# HEURISTICS AND HUNCHES IN EXPLORATORY TESTING

@alex_schl

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INDIVIDUELLE SOFTWARE

# INTRODUCTION

- I am a tester, a manager
- I am an explorer!
  - Of countries, languages, people, systems
  - Of my own panic zone…
- I work for BREDEX GmbH and have an awesome team
- How did I get here?

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# AGENDA

- A couple of stories and my aims
- Let’s talk about heuristics
- Working on identifying heuristics

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BRAIN RULES
More ideas
Do one thing at a time
The brain is a sequential processor, unable
two things at the same time. Businesses and
tasking, but research clearly shows that it reduces
increases mistakes. Try creating an interruption-free zone
day—turn off your email, phone, and social-media sites—and see
whether you get more done. If you have trouble untangling yourself
download software that blocks your access to certain websites
amount of time that you specify.
Divide presentations into 10-minute segments
Remember my students who said they got
utes into a mediocre lecture? The 10-minute
have known for many years, provides a guide
tions people can pay attention to. Here's the
giving a lecture, for which I was named the Hoechst
Teacher of the Year (awarded at one of the largest
psychiatry).
I decided that every lecture I'd ever give would be
segments, and that each segment would last only
segment would cover a single core concept—always
general, and always explainable in one minute. The
meaning before detail, and the brain likes hierarchy.
general concepts naturally leads to explaining
archical fashion. Give the general idea first, before
and you will see a 40 percent improvement in understanding.
Each class was 50 minutes, so I could easily burn through five
large concepts in a single period. I would use the other nine minutes
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6. ATTENTION
is the segment to provide a detailed description of that single
concept. The trick was to ensure that each detail could be easily
back to the general concept with minimal intellectual effort.
pause to explicitly explain the link. This is like
between stuffings. In addition to walking
the beginning of the class, I sprinkled lib-
throughout the lecture a plan of
eral repetitions of "where we are"
This
from trying to multitask. If the
without telling the audience where
the presentation, the audience is
to the instructor and attempt to
of what the instructor is saying.
of trying to drive while talking on
ble to pay attention to ANY two
ers a series of millisecond delays
After 10 minutes had elapsed, I had
Why did I construct my lec-
had only about 600 seconds to
The next hour would be useless. And I
something after the 601st second to "buy"
another 10 minutes
hook
seconds, the audience's attention is get-
to near zero. If something isn't done quickly,
and end up in successively losing bouts of an effort to
students
stay with
they need? Not more information of the same
type. N
irrelevant cue that breaks them from
thought, making the information stream seem dis-
jointed, unorganized, and patronizing. They need something so com-
pelling that they break through the 10-minute barrier—something
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# AIMS

- To be able to teach exploratory testing better
- To be able to do exploratory testing better
- And through that, gain appreciation and understanding for it

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# LOOSELY HELD STRONG OPINIONS

- Exploratory Testing is not clicking around
- *Everyone* is a natural explorer; everyone can improve
- Testing is not the only thing that is exploratory
- Exploratory testing is my weapon of choice
  - (I'd go as far as to say that it's a true *best practice*)
- Exploring and agile are based on the same logical and useful premises
- Exploratory testing is going to be just as / more important in the future

**Call to action**: We need to reduce the amount of "intuition and experience" and increase the amount of **explanations** and **teachable** practices

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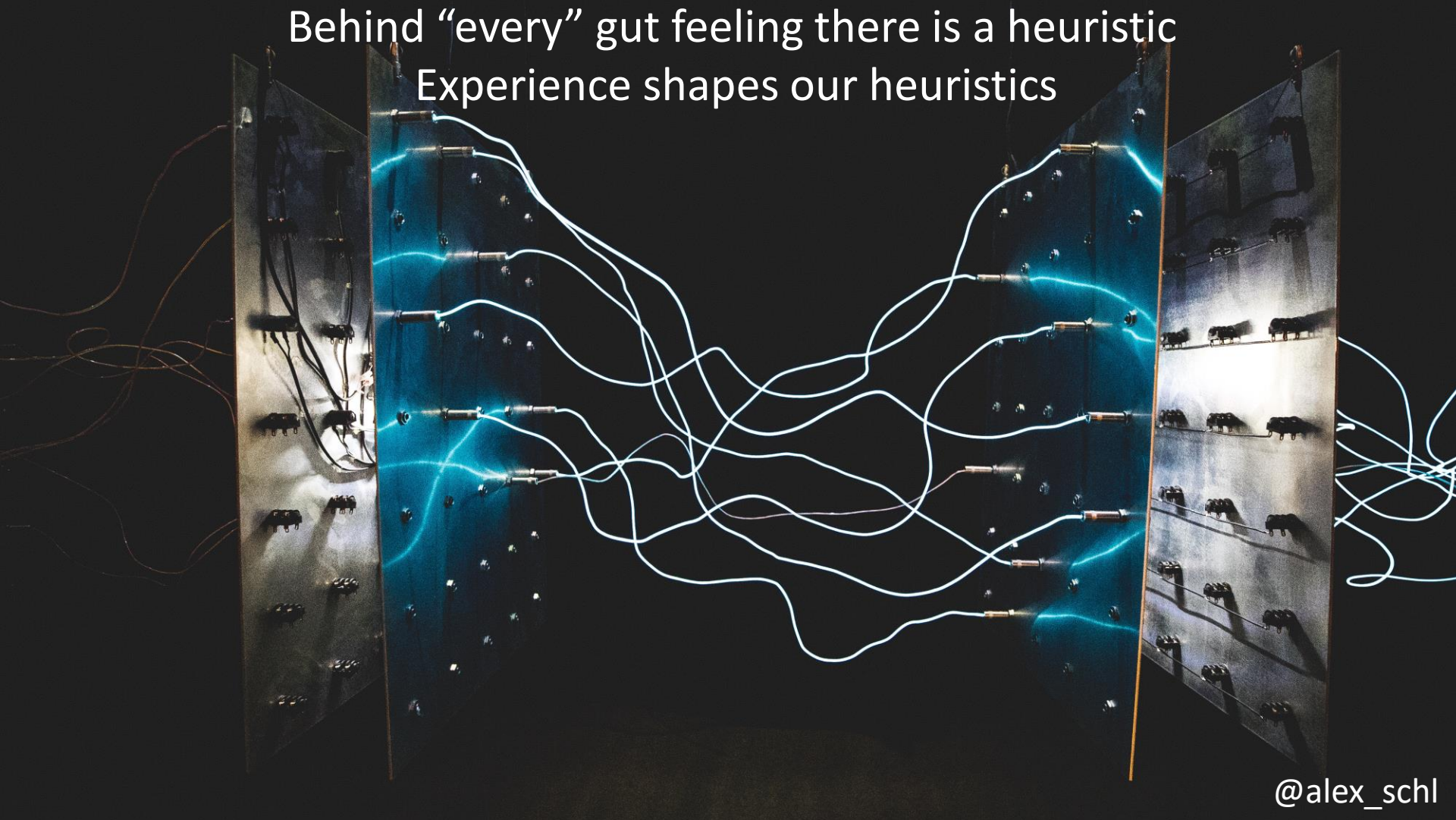
Behind “every” gut feeling there is a heuristic

Experience shapes our heuristics



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# HEURISTICS

- Rule of thumb
- "a simple procedure that helps find adequate, though often imperfect, answers to difficult questions[1]"
- Some are chosen (strategic procedures, system 2)
- Some are intuition (system 1)
  - Behind these there are also procedures that have become automatic
  - These can easily become biases

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1 Thinking Fast and Slow, Kahnemann: p98

# CALL TO ACTION

Let’s get better at recognising what leads to our intuition and describing it
so that we can use it more strategically
(and teach it to others)

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The value of learning more about heuristics is in
discovering how other people think,
and becoming capable of describing our own thinking.


Katrina Clokie: https://katrinatester.blogspot.com/2014/09/heuristics-and-oracles.html

# HEURISTICS IN TESTING

- To widen our horizons (give us new ideas)
- To remind us of things we might forget

- Well-known examples:
  - CRUD
  - Elisabeth Hendrickson's Cheat Sheet
  - FEW HICCUPS (consistency heuristics) (Bolton&Bach)
  - FCC CUTS VIDS (touring heuristics) (Michael Kelly)
  - RCRCRC (regression testing heuristics) (Karen N Johnson)

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# WHAT I'M INTERESTED IN

- *Microheuristics*

- "…whoever tests needs to be **learning**. Learning needs to **change** what you are doing[1]."

- ***How*** **are we using what we've learned to decide on the next step / experiment?**

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1 Maaret Pyhäjärvi

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# POKE IT TILL IT POPS (THE PIMPLE HEURISTIC)

If something seems problematic / acts oddly, interact with it directly and indirectly to evaluate it more closely, in different situations.

That can be editing, searching for, redoing steps.

Keep poking until something comes out, or you're satisfied it won't.

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# IFS ARE IFFY

Any time we notice something being dependent on something else, or we hear the word *if* in a description of a function/feature - our next steps can be to explore the conditions and consequences.

The more *ifs* we hear, the more likely we are to find a problem.

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# YELLOW IS INTERESTING

As soon as a status is more than binary, there is room for more error.

Explore the factors leading to and from yellow.

This is a specific example of the *ifs are iffy* heuristic.

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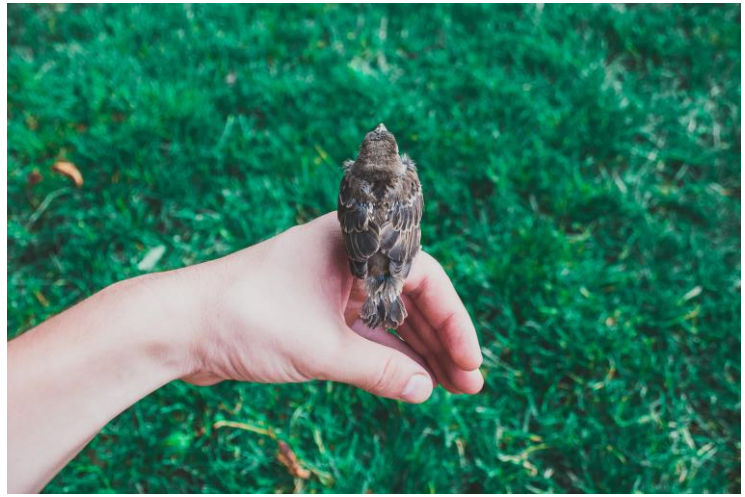
# IF YOU CAN TOUCH IT, IT'S REAL

Seeing is not believing! If something has been created or appears (manually or automatically), touch it to see whether it is really there.

Touching can be: selecting, searching for, opening, refreshing, using another client.

Related: if it shouldn't be there, touch it!



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# A ROSE BY ANY OTHER NAME

How elements are named can lead us to assumptions about error likelihood.

If the “same” thing is named differently: rushed team, different developers, lack of domain understanding, no time for testing?

Explore any differences/interplay between the functions with different names for the same thing.

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# YOU CAN NEVER GO BACK

Undo and redo operations are tricky to program, I've been told. Moving back and forth or navigating between steps can lead to data loss, data being falsely saved…
This gets even more interesting in browsers.

Look for ways or options you can retrace steps and do them. Try to go back in different ways.

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# BREAK THE CHAIN

Software is good at modelling and displaying relations. What do we do with relations after deletion?

This can affect referenced items, used items, users, listed items.

After deletion, check the effects. Search, touch, reassign, …

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# IDENTIFYING HEURISTICS

- Do testopsies
- Observe
- Ask “why did you do that” (“just because” doesn’t count)
- Use your knowledge to identify candidates
- Narrate your own testing

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https://www.improveqs.nl/media/1382/testopsy-etc-2017-huib-schoots.pdf

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# IT ALL GETS A BIT META

- Testopsies and narrating are exhausting!
  - Testing and analysing how you test simultaneously
- These are my heuristics for identifying heuristics…

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https://www.artgallery.nsw.gov.au/blog/posts/a-painting-of-a-painter-painting-a-painting/


Being explicit makes us realise
our power and strength
It is amazing what our brains
are doing when we explore
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# MY NEXT STEPS…

- Discover and describe more heuristics
- Document them…
- Find out more about cognitive bias in this context

- … keep exploring

- Keep teaching and sharing
  - alex@bredex.de

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