

Information Visualization Marks & Channels

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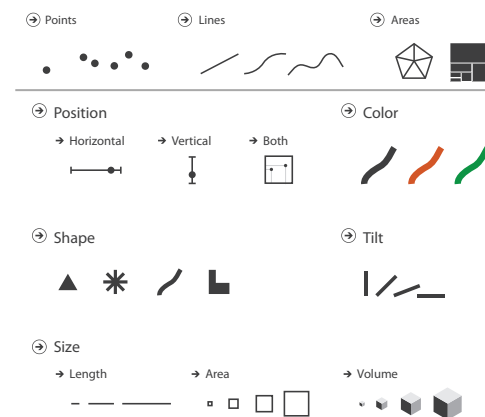
Week 3, 24 Sep 2020
<https://www.cs.ubc.ca/~tmm/courses/547-20>

Plan for today

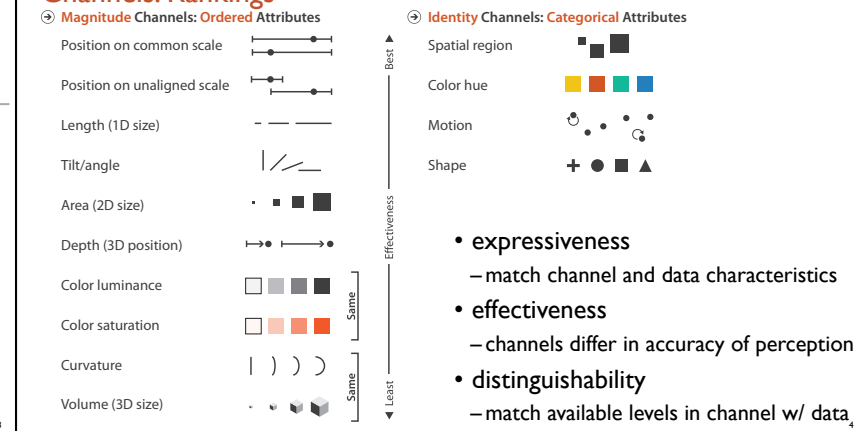
- 45 min: mini-lecture w/ discussion of examples
- 30 min: breakout groups
- 20 min: reportbacks
- 10 min: wrapup w/ further examples

Reminder: Marks and channels

- marks
 - basic geometric elements
- channels
 - control appearance of marks



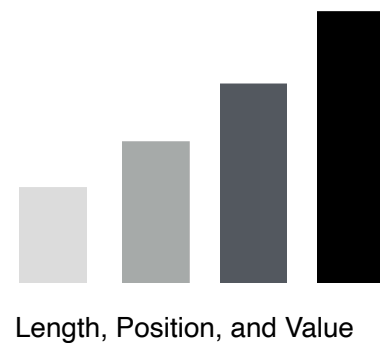
Channels: Rankings



- expressiveness
 - match channel and data characteristics
- effectiveness
 - channels differ in accuracy of perception
- distinguishability
 - match available levels in channel w/ data

Redundant encoding

- multiple channels
 - sends stronger message
 - but uses up channels



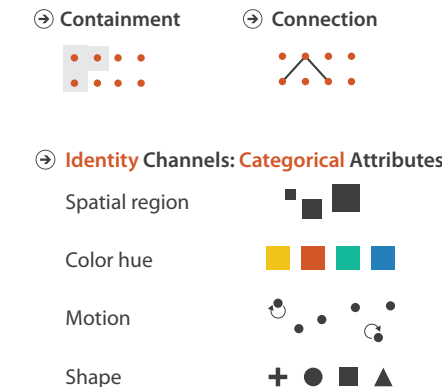
Marks: Constrained vs encodable

- math view: geometric primitives have dimensions
 - Points: 0D
 - Lines: 1D
 - Areas: 2D
- constraint view: mark type constrains what else can be encoded
 - points: 0 constraints on size, can encode more attributes w/ size & shape
 - lines: 1 constraint on size (length), can still size code other way (width)
 - areas: 2 constraints on size (length/width), cannot size code or shape code
 - interlocking: size, shape, position
- quick check: can you size-code another attribute, or is size/shape in use?

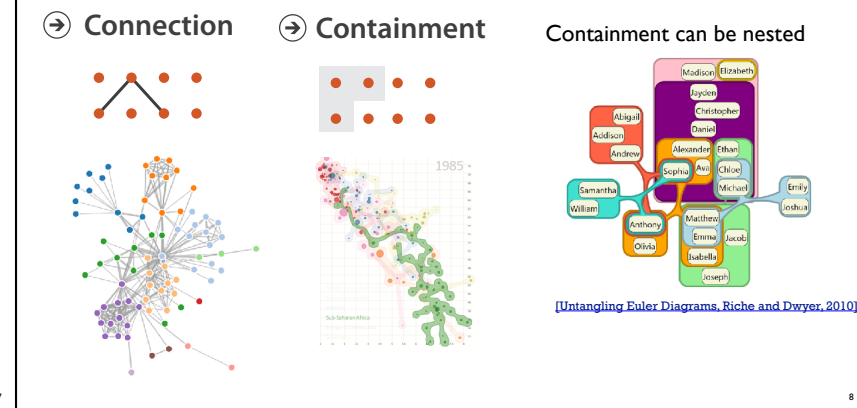
Grouping

- containment
- connection
- proximity
 - same spatial region
- similarity
 - same values as other categorical channels

Marks as Links

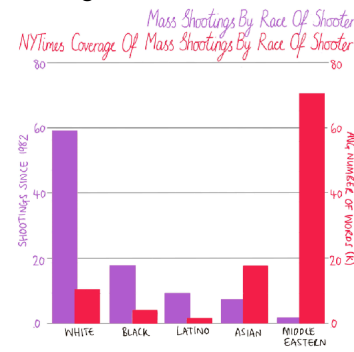


Marks for links



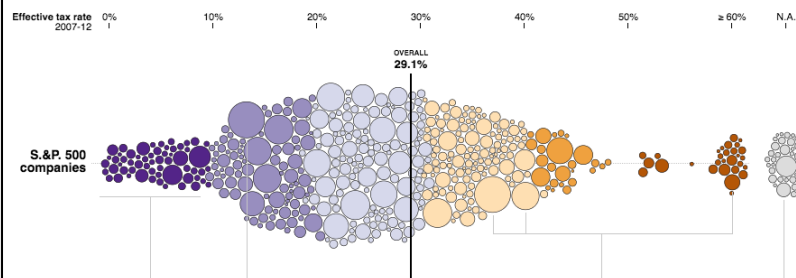
Quiz: Name those marks & channels

- A: Shooting Media Coverage



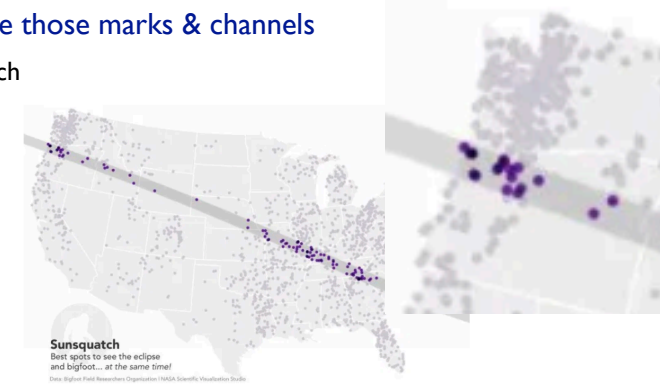
Quiz: Name those marks & channels

- B: Tax Rates



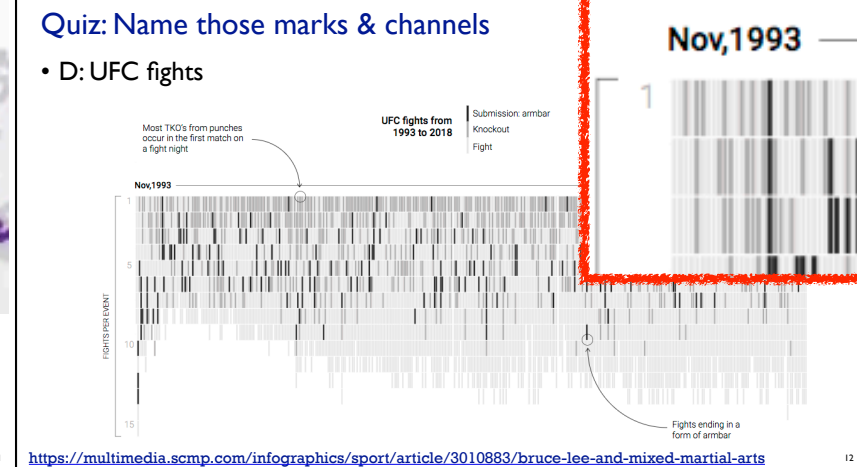
Quiz: Name those marks & channels

- C: Sunsquatch



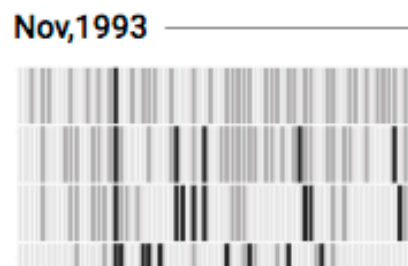
Quiz: Name those marks & channels

- D: UFC fights



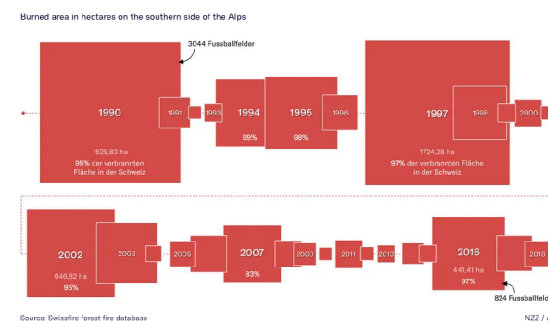
Analyzing marks

- what type of mark?
 - line?
 - no, not length coded
 - point mark with rectangular shape?
 - yes!
 - area?
 - no, area/shape does not convey meaning



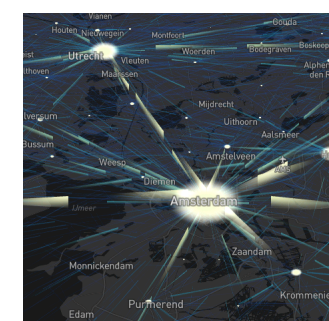
Quiz: Name those marks & channels

- E: Alpen Forest Fires



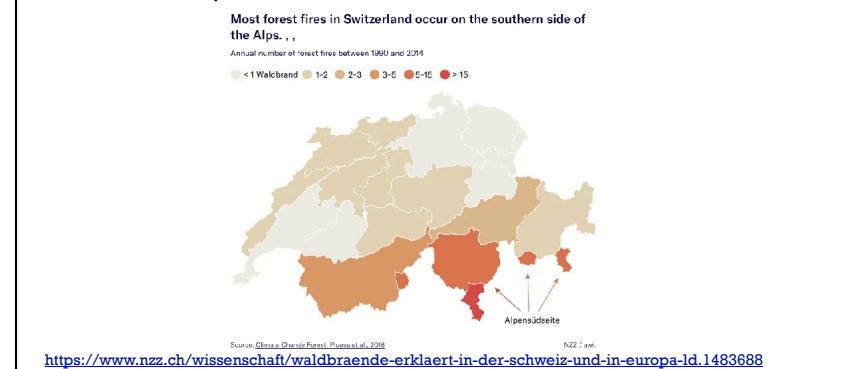
Quiz: Name those channels

- F: Netherlands Commuters



Quiz: Name that mark

- G: Yet More Alpen Forest Fires

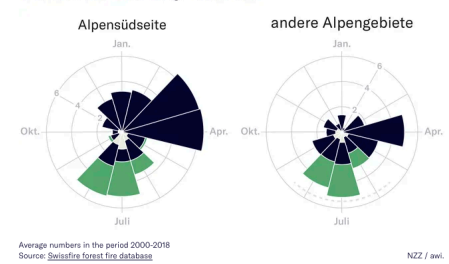


Quiz: Name those marks & channels

• H: More Alpen Forest Fires

Monthly distribution of forest fires in the Alpine regions caused by...

● den Menschen ● Blitzschläge ● unbekannt



<https://www.nzz.ch/wissenschaft/waldbraende-erklart-in-der-schweiz-und-in-europa-ld.1483688>