Focus and Flow in Speech UIs

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Focus and flow

https://www.youtube.com/watch?v=wGocXVPiJ20

Fit human needs
In complex environments
There’s no end to what people can say.

http://www.layoutsparks.com/pictures/infinite-star-0
And there’s all kinds of talk we do...

Between friends

Task-oriented

With a computer
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- Present ideas and findings from Wallace Chafe’s *Discourse, Consciousness, and Time; The Flow and Displacement of Conscious Experience in Speaking and Writing* (1994).
- Discuss how they relate to design
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Take a quick look at:

- Consciousness
- Activation states
- Speakers and listeners
- Intonation units
  - Types
  - Sizes
- The one new idea constraint
Consciousness can be...

Focused

Unattended to

Peripheral

http://technologyinthespottlite.blogspot.com/
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Consciousness can be

- Focused
  - Only a limited amount of information can be focused on at one time
- Peripheral
  - This is the context that the focus is in
  - It gives clues to where the focus will go next
- Unattended to
  - This is the huge store of information not attended to at the moment
Thought-language continuum

Active

Inactive

Semiactive

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And ideas in thought-language lie on a continuum with (at least) three states of activation

- Active
- Semiactive
- Inactive
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Speakers and listeners

- Speakers keep in mind their own activation states
- They also try to bring about parallel activation states in the minds of their listeners
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Intonation units

- Segmentation of spoken language based on prosodic cues, including
  - Pauses or breaks
  - Accelerating then decelerating speech
  - Changes in pitch
  - Final pitch contours
  - Changes in voice quality
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Chafe’s hypothesis

– When information is active in the speaker’s mind, it is expressed in an intonation unit.
– The speaker intends for information in the intonation unit to become active in the listener’s mind as well.
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Three types of intonation units

- Fragmentary
- Substantive
- Regulatory
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Size of intonation units

– Fragmentary
  – Can be ignored
– Substantive
  – Mean length of 4.84 words per unit
  – Last between 1-2 seconds
– Regulatory
  – Mean length of 1.36 words per unit
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Types of intonation units, an exercise

Three speakers: A, B, and C

1 A ... Well,
2 A isn't she healthy?
3 B ... Mhm,
4 A ... I mean she
5 A I know she has
6 C More or less.
7 A ... She has [something with her] gallbladder,
8 B [gallbladder and, ]
9 B ... heart trouble and,
10 B [back problems.]
11 A [She has heart ] trouble,
12 C ... Her she has an enlarged heart.
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The one new idea constraint

- An intonation unit can contain no more than one new idea.
- That is, if there is a new idea, only one can be expressed.
- This is most applicable to substantive intonation units.
Kinds of talk revisited

Between friends

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Peter Stahl (@pstahl)

https://www.box.com/s/ms8ssh4nc3zl6mx0n38w
Focus and flow outside speech

Greg Nudelman (@designcaffeine) [http://www.designcaffeine.com](http://www.designcaffeine.com)


[]http://www.androiddesignbook.com[(111,758,500,942)]
Focus and flow outside speech


Focus and flow outside speech

Luke Wroblewski

…people would get a blank version of a listing page and use that to fill in information about what they wanted to sell….No matter how many times I saw this idea tried, however, it never worked as well as a standard input form. As the image below illustrates, a sequential form walks people step by step through the information they need to provide in order to create a listing on eBay.

Nobody just talks anymore

Multimodality, environment, and context

Zit's cartoon found on http://languagelog.ldc.upenn.edu/nll/?p=4522
Thank you

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