Card Sorting Part 3: Advanced Analysis (SynCapsV3)

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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)

SynCapsV3

- Free upgrade from SynCapsV2 (€180/£150/$240)
- Due for release Feb/Mar 2013
- Works on Windows XP & later (will also work in Windows emulators for Mac)
- Full feature list/comparison table at bit.ly/syncaps-compare
- Priced at €240/£200/$320
- (20% VAT has to be added for the UK and EU customers without a VAT no)

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

- Introduction to participant analysis
- Using participant filters
- Participant clusters
- Comparing cluster results
- Splitting data files

Participant Analysis

- The effectiveness of card sorting (whether paper or online) can be reduced by participants who
  - Are not good at systemizing
  - Do not have adequate familiarity with the items being sorted
  - Sort the items differently because of their tasks or contexts of use
  - Are not fully engaged with providing useful solutions
- Participant analysis can help to overcome many of these issues

Participant Analysis

- Traditional card sorting (item) analysis is concerned with how often pairs of items appear together in groups
- This allows us to produce a proximity or similarity matrix

Analysis Example

Dry White	**Full-Bodied Red**	**Sparkling**
Chardonnay	Beaujolais	Cava
Riesling	Cabernet Sauvignon	Champagne
Muscat	Claret	
Pinot Grigio	Merlot	
White Zinfandel	Syrah	

Sample card sort items grouped by a participant

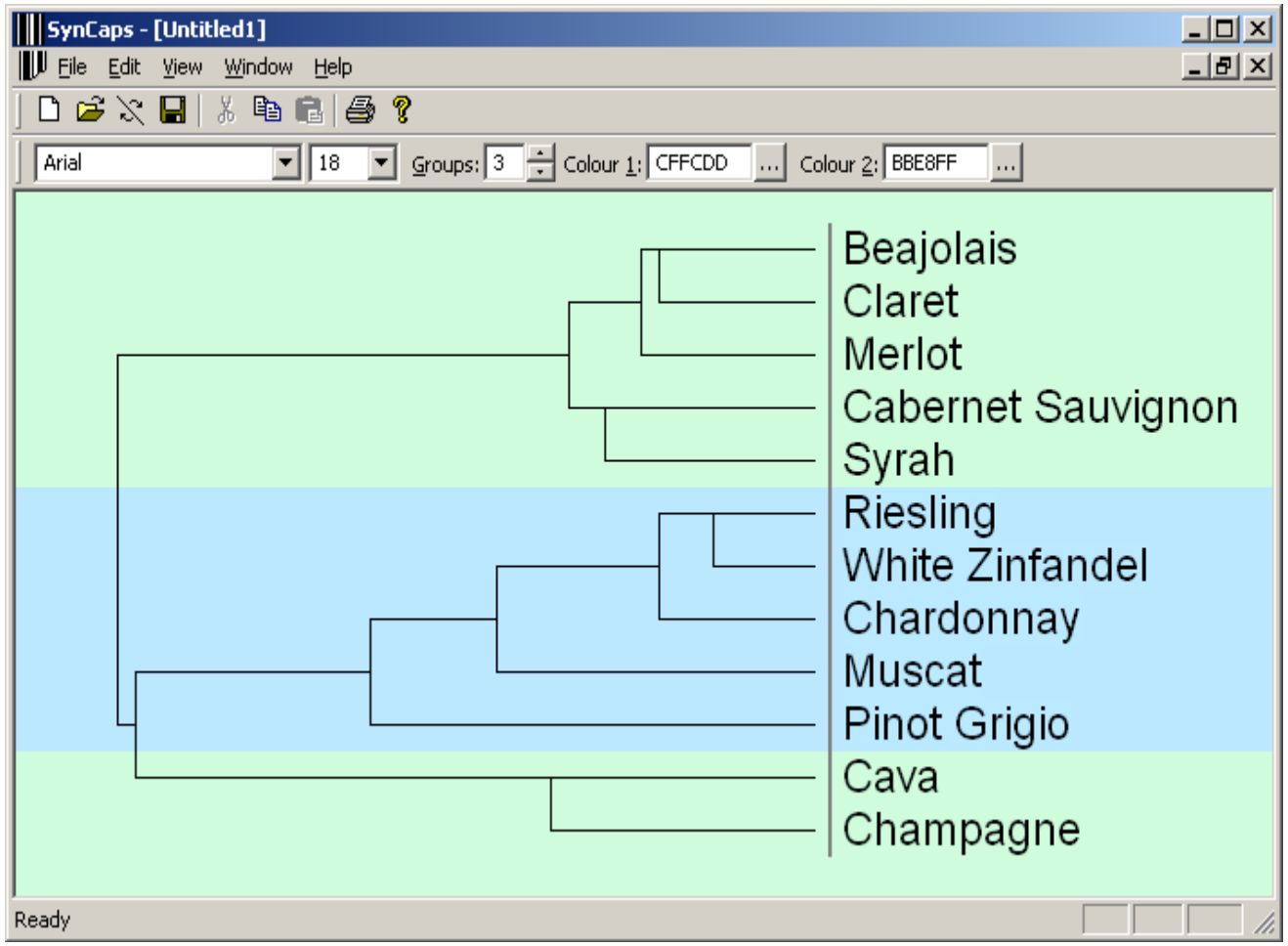
Proximity Matrix for One Participant

	Beaujolais	Cabernet Sauvignon	Cava	Champagne	Chardonnay	Claret	Merlot	Muscat	Pinot Grigio	Riesling	Syrah	White Zinfandel		
Beaujolais		1				1	1				1			
Cabernet Sauvignon	1					1	1				1			
Cava				1										
Champagne			1											
Chardonnay								1	1	1		1		
Claret	1	1					1				1			
Merlot	1	1				1					1			
Muscat					1				1	1		1		
Pinot Grigio					1			1		1		1		
Riesling					1			1	1			1		
Syrah	1	1				1	1							
White Zinfandel					1			1	1	1				

Proximity Matrix for All Participants

	Beaujolais	Cabernet Sauvignon	Cava	Champagne	Chardonnay	Claret	Merlot	Muscat	Pinot Grigio	Riesling	Syrah	White Zinfandel		
Beaujolais		9	3	2		11	11	1	4	1	9			
Cabernet Sauvignon	9		1	1	2	10	9	2	4	1	10	1		
Cava	3	1		9	2	3	1	4	1	1	1	2		
Champagne	2	1	9		1		1	3	2	1				
Chardonnay		2	2	1			1	8	6	11	2	11		
Claret	11	10	3				10	1	5		10	1		
Merlot	11	9	1	1	1	10			4	2	10	1		
Muscat	1	2	4	3	8	1			5	8	2	8		
Pinot Grigio	4	4	1	2	6	5	4	5		6	3	7		
Riesling	1	1	1	1	11		2	8	6		2	12		
Syrah	9	10	1		2	10	10	2	3	2		2		
White Zinfandel		1	2		11	1	1	8	7	12	2			

SynCaps Dendrogram



Participant Analysis

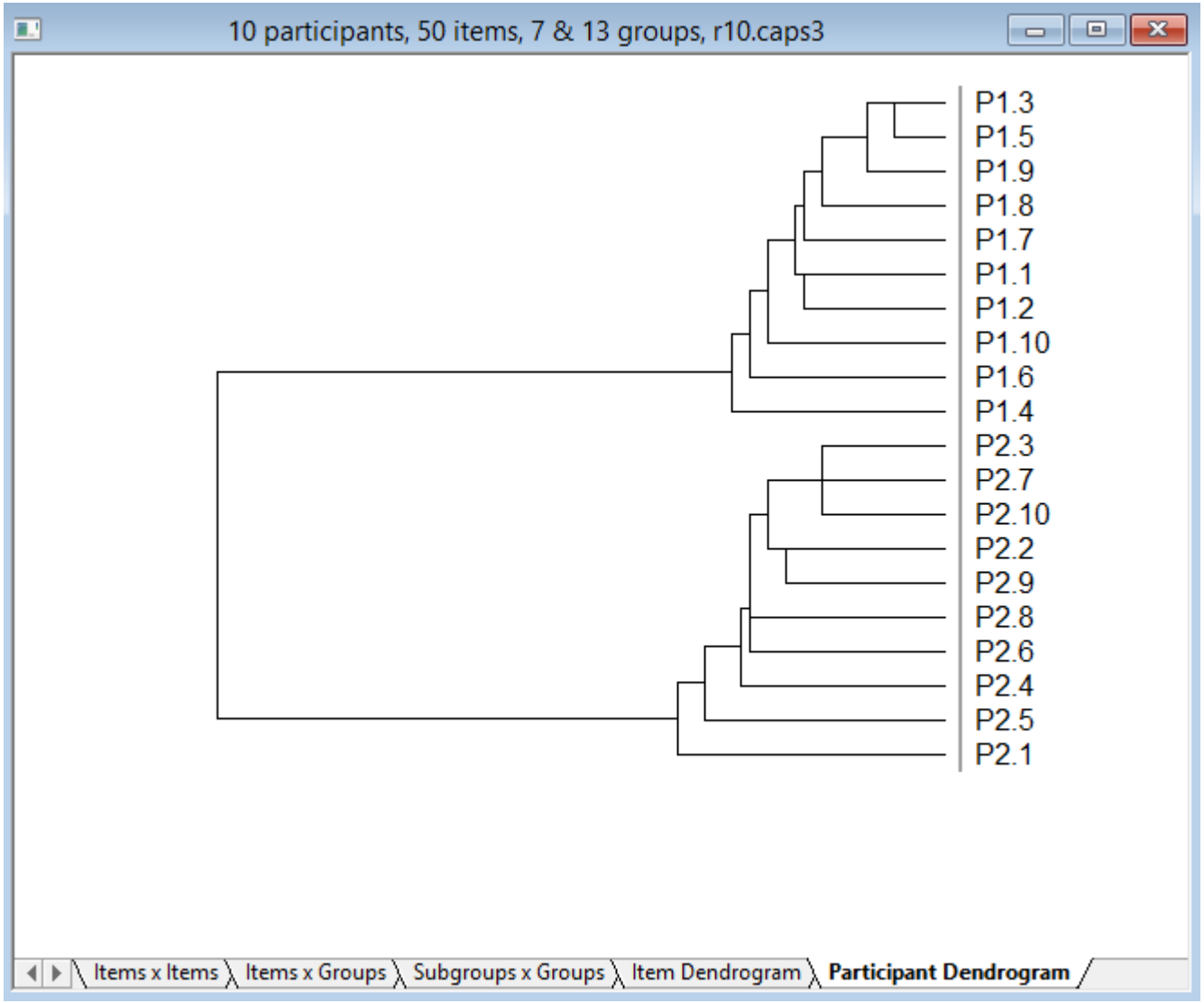
- With participant analysis we apply the same approach to similarity between participants in the way they sort the cards
- So, if 100 cards are sorted, two participants have a similarity of…
  - 100% if all cards appear in the same groups
  - 99% if one card would have to be moved to make the groups identical
  - 98% if two cards would have to be moved
  - and so on

Percentage similarity

	P1.3	P1.5	P1.9	P1.8	P1.7	P1.1	P1.2	P1.10	P1.6	P1.4	P2.3	P2.7	P2.10	P2.2	P2.9	P2.8	P2.6	P2.4	P2.5	P2.1
P1.3		98	94	88	90	90	90	88	86	84	16	16	18	22	20	22	18	20	20	18
P1.5	98		96	90	92	90	92	90	88	86	14	14	16	22	20	22	16	18	20	20
P1.9	94	96		92	88	86	88	86	84	82	16	16	18	24	20	22	16	20	22	22
P1.8	88	90	92		82	80	82	80	78	76	18	18	20	24	22	22	18	20	24	24
P1.7	90	92	88	82		82	84	82	80	78	16	18	18	20	24	22	18	20	22	20
P1.1	90	90	86	80	82		88	80	78	78	18	20	22	22	22	26	18	22	24	24
P1.2	90	92	88	82	84	88		82	80	80	18	18	18	22	20	22	18	20	20	24
P1.10	88	90	86	80	82	80	82		80	76	16	16	16	22	20	22	18	18	20	22
P1.6	86	88	84	78	80	78	80	80		74	18	20	22	24	24	24	20	22	22	22
P1.4	84	86	82	76	78	78	80	76	74		20	20	20	22	22	24	22	22	24	22
P2.3	16	14	16	18	16	18	18	16	18	20		90	90	86	84	84	84	84	80	78
P2.7	16	14	16	18	18	20	18	16	20	20	90		90	84	82	82	82	82	78	80
P2.10	18	16	18	20	18	22	18	16	22	20	90	90		84	82	82	84	82	78	76
P2.2	22	22	24	24	20	22	22	22	24	22	86	84	84		86	82	78	82	74	74
P2.9	20	20	20	22	24	22	20	20	24	22	84	82	82	86		80	78	78	74	72
P2.8	22	22	22	22	22	26	22	22	24	24	84	82	82	82	80		80	76	76	74
P2.6	18	16	16	18	18	18	18	18	20	22	84	82	84	78	78	80		76	74	68
P2.4	20	18	20	20	20	22	20	18	22	22	84	82	82	82	78	76	76		74	70
P2.5	20	20	22	24	22	24	20	20	22	24	80	78	78	74	74	76	74	74		64
P2.1	18	20	22	24	20	24	24	22	22	22	78	80	76	74	72	74	68	70	64	

Participant matrix (colour-coded in Excel using conditional formatting)

Two sets of participants – one using 7 groups, the other 13

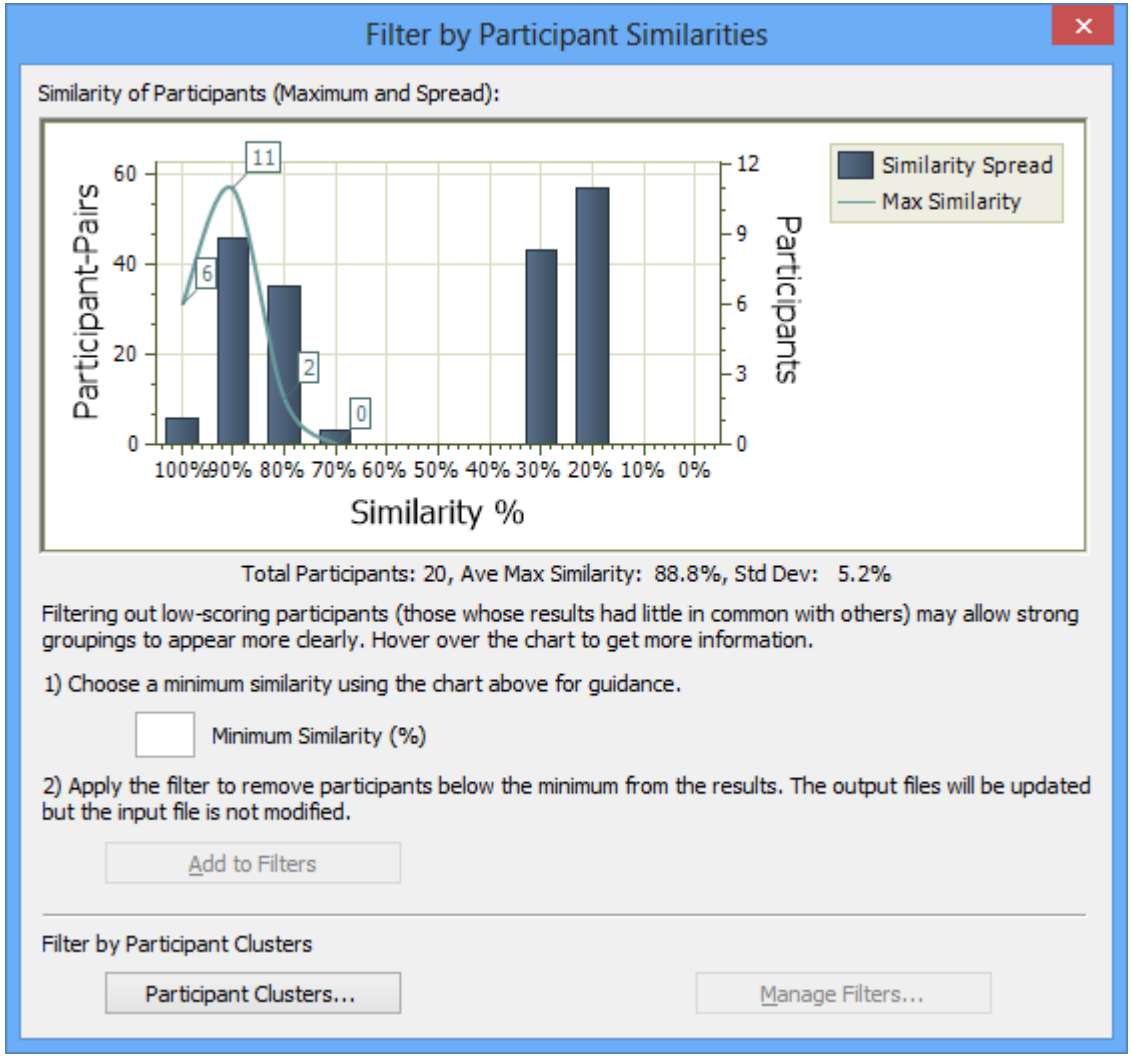


Participant dendrogram corresponding to similarity matrix

Using Participant Filters

- SynCapsV3 introduces two types of participant filter
  - Similarity filter: participants below a specified similarity are omitted from the analysis
  - Cluster filter: participants are grouped into distinct clusters that are analysed separately
- Create filters and select them in the main window to compare results

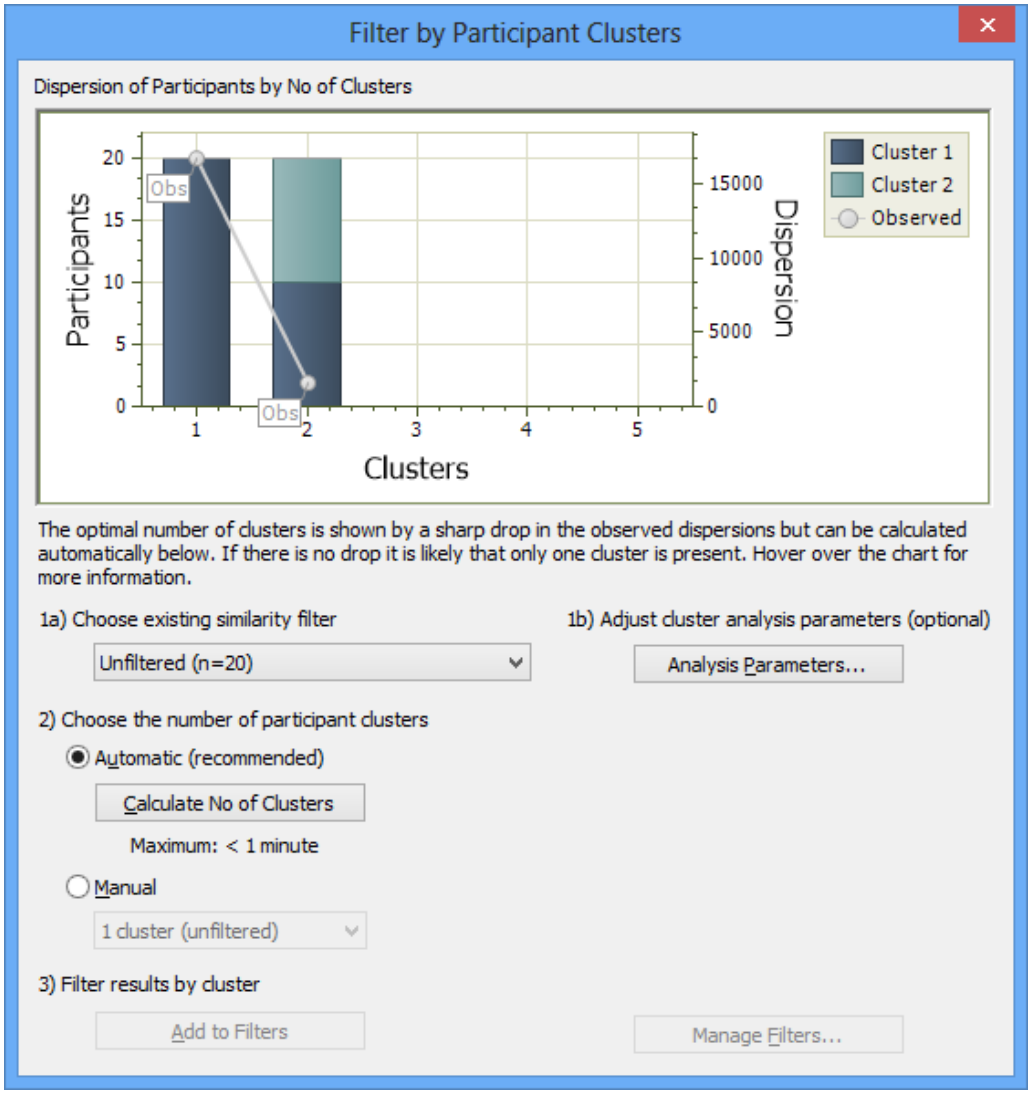
Similarity Filter



This chart is built from the participant similarity matrix

In simple cases the maximum curve and spread bars should roughly agree (this is not a simple case!)

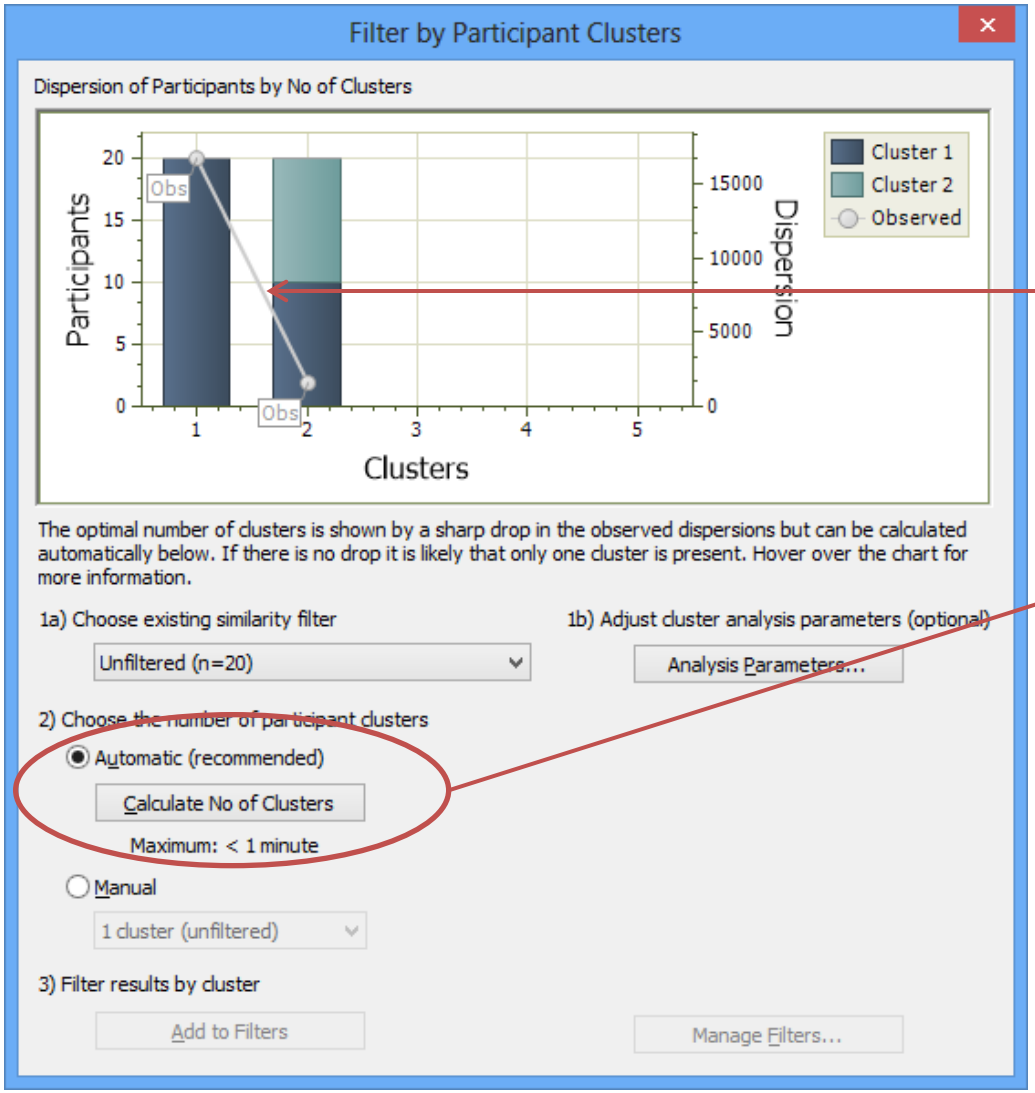
Cluster Filter



By default SynCapsV3 tries to find up to 5 participant clusters

However, clusters have to be a specified minimum size, so this is not always possible

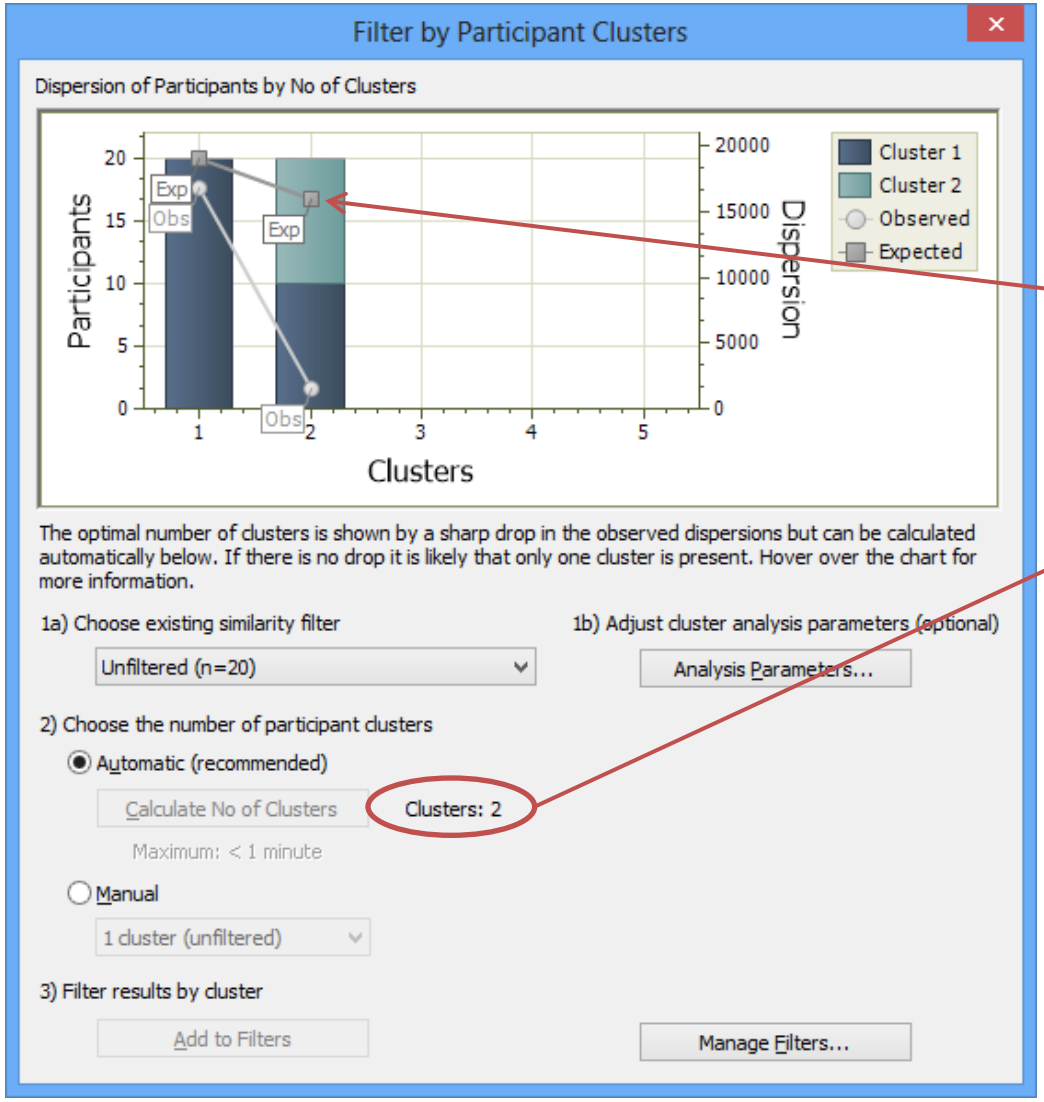
Cluster Filter



A sharp drop in the observed dispersions shows the optimum number of clusters

The drop is fairly obvious here but the automatic calculation will report the number of significant clusters, if any

Cluster Filter

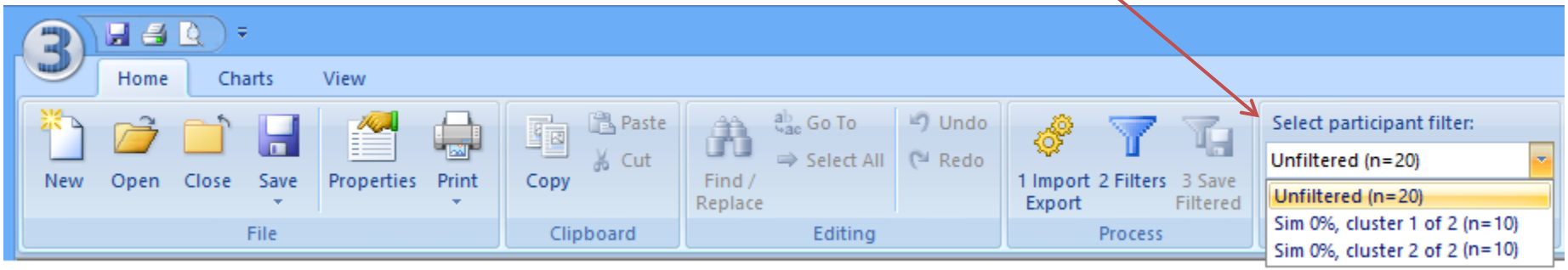


Automatic calculation adds expected dispersions from random trials

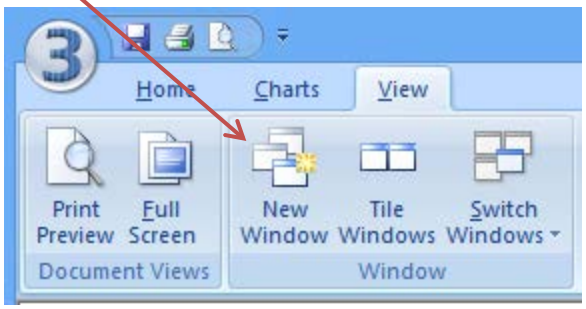
The number of clusters is chosen when observed dispersions drops more quickly than the expected

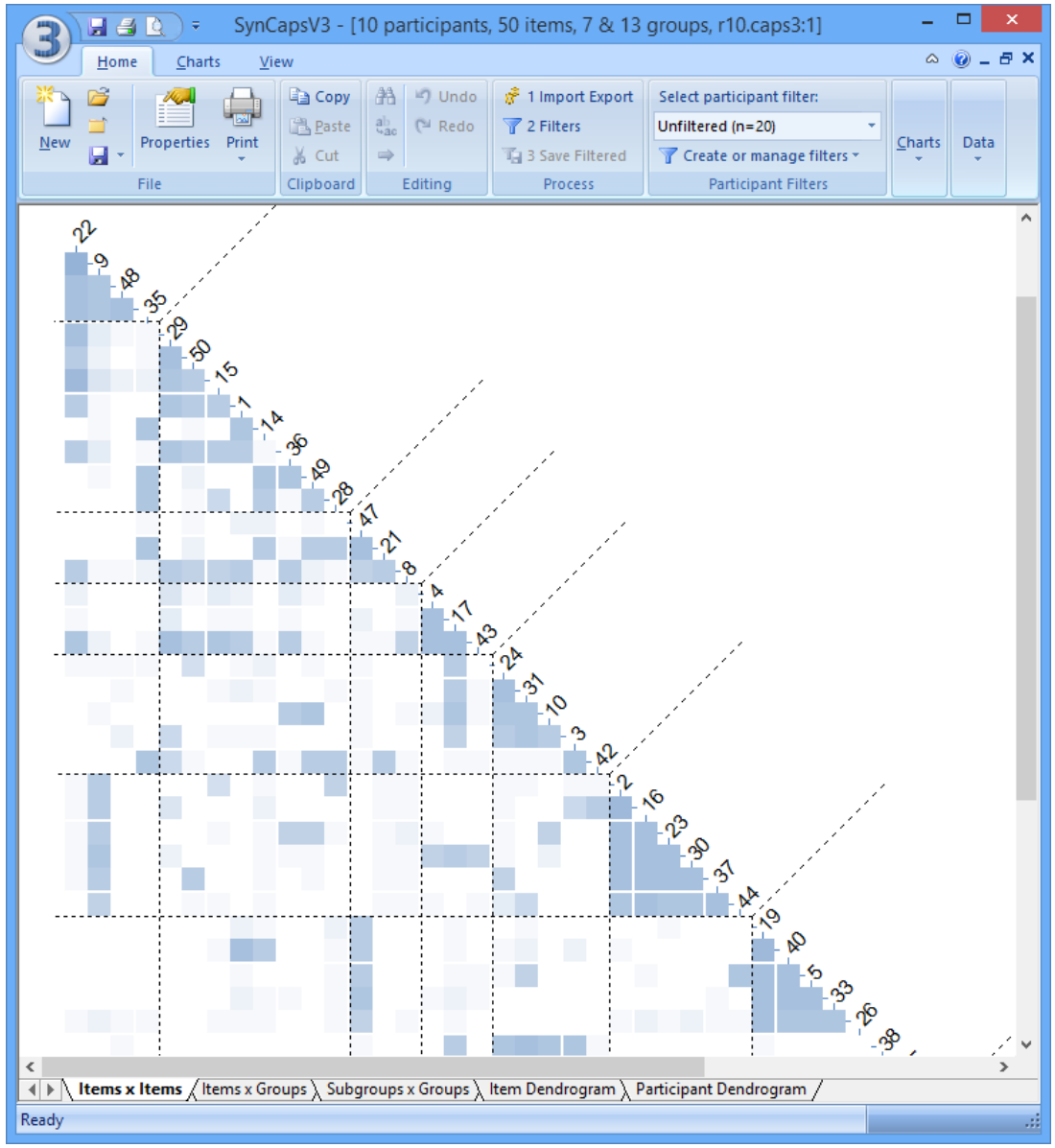
Comparing Cluster Results

Participant filters can be selected in the Home ribbon

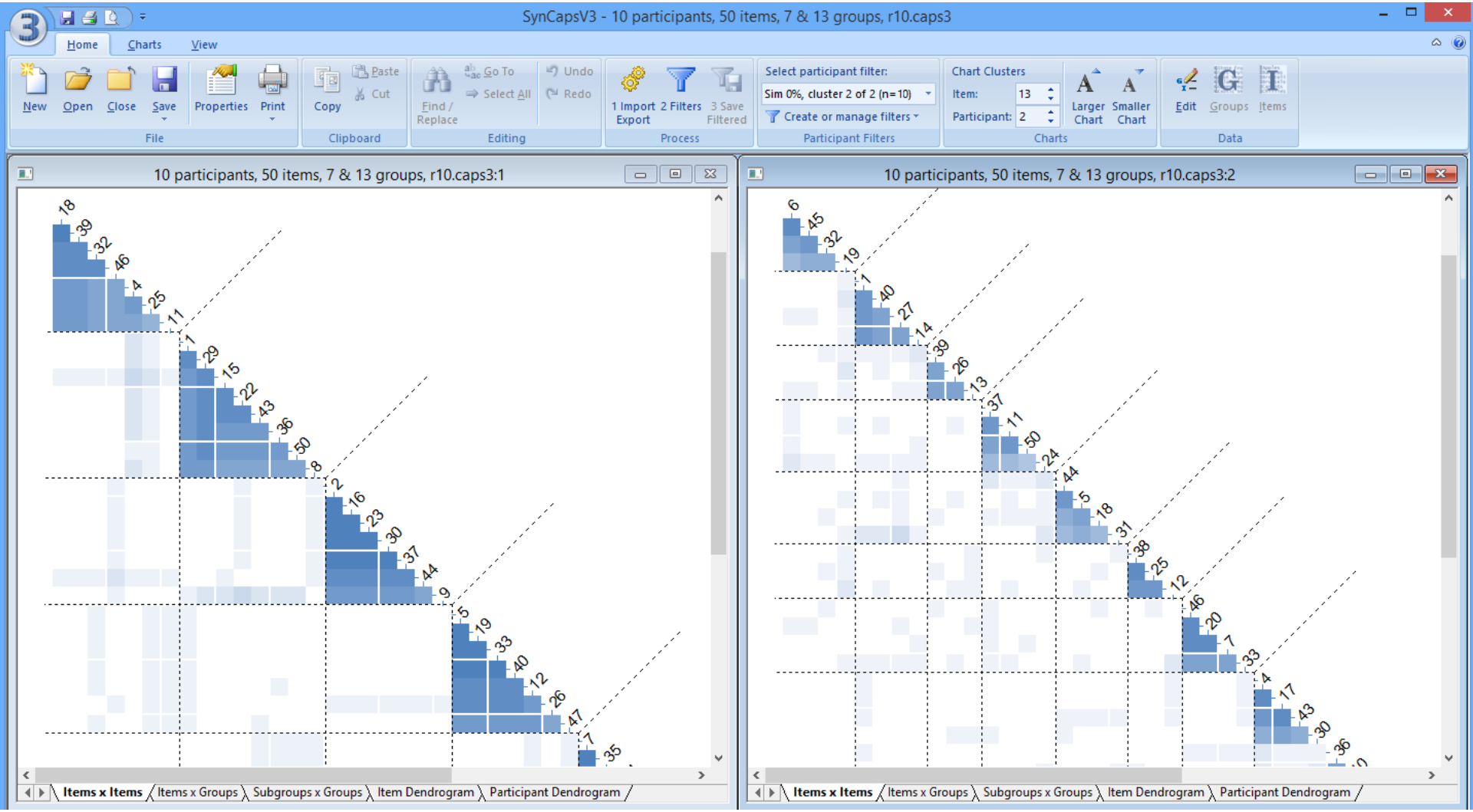


Multiple windows can be created and arranged in the View ribbon



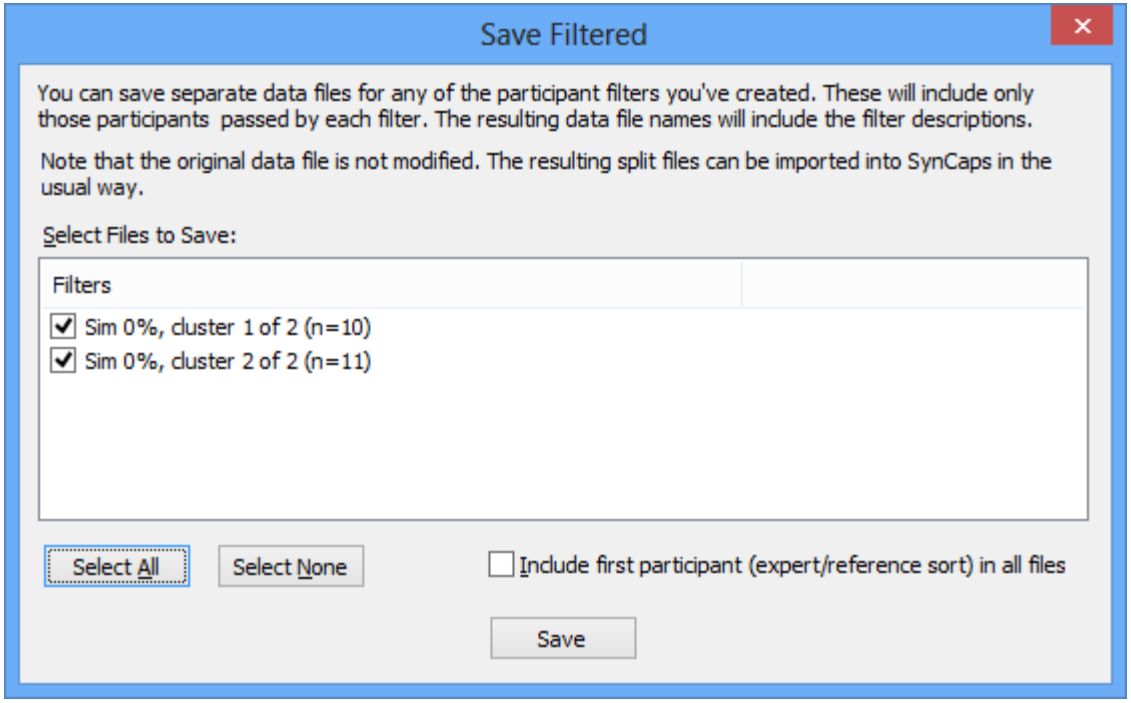


This screenshot shows the unfiltered results
(the test data does not include item names)



Here, the left window shows participant cluster 1 results while the right shows cluster 2

Splitting Data Files



New data files can be created including just the participants who are passed by each filter

Will Participant Analysis Help You?

- If you have a troublesome sort (from WebSort, OptimalSort or captured SynCaps cards) give us a chance to show how participant analysis could help
- You need to allow us to use the results in training and promotion (you may anonymize the data as you see fit)
- Contact us for further information but bear in mind this is a limited offer, so don't delay! william.hudson@syntagm.co.uk

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

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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