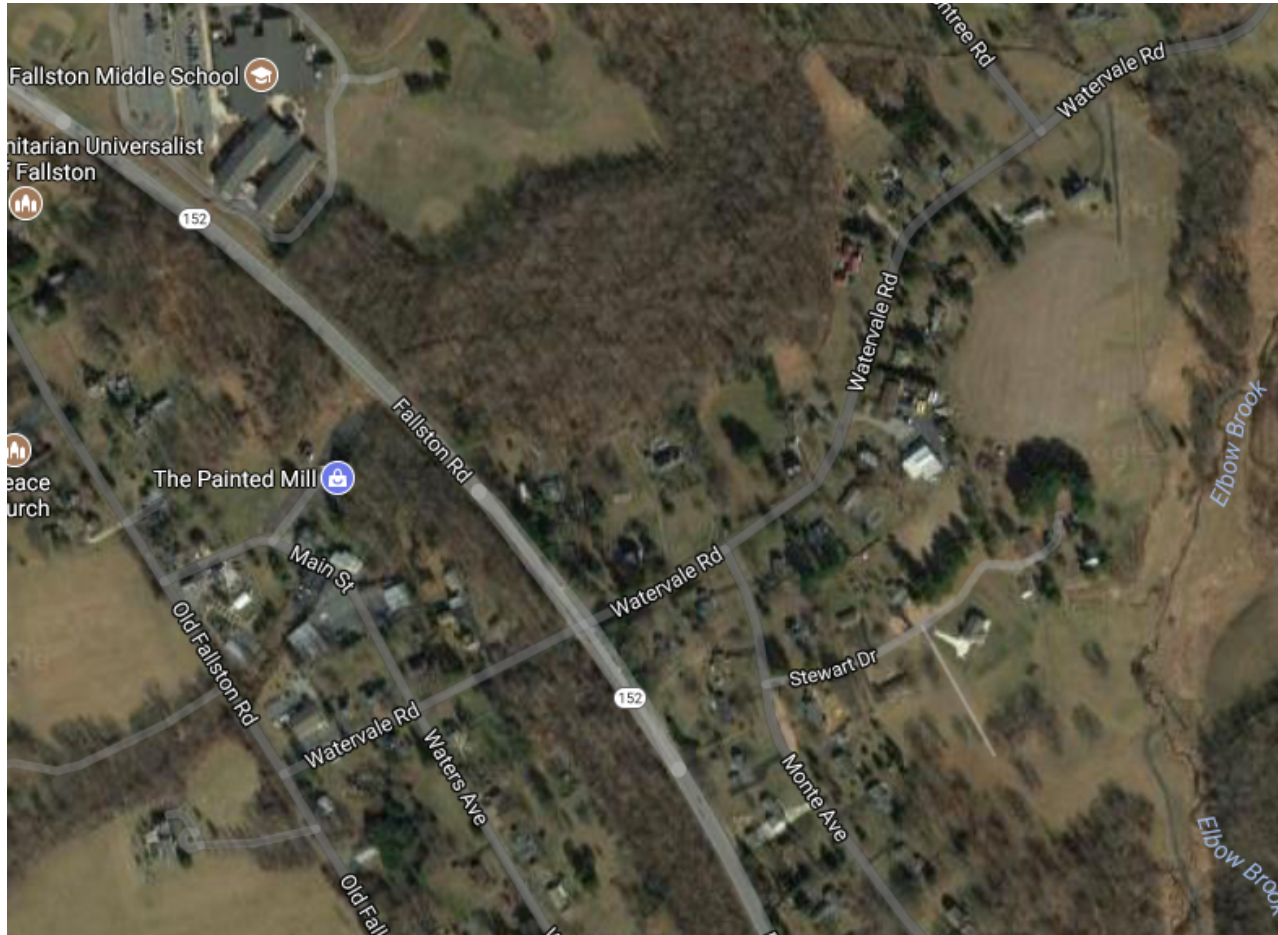


**Mental models
can be right...
kinda right...
or WRONG!**

If you're mental model is wrong...



A routine outage call...



What we learned about electrical contact

Highest probability of electrical contact occurs when we have the **wrong mental model**

...because that wrong mental model ultimately influences our decisions and behaviors

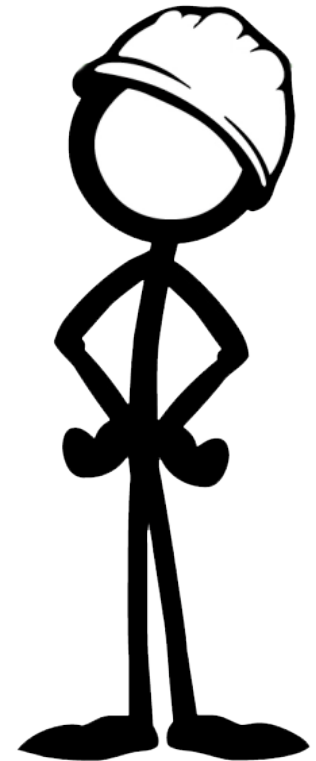
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**more likely
to result in
electrical
contact**

Solution: *Ensure you have an accurate mental model of the energy source **BEFORE** you conduct the job brief*

- **Check yourself...
before you wreck yourself!**

- **Challenge it** - assume your first impressions are wrong
- **Critically think it** - make sure your System 2 critical thinking is in control
- **Cross check it** - have someone peer check your assumptions and conclusions



Questions

