Fun with Structural Ambiguity
More Ambiguity: Examples of Structural Ambiguity

- STUD TIRES OUT
- BRITISH LEFT WAFFLES ON FALKLAND ISLANDS
- LUNG CANCER IN WOMEN MUSHROOMS
- SQUAD HELPS DOG BITE VICTIM
- ENRAGED COW INJURES FARMER WITH AX
- JUVENILE COURT TO TRY SHOOTING DEFENDANT
- STOLEN PAINTING FOUND BY TREE
- TWO SISTERS REUNITED AFTER 18 YEARS IN CHECKOUT COUNTER
- KILLER SENTENCED TO DIE FOR SECOND TIME IN 10 YEARS
Examples from ads:

• *Take your mother-in-law out back and shoot her.* (Kodak)
• *Are you up in the air about your future?* (Air Force)
• *Most parents and doctors trust Tylenol.*
• *Come meet our new French pastry chef.*
Some ambiguities are inadvertent!

- “No one does what we do well”
- “No public restrooms
  - No Shoes
  - No Shirt
  - No Service”
Processing of lexical ambiguity:

- incremental
- associative
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- incremental
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Is processing of structural ambiguities similar?
John put the apple in the bowl...

A.

S
   NP
      John
   VP
      V
         put
      NP
         Det
            N'
              N
                PP
                      in the bowl

B.

S
   NP
      John
   VP
      V'
         PP
                      in the bowl
      NP
         put
            the apple

Put the apple on the towel into the box.
“Garden Path” sentences:

• Sentences where initially, the wrong structure and interpretation is assigned to a temporary ambiguity - at some point, an error signal is detected, resulting in processing breakdown or backtracking
The ----- ----- ---- --- ---- ---- --- ----- - ---.

The ----- ----- ---- --- ---- ---- ---- ---- - ---.
--- horse ----- ---- --- ---- ---- --- ----- - ---.

--- horse ----- ---- --- ---- ---- --- ----- - ---.
----- raced ---- --- ---- ---- --- ----- - ---.
--- ----- ----- ---- the ---- ---- --- ----- - ---.
--- ----- ----- ---- --- barn ---- --- ----- - ---.

--- ----- ----- ---- --- barn ---- --- ----- - ---.
broke - ---.
--- ----- ---- --- ---- --- ---- a ---.
--- ----- ----- ---- --- ---- ---- --- ----- - leg.
The ----- ---- --- ----- ---- --- ---- ---- --- ----- - ---.

The ----- ---- --- ----- ---- --- ---- ---- --- ----- - ---.
--- horse ---- --- ----- ---- --- ---- ---- --- ----- - ---.
--- ----- ---- was ----- ---- --- ---- ---- --- ----- - ---.
raced
--- ----- ---- --- ----- past --- ---- ---- --- ----- - ---.
--- ----- ---- --- ----- ---- --- barn ---- --- ----- - ---.
--- ----- ---- --- ----- ---- --- ---- fell --- ----- - ---.
broke
The horse raced past the barn fell and broke a leg.

The horse that was raced past the barn fell and broke a leg.
The --------- -------- --- ------ ----- --- ------ --- ---- ------.
--- -------- believed --- ------ ----- --- ------ --- ---- ------.
--- -------- --- ------ about --- ------ --- ---- ------.
--- -------- --- ------ --- attack --- --- -------.
had
--- --------- -------- --- ------ ----- --- ------ --- been ------.
--- --------- -------- --- ------ ----- --- ------ --- ---- forged.
The President believed the report about the attack had been forged.

The President believed that the report about the attack had been forged.
The ---- ------ --- ------ ---- - ---- --- ------- ------.

The ---- ------ --- ------ ---- - ---- --- ------- ------.
--- gang ------ --- --- ------ ---- - ---- --- ------- ------.
--- ---- leader --- --- ------ ---- - ---- --- ------- ------.
hit
--- ---- ------ --- the ------ ---- - ---- --- ------- ------.

--- ---- ------ --- the ------ ---- - ---- --- ------- ------.
--- ---- ------ --- --- lawyer ---- - ---- --- ------- ------.
--- --- ------ --- --- ------ ---- - ---- and ------- ------.
laughed
loudly.
The gang leader hit the lawyer with a **wart** and laughed loudly.

The gang leader hit the lawyer with a **stick** and laughed loudly.
More “garden path” sentences

After the police stopped the car drove off at top speed.

The therapist told the woman that he was having trouble with about the new medication.

What did John read the newspaper to find out about?
The President believed the report about the attack *had been forged*.

The President believed that the report about the attack *had been forged*. 
The President believed the report about the attack had been forged.

The President *sent* the report
The President *concluded* the report
The President
believed
the report
about the attack
had been forged
The President believed the report about the attack had been forged.
The President
sent
believed
the report
about the attack
had been forged.
Observations about structural ambiguity:

1. Involve incremental interpretation

2. Meanings other than the ultimate meaning may be accessed along the way
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   Implications:

1. Can advertising take advantage of these temporarily encoded meanings?

2. Do processes underlying ambiguity resolution result in greater cognitive engagement?
No Road Works in London
No Road Works in London

-- They do in Miltonkeynes
Observations about structural ambiguity:

Both lexical and structural ambiguity generally result in longer processing times.

Incongruity “garden path” effects can be played with for attention-grabbing purposes.