Card Sorting Part 2:
Basic Analysis (Online & Paper Sorts)

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Free 60-Minute Card Sorting Webinars

1. Preparing paper sorts: 24-Jan-13
2. **Basic card sort analysis (online and paper sorts): 31-Jan-13**
3. Advanced analysis (SynCaps V3): 7-Feb-13

Check our SynCaps Webinars page to download slides and recordings (www.syncaps.com)

Resources

- Free
  - Interactions article *Playing Your Cards Right* (ACM Digital Library and www.syntagm.co.uk/design/articles
  - Interaction Design Encyclopedia entry on card sorting (bit.ly/ixd-card-sorting)
  - Presentations, videos and free SynCaps V1 software (www.syncaps.com)
  - Caps (Computer-Aided Paper Sorting) videos on YouTube: just search for 'caps card sorting' (also on the Syntagm web site)
- Courses
  - CHI 2013, Paris: 30 April, 14:00-17:20 (chi2013.acm.org)
  - Guerrilla UCD Webinar 7 (www.guerrillaucd.com)

Questions

- If you're watching the live webinar, use the GotoWebinar Question Interface

- If you're watching a recording, or questions occur to you after the webinar, email me: william.hudson@syntagm.co.uk

- You can join our card sorting email list / discussion group by emailing caps-subscribe@mailman.syntagm.co.uk

Topics

- Data capture from paper sorts
- Online sorting
- Analysis spreadsheets
- Dendrograms
- Items x Items analysis
- Items x Groups analysis
- Nested Groups analysis

Data Capture From Paper Sorts

- All editions of SynCaps use the same simple file format (including V1, which is free)
- Data can easily be typed in. For larger volumes/frequent use, consider a bar code scanner.
- Captured data is saved in a simple text file
- Note that SynCaps V1 does not support ad-hoc items (they need to be assigned item numbers)
- Nested groups are specific to SynCaps V3

Barcode Scanner

Any barcode scanner that reads ‘code 39’ will work
but we supply a suitable model in the UK & EU

(see www.syntagm.co.uk/design/cardsortshop.shtml)

Simple Data File

- SynCaps data files are conceptually in two parts
  - Optional **header** with pre-defined items and groups (items must be pre-defined in SynCaps V1)
  - Mandatory **body**, starting with the first participant (which may be a reference/expert sort)
- The first letter of each line determines what kind of data it is: Item, Group, Sub-group or Participant
- Blank lines are ignored (SynCaps V3 also ignores lines starting with / or !)

GDry White
GFull-Bodied Red
GSparkling
IBeajolais
ICabernet Sauvignon
ICava
IChampagne
IChardonnay
IClaret
IMerlot
IMuscat
IPinot Grigio
IRiesling
ISyrah
IWhite Zinfandel

Header

PReference
G3
I4F3
I3F3
G1
I12F1
I10F2
I5F3
I9F2
I8F3
…

Body

GСухое белое
GКрасное
GИгристое
IБожоле
IКаберне Совиньон
IКава
IШампанское
IШардонне
IКларе
IМерло
IМускат
IПино Гриджио
IРислинг
ICира
IБелый Зинфандел

Header

PReference
G3
I4F3
I3F3
G1
I12F1
I10F2
I5F3
I9F2
I8F3
…

Body

(SynCaps uses Unicode
so it is easy to perform
sorts in multiple languages)

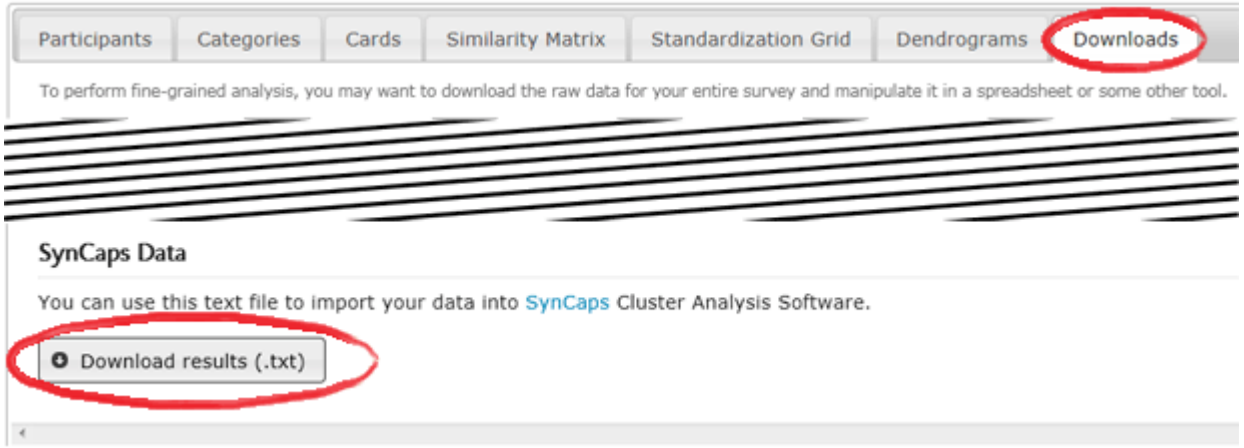
```
GDry White
GFull-Bodied Red
GSparkling
IBeajolais
ICabernet Sauvignon
ICava
IChampagne
IChardonnay
IClaret
IMerlot
IMuscat
IPinot Grigio
IRiesling
ISyrah
IWhite Zinfandel
PReference
 G3                  {Sparkling}
  I4F3                {Champagne}
  I3F3                {Cava}
 G1                  {Dry White}
  I12F1               {White Zinfandel}
  I10F2               {Riesling}
  I5F3                {Chardonnay}
  I9F2                {Pinot Grigio}
  I8F3                {Muscat}
 G2                  {Full-Bodied Red}
  I11F2               {Syrah}
  I2F3                {Cabernet Sauvignon}
  I6F3                {Claret}
  I7F2                {Merlot}
  I1F1                {Beajolais}
```

SynCaps V3 includes its own syntax editor

Online Sorting

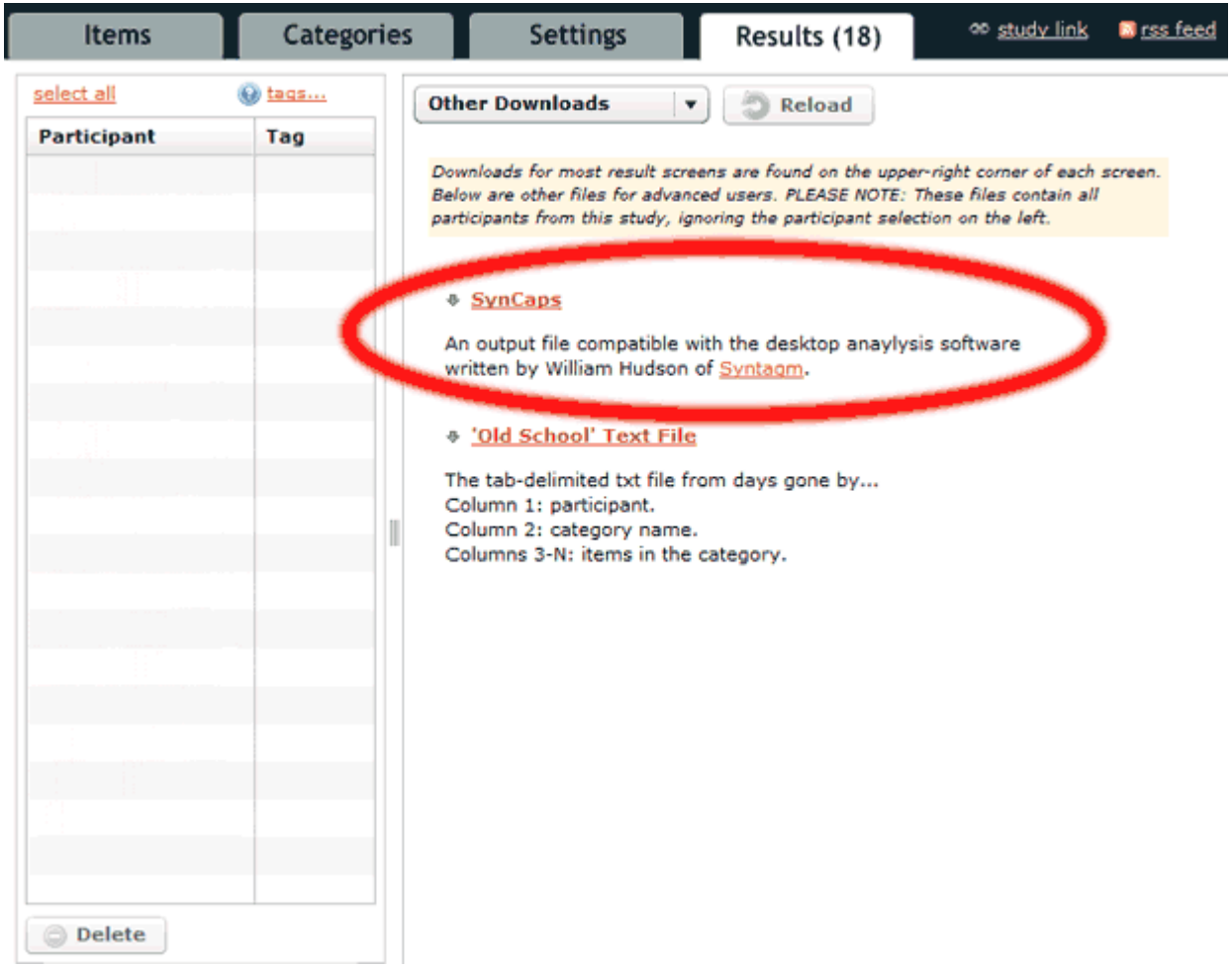
- Both of the most popular online card sorting services (WebSort and OptimalSort) will export data in SynCaps format
- Most online card sorting services now also provide analyses similar to SynCaps V2, but not
  - Customizable charts, quality of fit / frequency of use, reference / expert sorts or items split between groups (provided by all versions of SynCaps)
  - Anonymous participants in charts (SynCaps V3)
  - Nested groups (SynCaps V3)
  - Participant analysis and filtering (SynCaps V3)
  - SPSS cluster analysis scripts (SynCaps V3)
- You can use SynCaps to combine or compare paper and online sorts

Online Sorting – OptimalSort



From www.syntagm.co.uk/design/cardsortonline.shtml

Online Sorting – WebSort



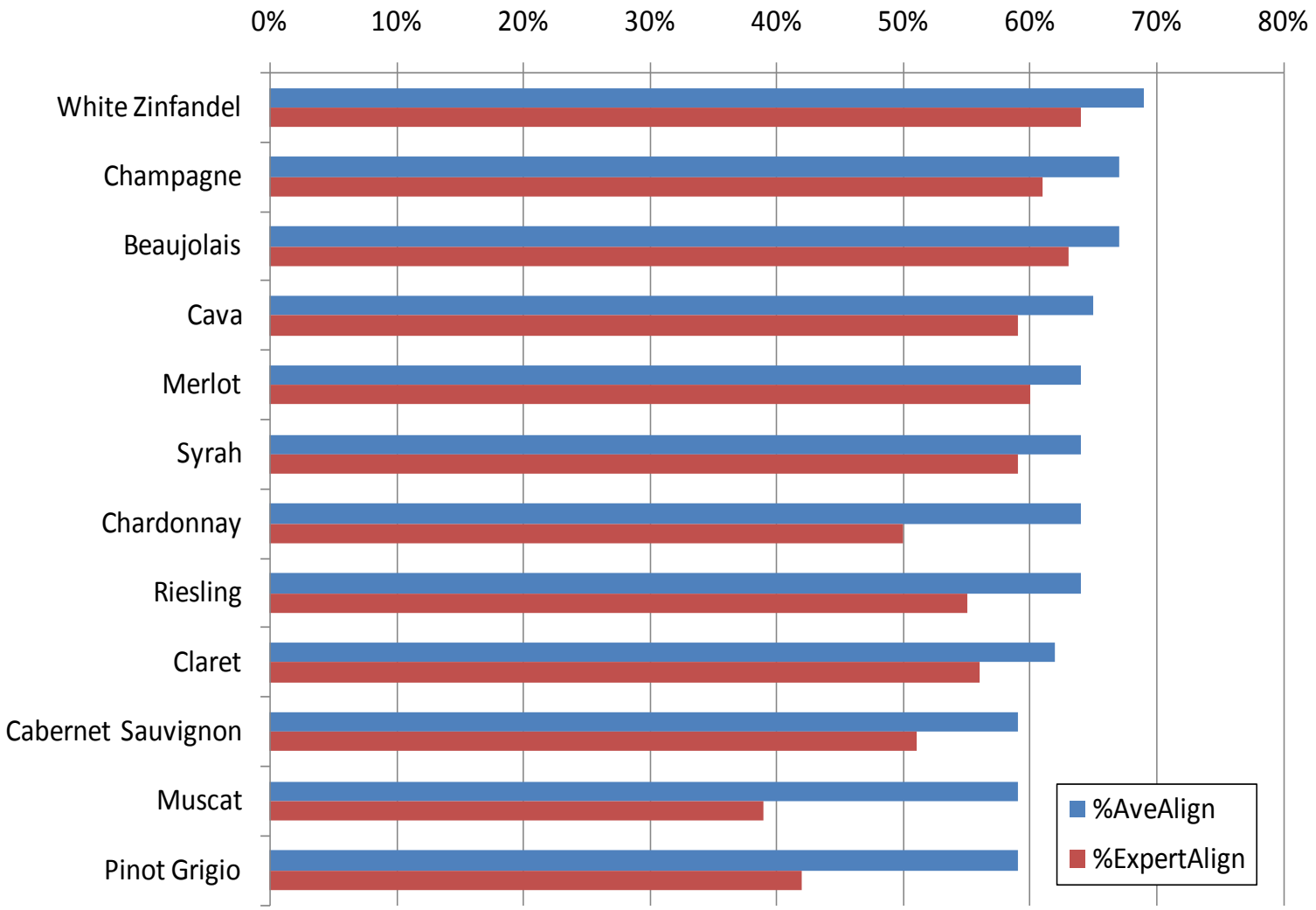
From www.syntagm.co.uk/design/cardsortonline.shtml

Analysis Spreadsheets

- All versions of SynCaps produce the following spreadsheets (as .csv files)
  - Cards
  - Items
  - Matrix (unweighted similarity matrix)
  - Participants
  - Weighted matrix
- SynCaps V3 also produces
  - Participant matrix
  - SPSS script for cluster analysis of weighted matrix
- Some of these are also produced by online sorting services

Analysis Spreadsheets

- The Items and Participants spreadsheets include two ‘alignment figures’
  - AveAlign – how similar the sort results are for an item or participant compared with the average
  - ExpAlign – how similar the sort results are compared with an expert or reference sort (you supply the expert or reference sort as the first participant, if you wish to have one)
- A variety of useful charts and analyses can be performed on the spreadsheets – see the ‘Instructions for Processing’ document in the Combined Download zip file

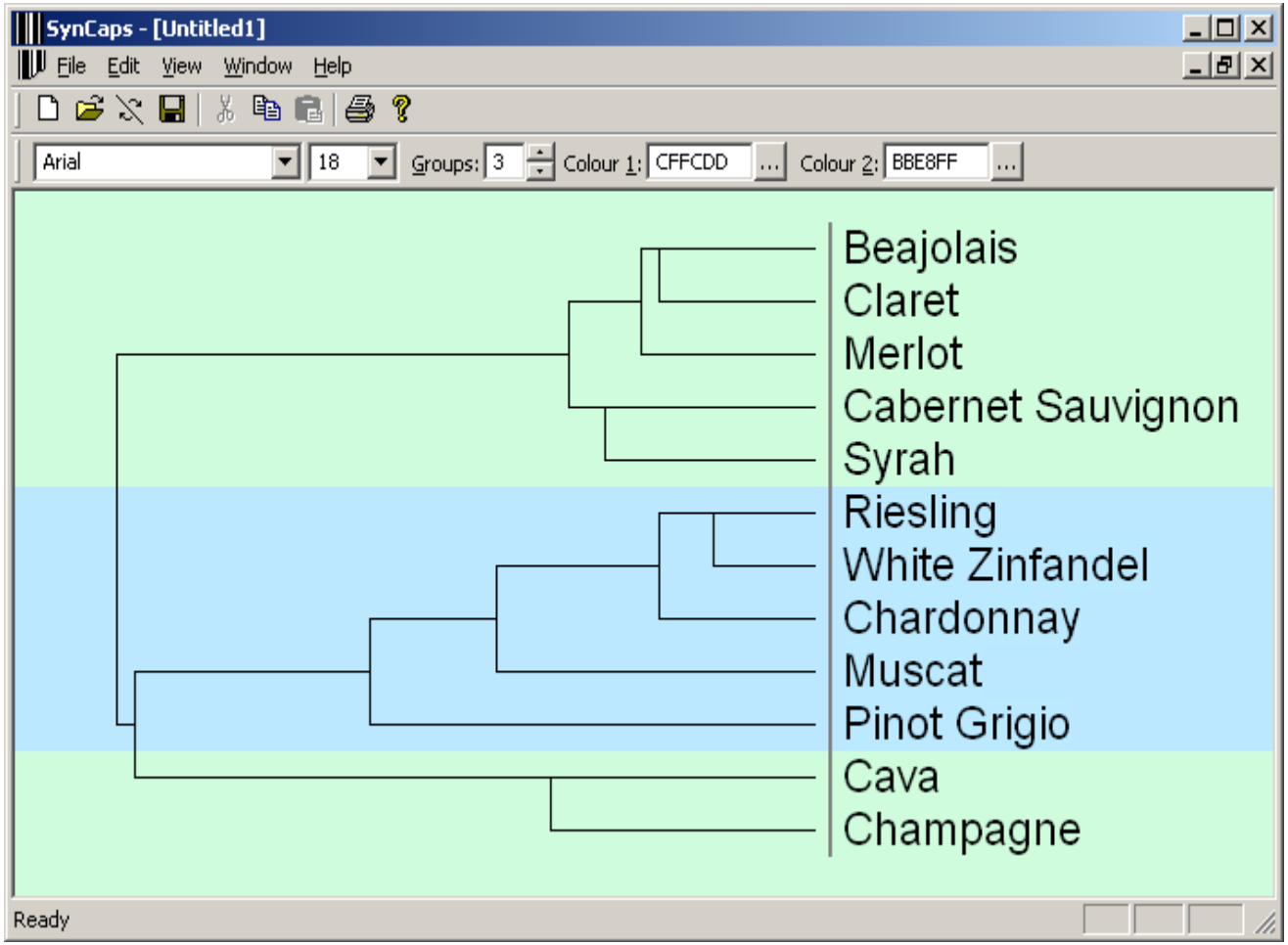


Example of Items Spreadsheet Analysis

Dendrograms

- Dendro is Latin (from Greek dendron) for ‘tree’
- Dendrograms are a very common way of showing the results of hierarchical cluster analysis
- Note that the hierarchy is based entirely on how often items appeared together in the same groups – it is not a taxonomic hierarchy!
- Cluster analysis and the resulting dendrograms take no notice of group names

Dendrograms

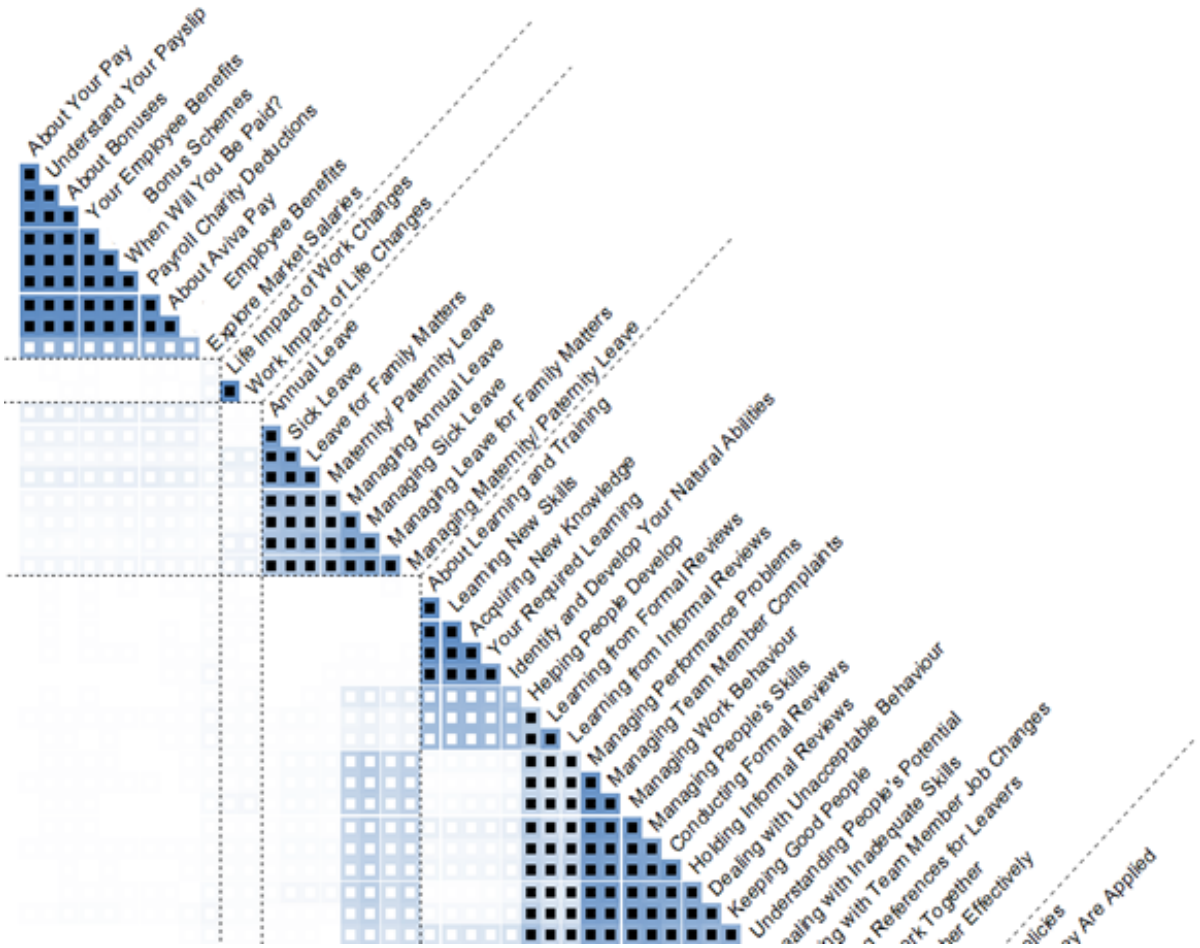


Dendrogram from SynCaps V1 (free)

Other Charts

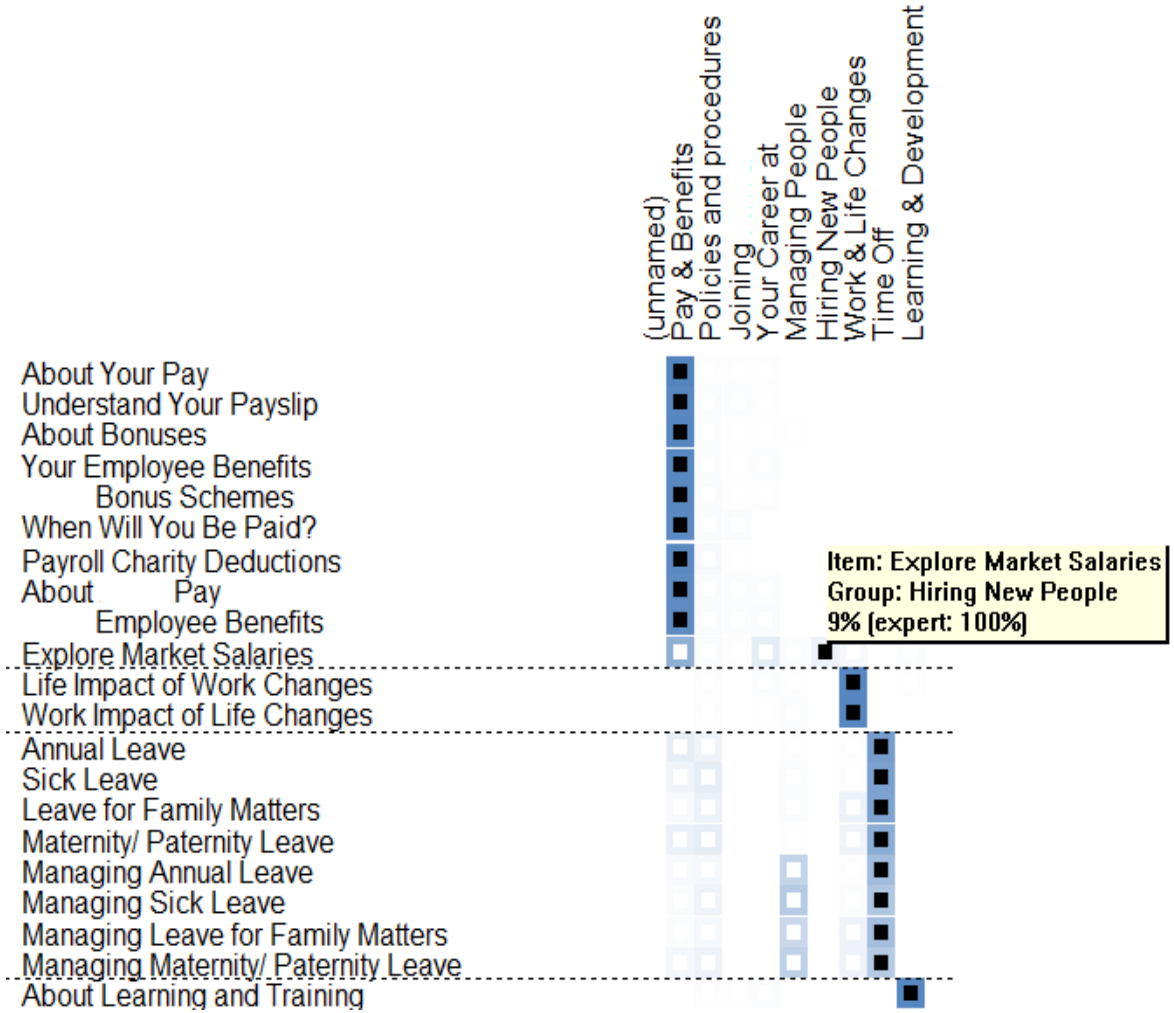
- SynCaps V2/V3 and online
  - Items x Items (sometimes called ‘pairs map’ or ‘similarity chart’)
  - Items x Groups
  - SynCaps has option to use reference/expert sort
- SynCaps V3 only
  - Nested Groups

Items x Items (Pairs Map / Similarity)



Pairs map from SynCaps V2
(Black markers show existing IA)

Items x Groups (SynCaps V2/V3)

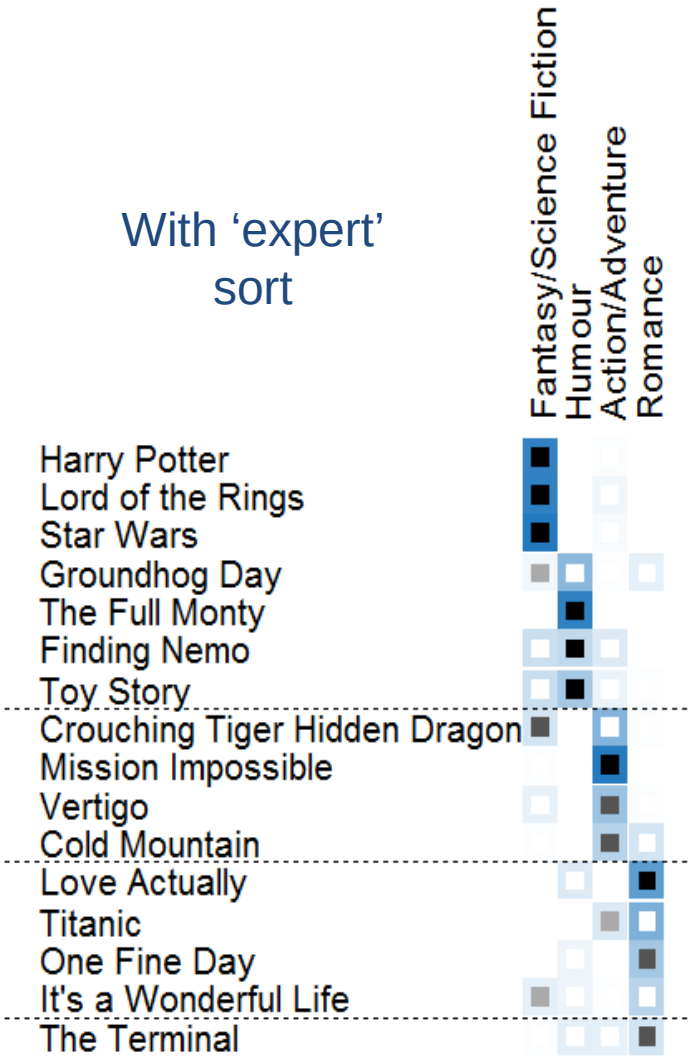


(SynCaps V2 chart organizes items using cluster analysis)

Items x Groups (SynCaps V2/V3)

Without 'expert' sort

With 'expert' sort



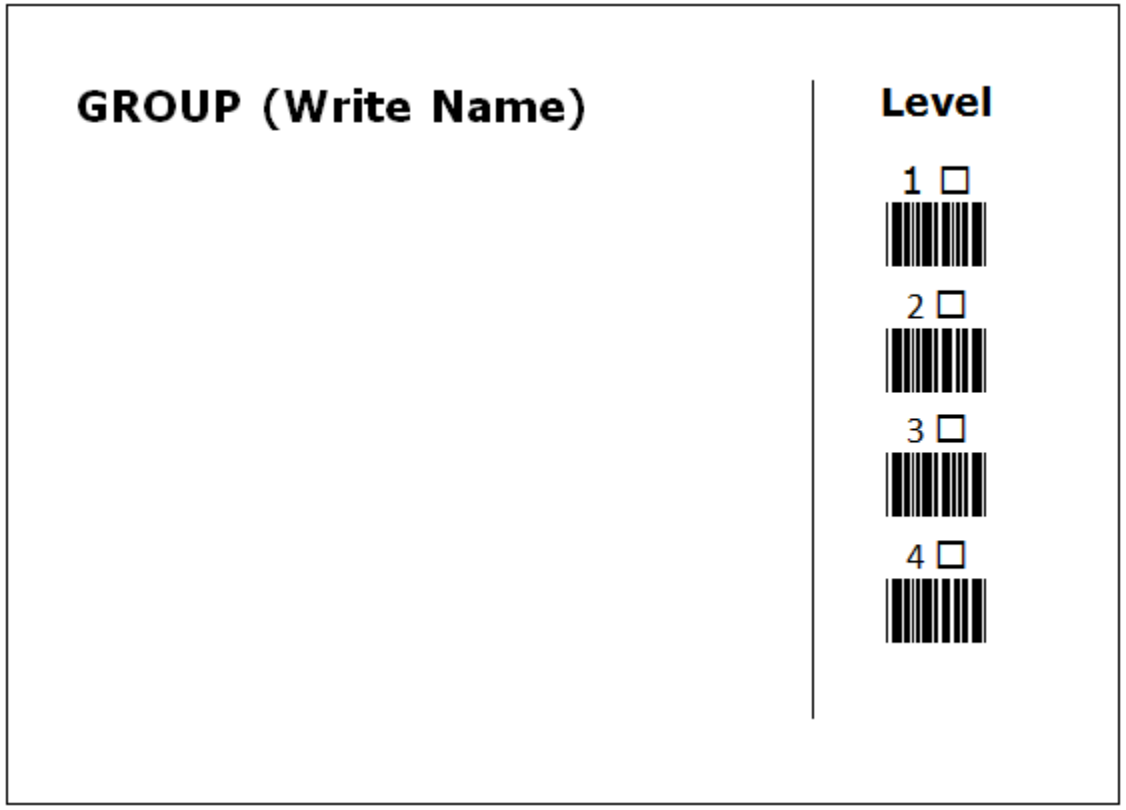
(Charts show two different sets of participants)

Nested Groups (SynCaps V3)

- Card sorting has traditionally been done as a single level – groups with items under each
- Some tools support ‘anonymous’ sub-groups (SynCaps V2 & V3 for example)
- SynCaps V3 introduces nested groups
  - Up to 9 levels
  - Groups can be assigned levels either by participants or by the researcher
  - Consider providing at least some predetermined group names to reduce stress on participants

Nested Groups (SynCaps V3)

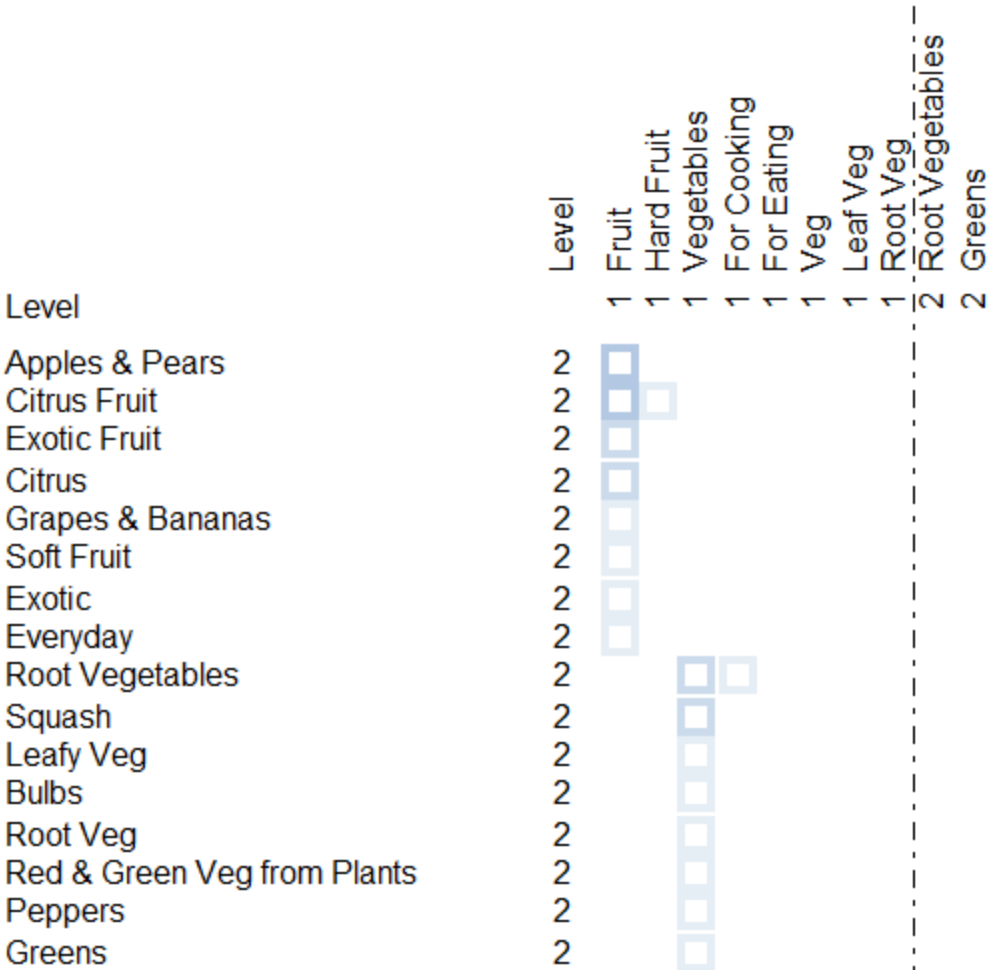
- Nested group levels can either be selected on pre-printed cards or written on the card



Nested Groups (SynCaps V3)

- Nested groups affect the weights applied in cluster analysis
  - Items appearing together in the same sub-group are weighted most heavily
  - Items appearing in ‘child’ groups are weighted less heavily (according to how many levels intervene)
  - Items with no common parent receive a 0 score
- V3 also introduces a Subgroups x Groups

Subgroups x Groups Chart



Questions

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Commercial Messages

- If you're an existing SynCaps user and would like to beta-test SynCaps V3 during February 2013, please get in touch: william.hudson@syntagm.co.uk
- Look out for my new book *Lighting the Road Ahead – The 55-minute guide to usability, accessibility and search-engine optimisation* www.lightingtheroadahead.com

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