

Reading is Unnatural

Reading is Unnatural

As before the majority of notes here are based on the book *Designing with the mind in mind*

<http://www.spreader.com/> has some free tools to allow you to experience learning to speed read.

Reading is Unnatural

- We're wired for language but not for reading
 - Speaking and understanding spoken language is a natural ability
 - Reading and understanding written language is a learned ability
 - A lot of people struggle to read or are illiterate
 - By contrast there are very few people in the world who cannot understand spoken language

Reading is Unnatural

- Learning to read involves a lot of training
 - Recognising basic visual features: lines contours, shapes
 - Recognising patterns from those features to form letters numbers etc
 - Recognising patterns of characters to form morphemes (small packets of meaning)
 - Recognising words etc etc

This is what it feels like to be illiterate

- Top line is Amharic text (Ethiopia)
- The bottom line is Tibetan text

(A)

አዲስ አበባ ሰኔ 15/93/ኢ.ዜ.አ/ -- ኢ.ጣሊያ ለኢትዮጵያ የ375 ሚሊዮን
ዶላር ዕዳ ስረዛ ለማድረግ መወሰኗን አዲስ አበባ የሚገኘው የአገሪቱ ኤምባሲ

(B)

དགེ་འདུན་དམ་པ་ཚོས་ལྷན་ཐོས་བའི་བཀྲ་ཤིས་ལྷན། །མི་དང་ལྷ་དང་ལྷ་མ་ཡིན་གྱི་མཆོད་བའི་གནས།།
ཚོགས་གྱི་མཆོག་རབ་ངོ་ཚ་ཤེས་དང་དབལ་གྱི་གཞི། །དེ་ནི་འཇིག་རྟེན་དགེ་བའི་བཀྲ་ཤིས་གསུམ་པ་ཡིན།། ॥

Reading is unnatural

- Is reading feature driven or context driven?
 - In one respect it is feature driven
 - You look for basic shapes and try to construct letters and words from there
 - In another respect it is context driven
 - You work from whole sentences down to individual words and letters
 - The reality is that it is both

Reading is Unnatural

- “The rain in Spain falls manly on the the plain”
 - Top down recognition may not notice subtle changes in the actual text
 - Look at it a bit more closely this time
 - An “i” is missing and there is an extra “the”
 - So it is entirely possible that if you recognise the meaning of a sentence you may reconstruct the rest automatically

Reading is unnatural

- “Finished files are the result of years of scientific study combined with the experience of years”
 - How many instances of the letter f are there?
 - There is 6 not 3
 - Context driven processing may cause you to omit or skip certain words

Reading is unnatural

- Read the sentences below
 - Using top down processing you can determine the meaning of a sentence even though the letters are jumbled up
 - Or if the letters are obscured
 - Skilled readers can use both bottom up and top down approaches
 - Often is a race between the two

(A)

Mray had a ltilte lmab, its feclee was withe as sown. And ervey
wehre taht Mray wnet, the lmab was srue to go.

(B)

Twinkle, twinkle little star, how I wonder what you are.

Reading is Unnatural

- Poor information design can disrupt reading
 - Careless writing or presentation can disrupt unconscious automatic context-free reading
 - Switches to conscious context based reading
 - Consuming energy, memory
 - Decreasing speed

Reading is Unnatural

- One way that software disrupts reading is by using unfamiliar vocabulary
 - e.g. our terminology is often called “geek speak”
 - Most people consider it incomprehensible

Reading is Unnatural

- “Your session has expired, please reauthenticate”
 - From an application for use by receptionists, accountants and managers
 - They find this language difficult to understand
 - Would show if application was left idle for 15 minutes

Reading is Unnatural

- “Login again”
 - Language most users understand
 - Collapsed six words into two
 - Tells the user how to fix the problem instead of stating what the problem is

Reading is Unnatural

- Reading can be disrupted by rare or obscure words
 - Aforementioned: mentioned previously
 - Disclaim: renounce any claim or connection with
 - Heretofore: up to the present time
 - Obfuscate: make obscure, unclear

Reading is Unnatural

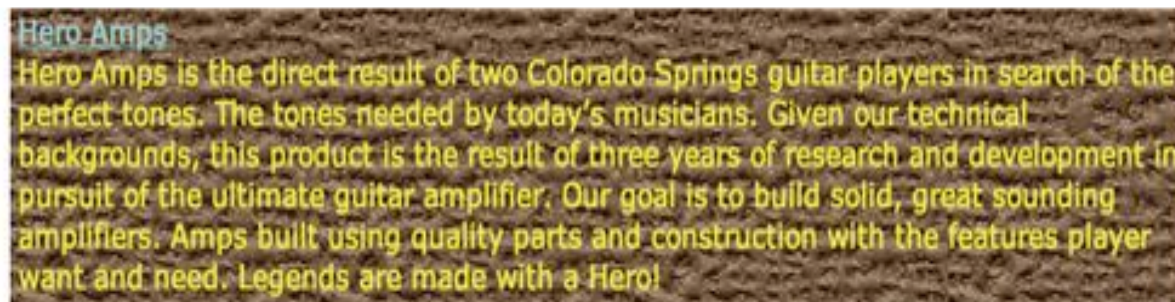
- Difficult scripts and typefaces
 - Even if vocabulary is familiar reading can be disrupted by hard to read typefaces
 - Because feature driven reading is based on recognising shapes
 - Partly the reason why all caps is a nightmare to read

Reading is Unnatural

- Tiny fonts make reading difficult
 - Difficult to distinguish letters because features are small
 - Common tactic of advertisers particularly with terms and conditions
 - Don't use tiny text in your applications,
 - Better off with no text instead

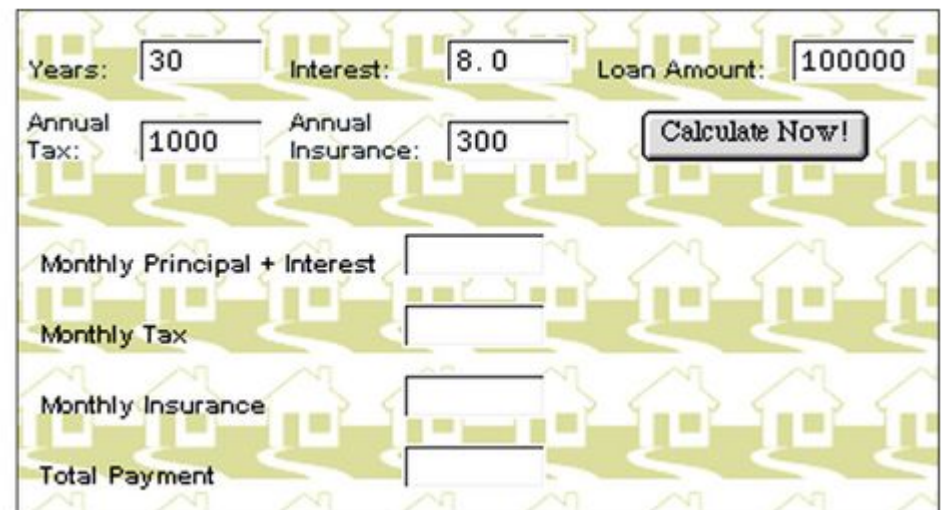
Reading is Unnatural

- Text on a noisy background disturbs feature driven reading
 - Transfers users into conscious context driven reading
 - Poor colour contrast also affects this
 - Sometimes it can be useful e.g. captchas
 - To prevent bots registering for sites etc.



Reading is Unnatural

- Text in applications should be easy to read
 - Patterned backgrounds can disrupt reading
 - Even if the patterns is subtle or light
 - General rule: text should be on a plain background
 - Much easier to read



The image shows a web form for calculating mortgage payments. The background is a repeating pattern of small, stylized house icons. The form contains the following fields and labels:

Years:	<input type="text" value="30"/>	Interest:	<input type="text" value="8.0"/>	Loan Amount:	<input type="text" value="100000"/>
Annual Tax:	<input type="text" value="1000"/>	Annual Insurance:	<input type="text" value="300"/>	<input type="button" value="Calculate Now!"/>	
Monthly Principal + Interest		<input type="text"/>			
Monthly Tax		<input type="text"/>			
Monthly Insurance		<input type="text"/>			
Total Payment		<input type="text"/>			

Reading is Unnatural

1. Enter Your Information

Monthly Income \$? Enter your financial profile along with information about the house you would like to purchase in the fields provided. A definition of each input field is accessible by clicking the corresponding Help (" ? ") button.

Price \$?

Down Payment \$?

Other Debt Payments \$?

CLEAR

2. Mortgage Loan Criteria

Front Ratio ? You may either enter the mortgage loan criteria directly or choose default values by selecting the "Conventional Loan" or "FHA Loan" buttons. Qualifying ratios will vary by lender and loan type. Check with your lender to determine the best loan for you.

Back Ratio ?

Loan/Value ?

Interest Rate ?

Term in Months ?

CONVENTIONAL LOAN

Taxes and Insurance \$?

FHA LOAN

3. Compute

COMPUTE AFFORDABILITY **COMPUTE PMI**

Reading is Unnatural

- Centered text can be very difficult to read
 - Users are trained to return to the same horizontal position after reading each line
 - Centered text changes horizontal position after each line
 - Try reading this
 - Very simple piece of text
 - That
 - Is centered.

Reading is Unnatural

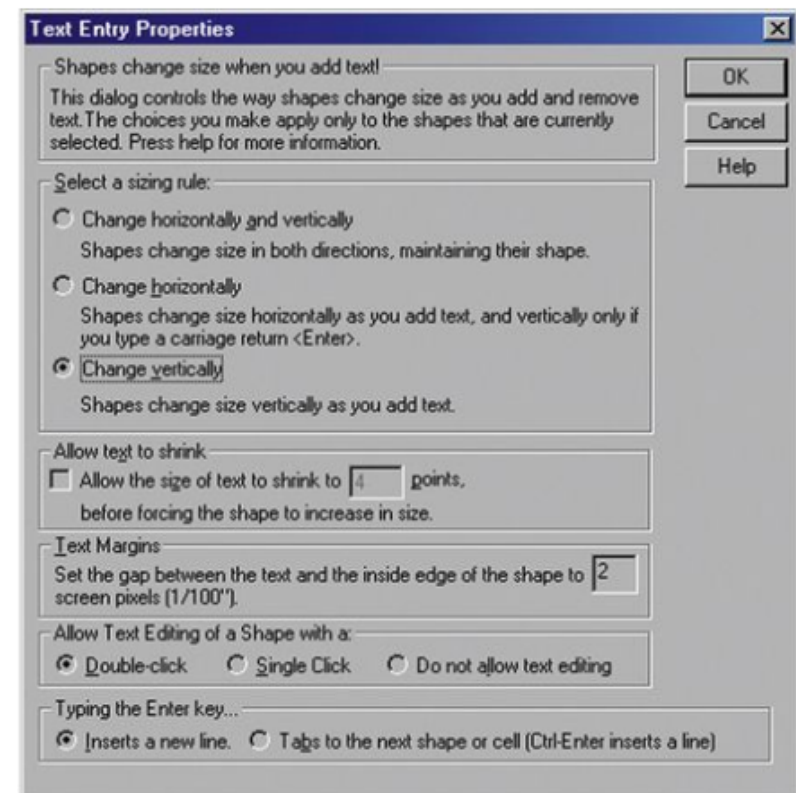


Reading is Unnatural

- Design implications: support reading don't disrupt it
 - Design your UI to support feature driven reading
 - Remove difficult fonts, patterned backgrounds
 - Left align or right align text depending on design
 - And use plain language
 - Avoid “geek speak”

Reading is Unnatural

- Most reading required by software is unnecessary
 - Lengthy text often justified by explaining clearly
 - Be terse and concise



Reading is Unnatural



Jeep

FIND A DEALER

It's easy to locate a dealer. 1. Click and hold box number 1 to select your search by Zip Code, City, Dealership Name or State. 2. Enter the Zip Code, City, or Dealership Name in the box marked number 2. 3. If searching by State only, select the state from the pull-down menu in box number 3. **If choosing to search by city or state, type the city in box 2 then select a state in the box marked number 3 to make your search complete. 4. Once finished, simply click the "Search" button.

Search by:

1

Enter Zip Code, City, or Dealership name:

2

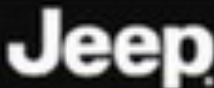
Select a State:

3

4

If you are a member of the U.S. Military, an executive, or a diplomat living outside the U.S., [click here](#) for special options.

Reading is Unnatural



FIND A DEALER

It's easy to locate a Jeep Dealer near you.

- Select Zipcode, City or Dealership Name
(If you choose to search by city, you will be prompted to provide the state.)
- Provide the Zip Code, City or Dealership Name
- Click on Search

Search by:

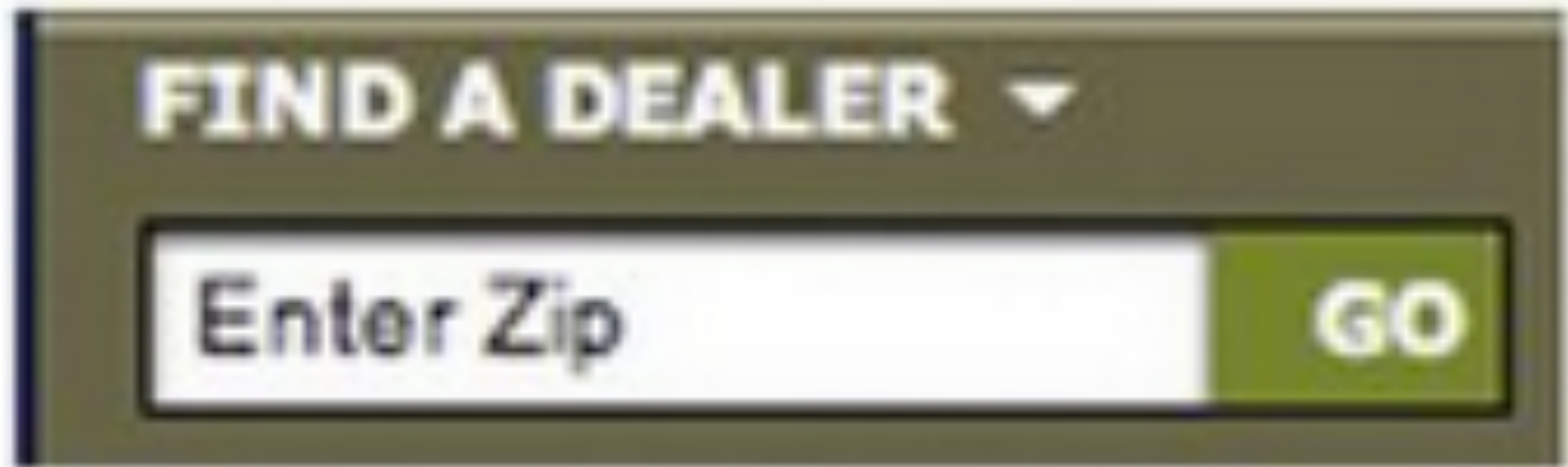
1

Enter Zip Code, City, or Dealership name:

2

3

Reading is Unnatural



FIND A DEALER ▼

Enter Zip

Reading is Unnatural

- Design implications: minimise the need for reading
 - Too much text loses poor readers
 - And a lot of skilled ones too
- Remember humans are goal oriented
 - Finish tasks in the quickest possible time