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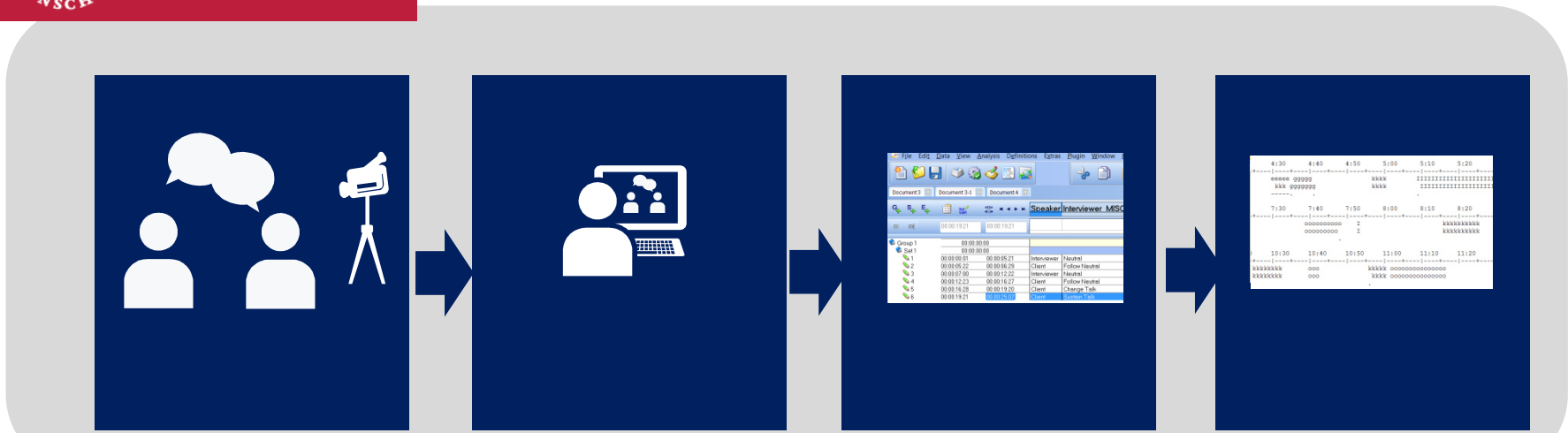

Assessing Motivational Interviewing 2.0: An illustration of software-supported coding schemes

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18th of June 2014, International Conference on Motivational Interviewing, Amsterdam

Agenda

1. Introduction: Process research in MI
2. Paper-pencil versus software-supported coding schemes
3. Lexical Coding: The Top-down and the bottom-up MISC
4. Point-by-Point reliability of the software-supported MITI
5. [Using software-support for behavior slicing]

Introduction: Using MI as a behavior change intervention

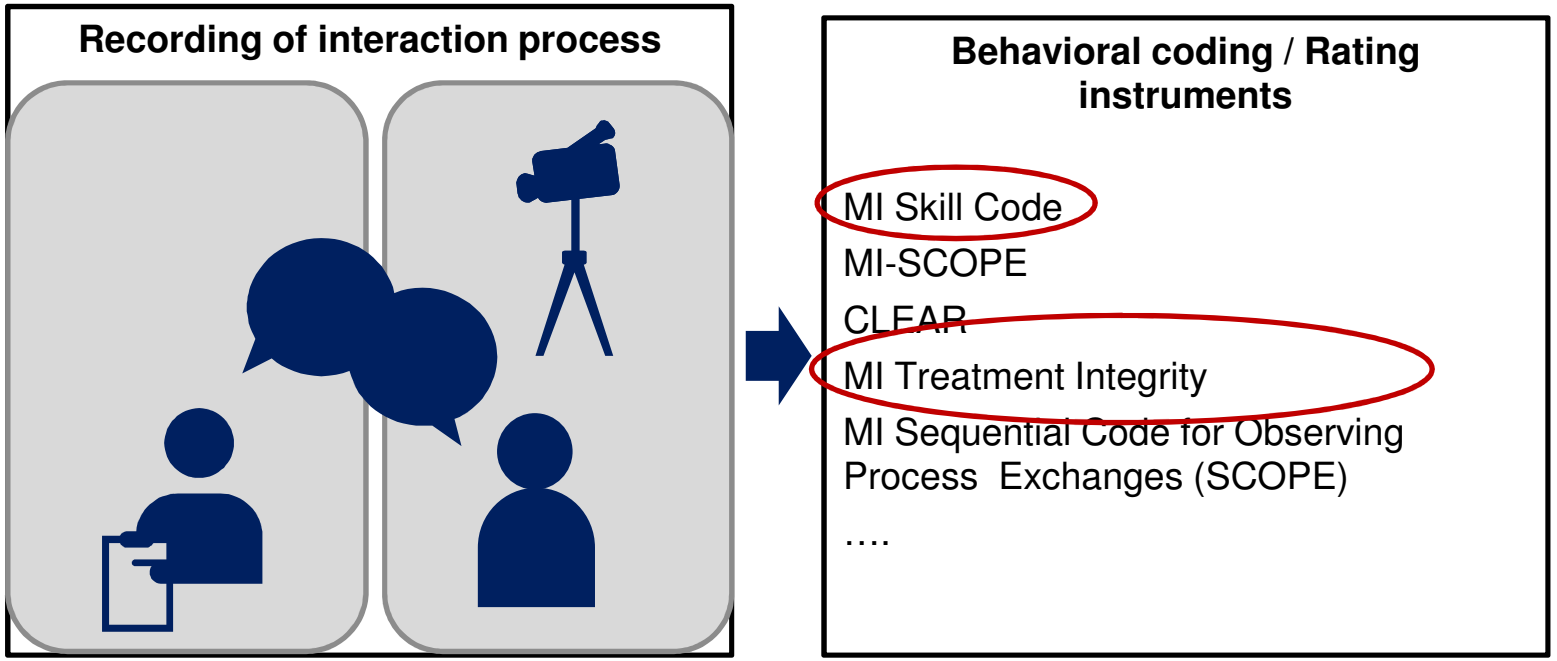
Motivational Interviewing (MI) has shown good empirical evidence in the treatment of **alcohol (and drug) consumption**.

Lundahl et al. (2010, p. 154): *We "have likely not yet found the limits of the types of problems (...) to which MI can be profitably applied"*.

Why not use MI to change **energy consumption** - and more generally **consumption** of environmental resources? (Klonek & Kauffeld, 2012)

Introduction: Process research in MI

Figure: Assessment of process dynamics in MI research



Several observational coding / rating instruments have been developed for different research purposes (for an overview; Madson & Campbell, 2006; Manuel, Moyers, & Houck, 2012)

Paper-Pencil assessment with the MI treatment integrity

The *Motivational Interviewing Treatment Integrity Scale*

Giving Information		𝍸 𝍸 ||	12
MI Adherent	**Asking permission, affirm, emphasize control, support.**	𝍸 𝍸 𝍸	15
MI Non-adherent	**Advise, confront, direct.**	𝍸 𝍸	10
Question (subclassify)	**Closed Question**	𝍸 𝍸 𝍸	15
	Open Question	𝍸 𝍸 𝍸 𝍸	20
Reflect (subclassify)	**Simple**	...	
	Complex		
	TOTAL REFLECTIONS:		

First sentence:_____

Last sentence:_____

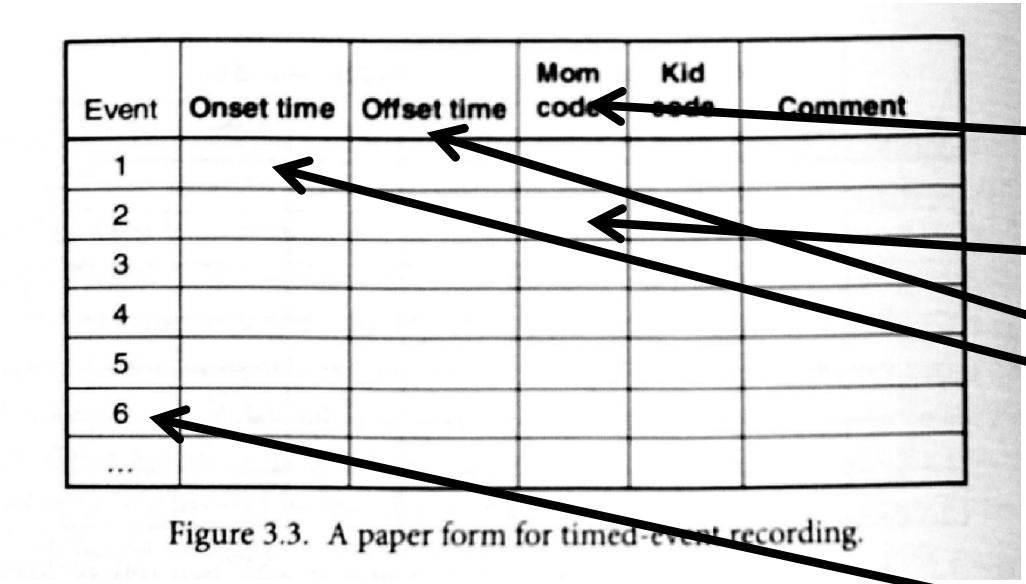
Tallying Behaviors

No Time information. No sequential information.

Reference: Moyers, Martin, Manuel, Miller & Ernst (2010). *Revised Global Scales: Motivational Interviewing Treatment Integrity 3.1.1 (MITI 3.1.1.)*

Software-Supported observational instruments

Paper-Pencil Sheet for observational scheme (for timed-event data)

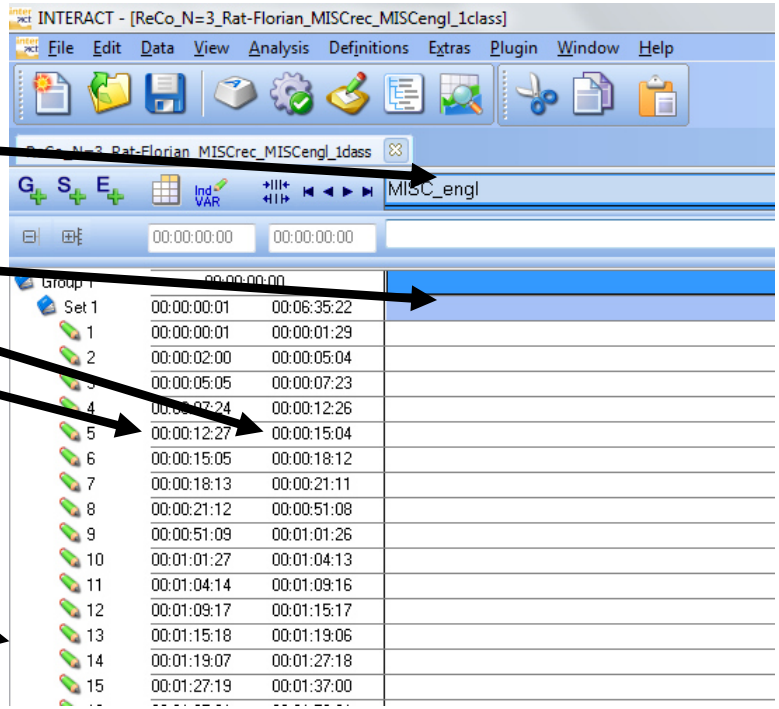


Event	Onset time	Offset time	Mom code	Kid code	Comment
1					
2					
3					
4					
5					
6					
...					

Figure 3.3. A paper form for timed-event recording.

Reference: Bakeman, R., & Quera, V. (2011). *Sequential analysis and observational methods for the behavioral sciences*. Cambridge University Press.

Example of a software-supported coding scheme (Computer Interface)



Mangold. (2010). INTERACT quick start manual V2.4: Mangold International GmbH. Retrieved from: www.mangold-international.com

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Some advantages of software-supported coding instruments

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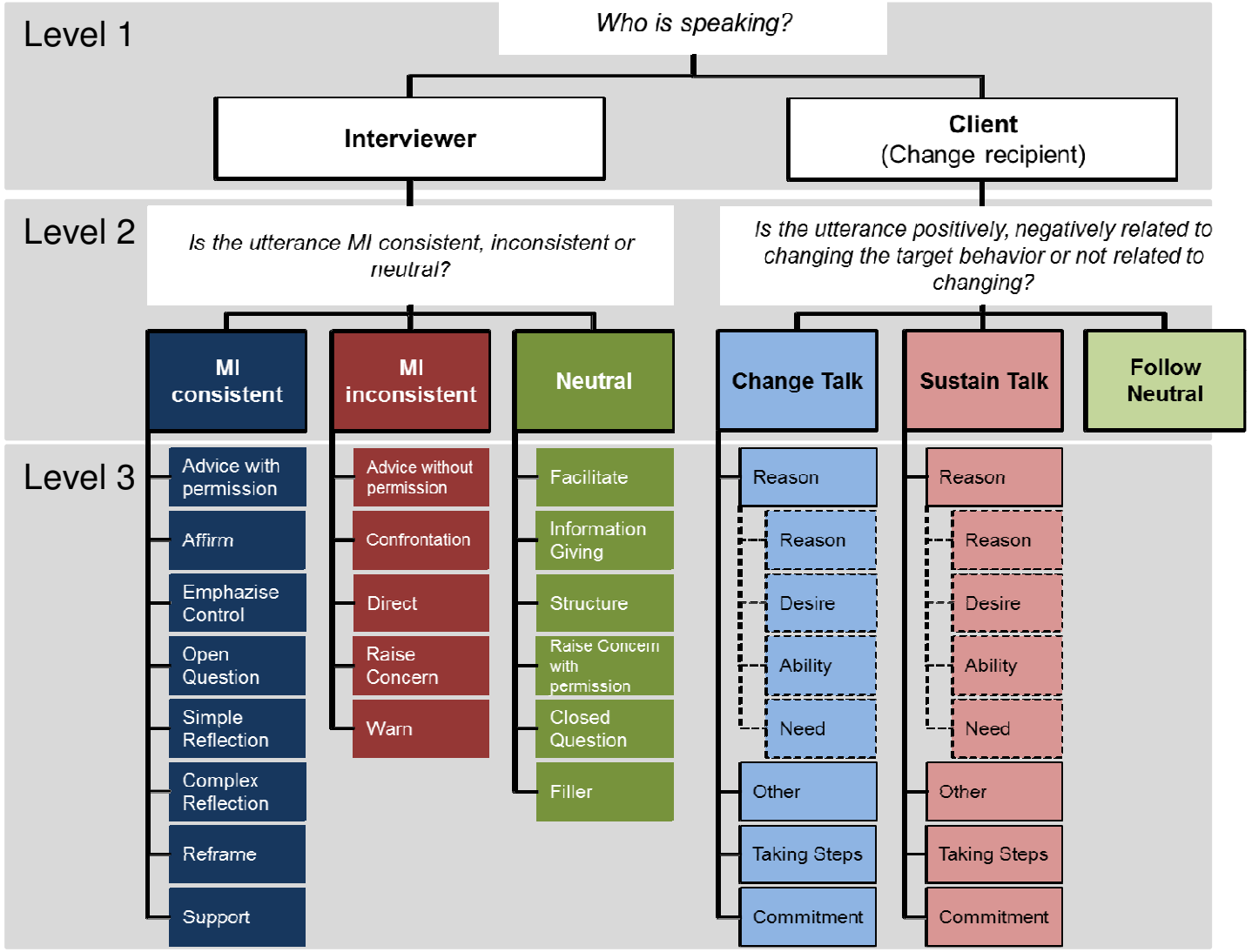
The Motivational Interviewing Skill Code – an hierarchical coding instrument

Figure: Hierarchical Structure of the MISC



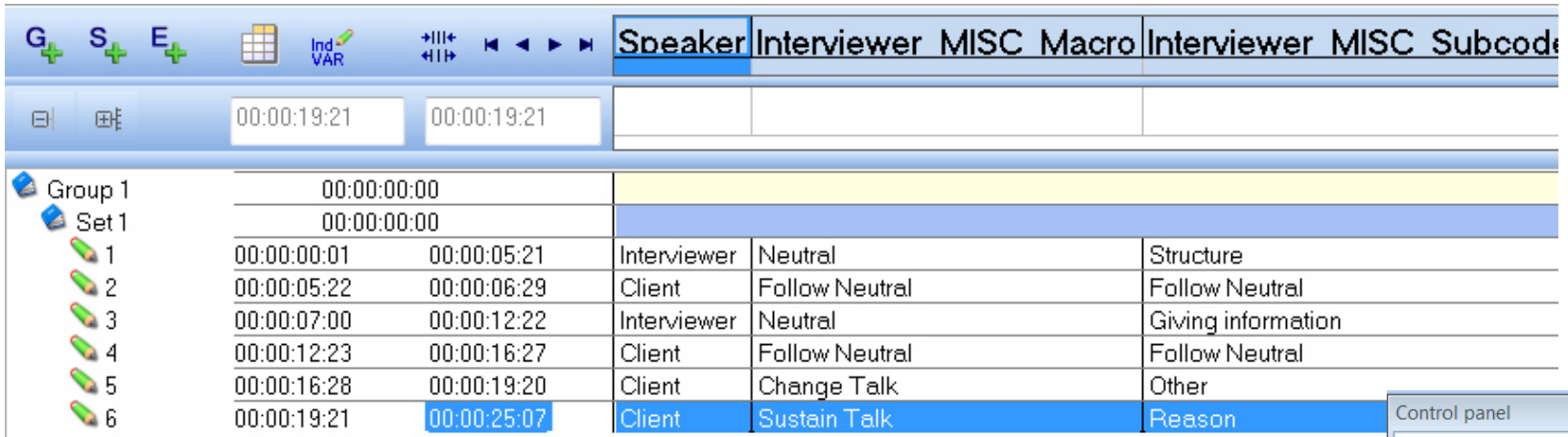
Codes can be aggregated into code classes (e.g., Gaume, Gmel, Faouzi, Daeppen, 2008; Klonek, Lehmann-Willenbrock, 2014)

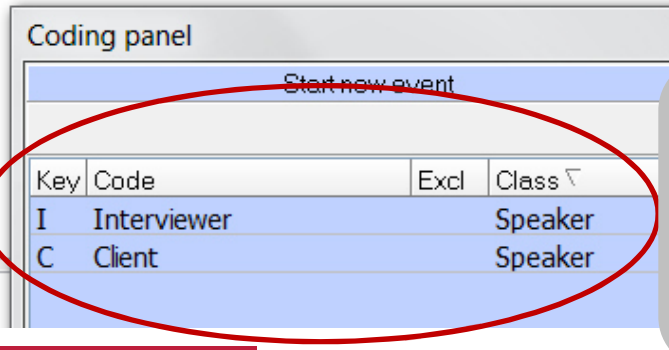
Top-Down approach:

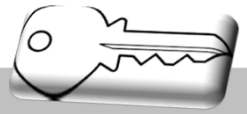
Coding follows a decision tree from general decisions to specific ones

Hierarchical MISC (i*key*-files for ‚new' observers)

Described in (Klonek & Kauffeld, 2012c) and currently used for coding of 42 peer interactions about environmental behavior change.







Coders can use coding panel to allocate codes (➔ visibility of codes; reduction of cognitive load)

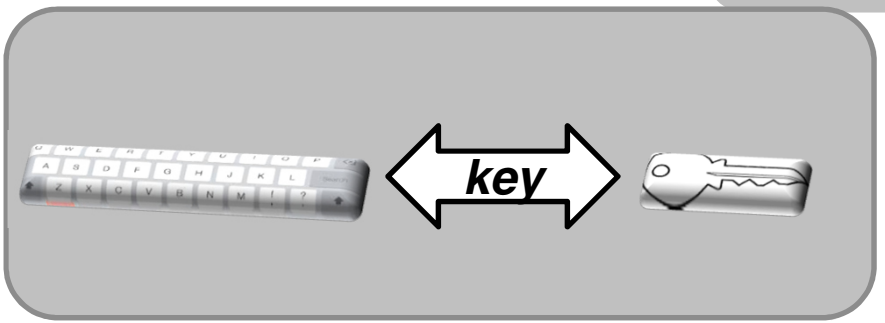
Bottom-up MISC (i*key*-file for ‚expert' observers)

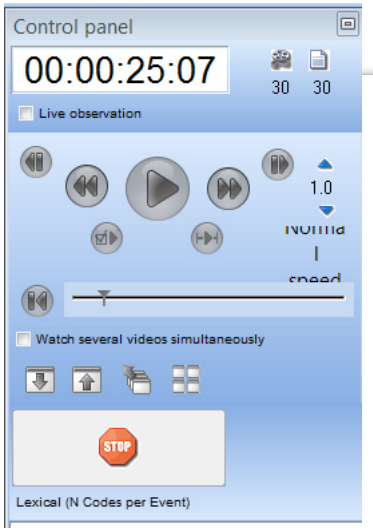
Used in a *sequential analysis* study with 28 peer interactions (N = 1080 transitions; Klonek, Lehmann-Willenbrock, & Kauffeld, 2014)

Sprecher	MISC_engl	MISC_engl_abr	Klient	Interviewer_H	Interviewer	Klient-Subcode	Zusatzcodes	Ex
s	taking steps against Change	ts	Sustain Talk			unternommene Schritte-		

Group 1	00:00:00:00								
Set 1	00:00:00:00								
1	00:00:25:15	00:00:26:22	t	Confront	CO		MI IN-konsistent	Konfrontation	
2	00:00:26:23	00:00:30:26	T	Structure	ST		Neutral	Strukturierung	
3	00:00:30:27	00:00:32:06	c	Closed Question	QUC		Neutral	geschlossene F	
4	00:00:32:07	00:00:39:27	S	Taking Steps for Change	TS	Change Talk			Unternommene Schritte+
5	00:00:39:28	00:00:44:04	s	taking steps against Change	ts	Sustain Talk			unternommene Schritte-

Coders use these keys (shortcuts) on the keyboard to allocate a code





Advantage No. 2: Calculation of Point-by-Point agreement

The problem of summary versus point-by-point agreement in MI (Klonek, Quera, & Kauffeld, in prep.)

	Stream of interaction			**Sum**
	Behavioral Event 1	*Behavioral Event 2-n*	*Behavioral Event 180*	*180 Events*
Coder 1				1 closed question 1 simple reflection
Coder 2	Simple Question			1 closed question 1 simple reflection

The **sum of codes** per session is used to calculate the Intra-Class Correlation between a pair of observers (Cicchetti, 1994).

In this example: It looks as if both coders have perfect agreement!

Advantage No. 2: Calculation of Point-by-Point agreement

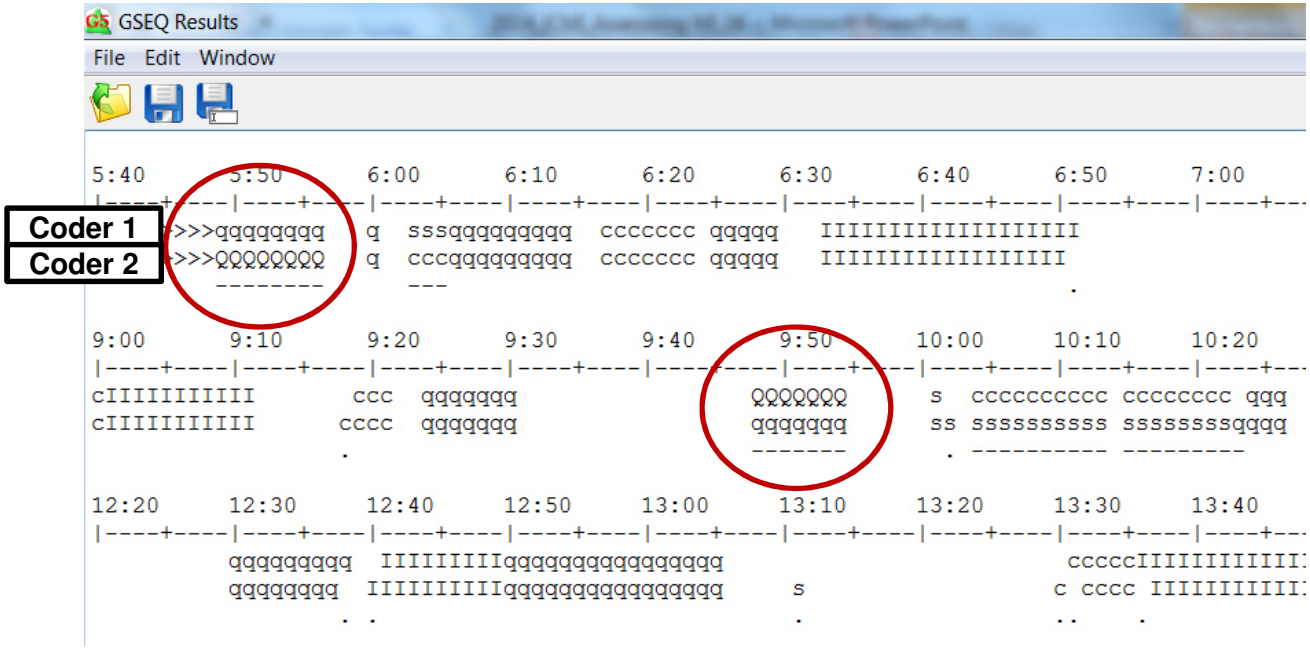
The problem of summary versus point-by-point agreement in MI (Klonek, Quera, & Kauffeld, in prep.)

	Stream of interaction			**Sum**
	Behavioral Event 1	*Behavioral Event 2-n*	*Behavioral Event 180*	*180 Events*
Coder 1	closed question	….	simple reflection	1 closed question 1 simple reflection
Coder 2	simple reflection	….	closed question	1 closed question 1 simple reflection

However, point-by-point agreement is not correct! This would be indicated by the point-by-point / Event alignment Kappa coefficient (Bakeman, Quera, & Gnisci, 2009; Bakeman & Quera, 2011)

Analysis: Caculation of Point-by-Point agreement

Figure: Double-coded session with the software-supported MITI-d using GSEQ (Bakeman & Quera, 2011)



Code abbreviations

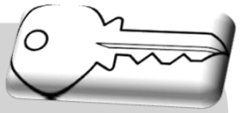
I = Giving information
q = closed question
Q = open Question
s = simple reflection
c = complex reflection
M = MI adherent
m = MI inadherent

Results: Point-by-Point versus Summary Agreement

Summary (ICCs) and Point-by-Point Agreement (Kappas) for the Software Version (n = 14 double-coded sessions, Klonek, Quera, & Kauffeld, in prep.)

	Summary Scores	Point-by-Point Agreement
MITI Behavioral Code	**ICCs (CI)**	**Kappa (TU)**
Giving information	.98 (.93-.92)	**.83**
Closed questions	.94 (.82-.98)	**.82**
Open questions	.91 (.74-.97)	**.80**
Simple reflections	.78 (.44-.92)	**.48**
Complex reflections	.91 (.71-.97)	**.66**
MI adherent	.72 (.31-.90)	**.62**
MI non adherent	.61 (.14-.85)	.28

Summary



Tayloring „keys“ for observation purposes

- Currently, we have developed “ikeys” for software use (1-month test version; keyword “Software MITI”; Klonek & Kauffeld, 2012)
- Hierarchical MISC: applies a *lexical chaining* system ←→ good for *unexperienced* coders, very good for creating in-depth MI coding schemes (e.g., MI techniques)
- Bottom-up MISC: coding scheme for *expert* coders (used in: Klonek, Lehmann-Willenbrock, & Kauffeld, 2014)

(-) Commercial software

Automatic recording of time and sequential information

- Illustration of point-by-point agreement and calculation of point-by-point agreement indices, e.g, Time-Unit Kappa (Bakeman & Quera, 2011; Klonek, Quera, & Kauffeld, in prep.)
- Visibility of sequential information for coders (“higher feeling of accuracy during coding”)

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Thank you for your attention

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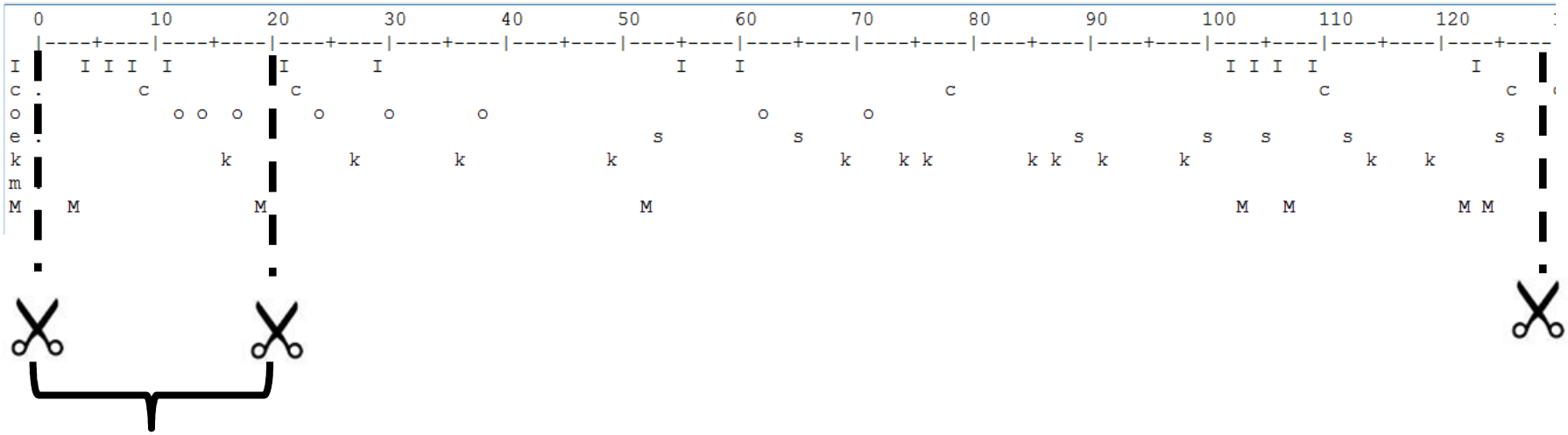
Behavior Slicing

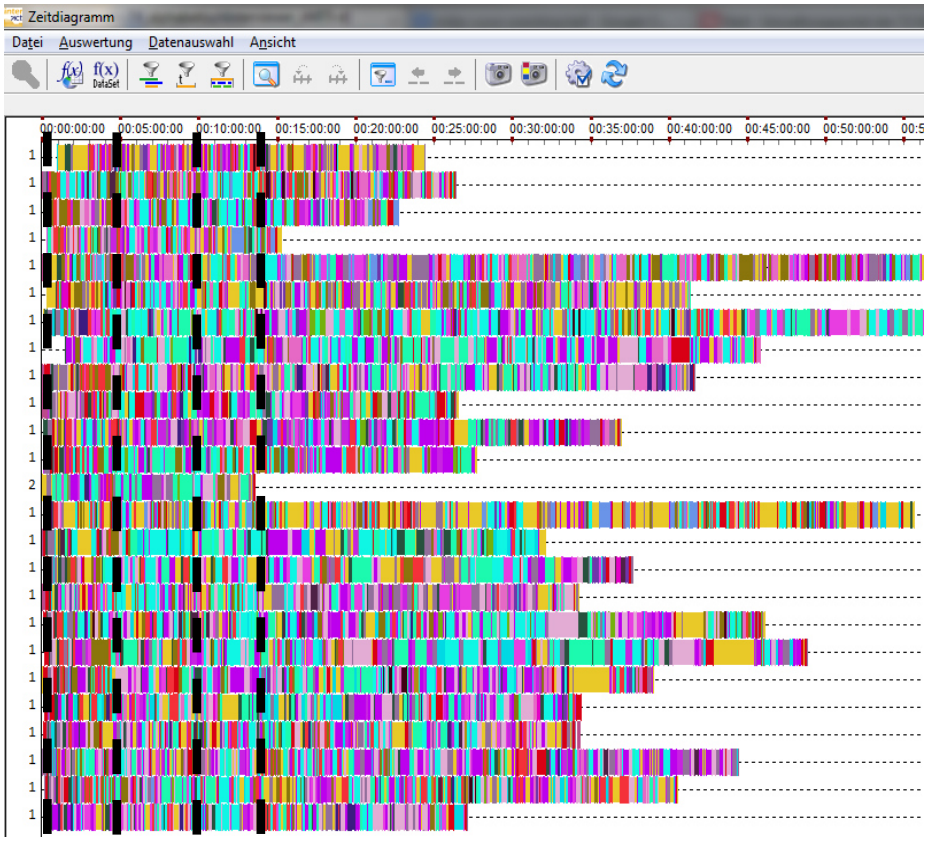
Advantage No. 3: Behavior Slicing

Behavior Slicing Method (Waller et al., 2013)

Figure: Allocation of MITI-d codes for a single session with 130 behavioral events



Analysis

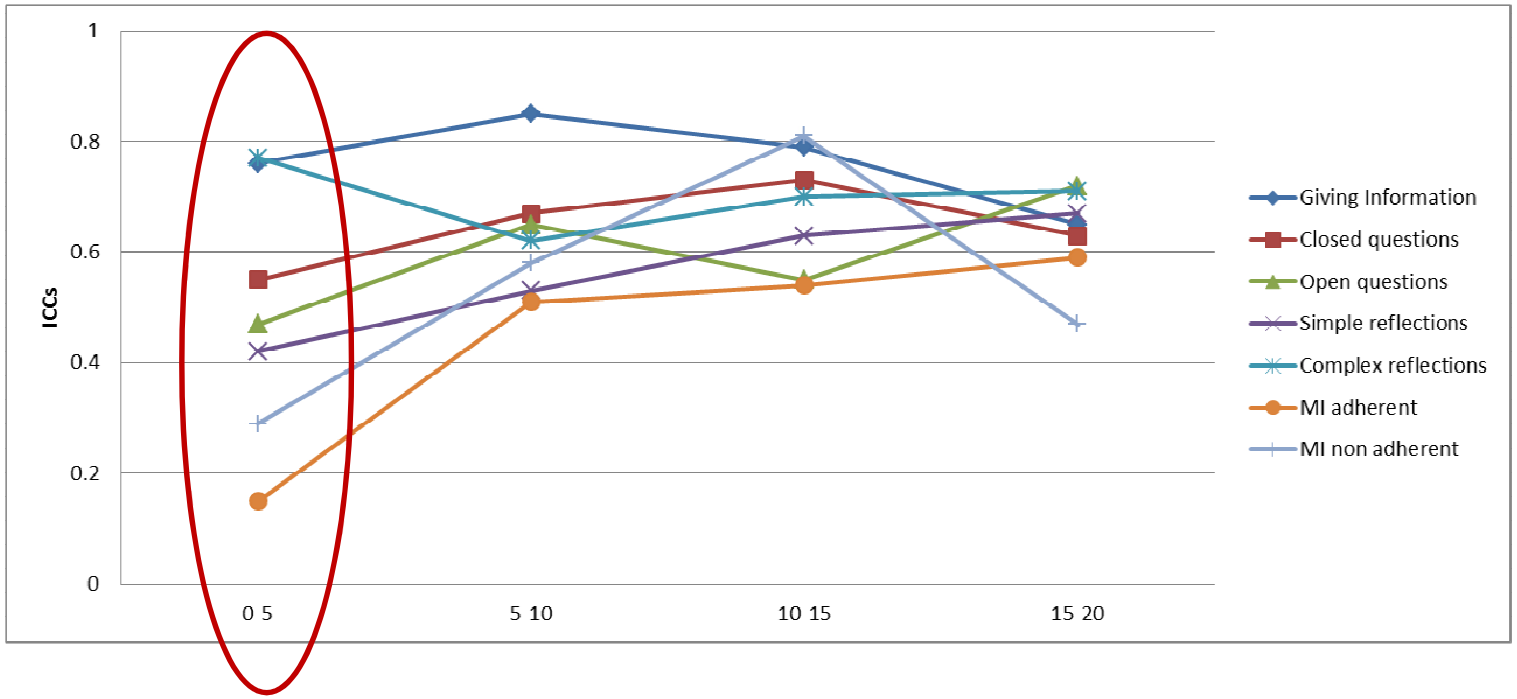


1) We sliced the first 5 minute intervalls from the first 20 minutes from a subsample (n = 26).

2) We computed ICCs between summary codes obtained from the slices and the summary code for the entire sesssion (Klonek, Quera, & Kauffeld, in prep.)

Results

Figure: Intra-Class Correlations between MITI-d summary codes slices of 5 minute intervalls and the MITI-d codes for entire session



Free Software Test Version for MI researchers

- Basic version (with all functionalities; 30 days)
- sales@mangold-international.com
- www.mangold-international.com/en/contact-us.html
- Keyword: *Software MITI*

- Three video demonstrations („The energy manager“: A – C)
- Three different ikeys (MITI, Hierarchical, Bottom-up MISC) with English codes
- 9 „.iact“ files (3 per „ikey)

The energy manager_A_Cod-AW_BottomupMISC_00-05

			MISC_engl	MISC_engl_abr	CLEAR	Sprecher_letter
Group 1	00:00:00:00		The energy manager_A_Cod-AW_BottomupMISC_00-05			
Set 1	00:00:00:00					
1	00:00:00:01	00:00:05:12	Giving Information	GI		I
2	00:00:05:13	00:00:06:14	FollowNeutral	FN	Neutrales Folgen	0
3	00:00:06:15	00:00:12:16	Giving Information	GI		I
4	00:00:12:17	00:00:16:19	FollowNeutral	FN	Neutrales Folgen	0
5	00:00:16:20	00:00:19:15	Other Talk for Change	O	Change Talk	A
6	00:00:19:16	00:00:25:01	reason against Change	r	Sustain Talk	g
7	00:00:25:02	00:00:30:22	Confront	CO		t
8	00:00:30:23	00:00:32:05	Closed Question	QUC		c
9	00:00:32:06	00:00:39:22	Taking Steps for Change	TS	Change Talk	S
10	00:00:39:23	00:00:43:23	taking steps against Change	ts	Sustain Talk	s
11	00:00:43:24	00:00:51:14	Confront	CO		t
12	00:00:51:15	00:00:53:22	Taking Steps for Change	TS	Change Talk	S
13	00:00:53:23	00:01:04:13	reason against Change	r	Sustain Talk	g