Conducting Consistent Laddering Interviews Using CLAD

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Abstract

Consistent Laddering is an interviewing technique that is build on top of Laddering technique, which has been used most often in psychotherapy, consumer research, and knowledge acquisition. This paper points out distinctions and advantages of Consistent Laddering over the original technique, as well as some difficulties that concern both techniques. The main purpose of this article is to show how Consistent Laddering interviews are conducted, and how measures employed in this technique are used to detect difficulties that can occur in an interview. Because it is not possible to conduct Consistent Laddering interviews without a computer program, corresponding software, named CLAD, has been developed.

1 Introduction

Consistent Laddering (Korenini, 2012) is a semi-structured qualitative interviewing technique that is build on top of Laddering technique which was devised by Hinkle (1965). Hinkle's Laddering was originally used in clinical settings, but started to gain popularity in 80's, also in consumer research (see e.g. Reynolds et al. 1984, 1988, Walker et al., 1991), and in knowledge acquisition (see e.g. Corbridge et al., 1994, Bourne et al. 2005). Laddering and Consistent Laddering are semi-structured interviewing techniques in a way they involve repeatedly asking a form of "Why?" question which is based on an answer previously obtained from the participant. Because of the way questions are asked participant's answers form a hierarchy.

Consistent Laddering aims at mitigating some short comings in Laddering technique and improving validity in laddering interviews. To achieve this, an initial assumption is made that a participant is consistent in his/her answers. If an inconsistency is found during the interview, interviewer is instructed to ask additional questions. While being consistent participant may just appear inconsistent in his/her answers because not all relevant data was collected, because

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of a misunderstanding, etc. Clarifying these issues may result in further insights into participant's construing. Initial assumption regarding participant's consistency may, of course, be proven wrong.

2 Laddering and personal construct psychology

Both techniques, Laddering and Consistent Laddering, are grounded in Personal Construct Psychology which is a complex but well structured theory. It originates in the work of George Kelly, published in mid 50's. At the heart of Kelly's theory (1955/91) lays a conception of personal constructs that are bipolar abstractions of events, and serve individuals for discrimination, e.g. "tall" vs. "short". Another property of constructs is that they are applicable to only a finite set of elements, where elements can be people, objects, ideas, etc. In other words, constructs have a range of convenience, and when applied to elements that lie outside this range, they are found irrelevant, e.g. one may apply construct "tall" vs. "short" to elements such as people, or objects, but not to, let's say, different weather conditions (ibid. 48). In this way, while constructs always operate within a context, they cannot be applied throughout the range of person's perceptual field.

An important aspect of Kelly's theory is that a construct may subsume another construct as one of its elements (ibid.: 40). This property of constructs has been further explored in Hinkle's (1965) work on hierarchical organization of personal constructs, and put in use within his Laddering technique.

3 Hinkle's Laddering technique

Hierarchical organization of personal constructs can be examined by a technique called Laddering, which was devised by Hinkle (1965). This technique starts from a set of initial constructs that has been elicited from elements agreed with a participant. One of initial constructs is considered and participant's preference for that construct pole is determined. The two poles of a constructs are called preferred and opposite pole. After the preferred pole of the construct in question has been determined, the participant is asked about his/her reason for this preference, using a form of the "Why?" question, e.g. "Why is it important to you to have wide range of expertise?" Participant's answer to this question represents a new construct that is superordinate to the initial one. Preferred and opposite poles are determined for newly elicited construct. This cycle, consisting of determining preferred and opposite pole, followed by a form of "Why?" question regarding the preferred pole, continues until the participant can no longer provide an answer to

this question. In this way a ladder² of constructs gets elicited. An example of such ladder is presented in Figure 1. Procedure is repeated for each of the initial constructs elicited from elements. Ladders of constructs may converge or diverge (Hinkle, 1965: 34).



Figure 1: An example ladder of constructs conducted on a topic of job opportunities, starting from a construct "Wide area of expertise" vs. "Narrow area of expertise". Letter

"P" indicates preferred pole, and letter "O" the opposite pole of a construct.

4 Consistent Laddering

Consistent Laddering follows procedures of the original Laddering technique. It employs elicitation of constructs of increasing level of abstraction using a form of the "Why?" question, starting from constructs elicited from a set of elements in the same way as in Laddering technique.

At the same time, Consistent Laddering goes beyond original technique, to provide ground for a more valid approach to laddering.

While it still remains focused at elicitation of constructs of increasing abstraction, i.e. laddering upwards, it also incorporates the Laddering Down technique, proposed by Bannister and Mair (1968), and later elaborated by Jankowicz (2004). This technique, which is used to elicit subordinate constructs by using a form of "In which way?" question, is meant to be used in Consistent Laddering in situations where elicited constructs don't provide satisfactory insight into participant's anticipation of superordinate constructs. In this way, Consistent Laddering combines two procedures: laddering up, and laddering down.

In contrast to Laddering technique, Consistent Laddering is designed to obtain ratings of elements on constructs elicited in an interview, and to collect data about

² Within this article, a ladder of constructs is defined as a path from most subordinate to the most superordinate construct in the network of elicited constructs.

the importance a participant places on constructs in the context of their direct successors (Korenini, 2012). Ratings of elements on elicited constructs represent attributive data in a network of constructs, while ratings of importance represent the relational data. In this way network of constructs as established in a Consistent Laddering interview is an acyclic valued directed graph, with attribute data measured on each node in the network.

Structural and compositional data collected in an interview can be used for calculations of measures, which can be inspected by the interviewer during the interview, with the purpose of detecting possibly problematic parts in the interview that should be discussed further with the participant. What follows is a short description of main measures employed in Consistent Laddering.

4.1 Error of anticipation

The concept of error of anticipation is grounded in an idea, that a person is consistent in his/her anticipation if the following holds true. A person, who is anticipating construct Y only from construct A (t.i. a ladder consists of an ordered pair of constructs $A \rightarrow Y$, with preferred poles A+, and Y+, and opposite poles A-, and Y-) and places an element in A+ also places this element in Y+, or places it in Y-, if s/he placed it in A-. In other words, a person is consistent if an element is placed in matched poles of constructs that form an ordered pair. For example, if constructs elicited in an interview are: (A) "wealthy", vs. "not wealthy", and (Y) "expensive clothes" vs. "inexpensive clothes", and Y is anticipated only from A by the participant, s/he is consistent in his/her answers if an element is described by matching poles of both constructs, e.g. s/he expects that a particular person who is wealthy wears expensive clothes, as illustrated in Figure 2a.

Where a participant uses more than one construct for his/her anticipation s/he can be consistent even when an element is not placed in matching poles on all constructs in question. For example, there are two ordered pairs of constructs, $A \rightarrow Y$ and $B \rightarrow Y$. A participant may still be consistent in his/her anticipation, if s/he places an element in A+, and Y-, if s/he also places this element in B-, and considers B as more important than A for anticipation of Y. The participant from previous example may be considered consistent if wealthiness (A) is not the only construct that is used for anticipation of the superordinate construct about the clothes (Y). There may be another construct (B) "stingy" vs. "not stingy" that the participant uses in this regard. The participant is considered consistent, if s/he says that a person is wealthy, but is expected to wear inexpensive clothes, if the participant also perceives this person as stingy, and importance of stinginess outweighs importance of wealthiness for participant's anticipation, as illustrated in Figure 2b.



Figure 2: Two examples of consistent anticipation.

The main point made here is that expectations about placement of elements on an anticipated construct can be formed under assumption that a participant is logically consistent in his/her answers. The more dissimilar expected and actual ratings are, the more inconsistent the person is in his/her answers.

Placement of elements in poles of a construct can be also seen as rating them on a dichotomous scale that corresponds to construct poles. In Consistent Laddering interviews several elements are most often considered, and in most cases multi-point, e.g. 5-point, or 7-point, rating scales are preferred over 2-point rating scales. The idea of consistency of anticipation applies here as well, as exemplified in Figure 3.



Figure 3: An example of consistent anticipation when elements a, b and c are rated on an ordered pair of constructs $A \rightarrow Y$.

(Dis)similarity between expected and observed ratings of elements on an anticipated construct represent a basis for identification of inconsistency in participant's anticipation (Korenini, 2012). In calculations Minkowski distance of order 3 is used as a measure of (dis)similarity. In our case this measure of similarity is preferred over Minkowski distance of lower order, t.i. Manhattan, or Euclidean distance. The reason for this preference lies in a property of Minkowski distance. For two units x and y, represented by numerical variables, $x=(x_1, x_2, ..., x_m)$ and $y=(y_1, y_2, ..., y_m)$ Minkowski distance of higher order exposes larger differences between $|x_i - y_i|$ to a higher degree (Doreian et al., 2005:139). This

property of Minkowski distance of higher order is exactly what is desired in this case, because expected ratings can be calculated to a greater precision than elements can be rated on a rating scale by the participant. Error of Anticipation (EA) is calculated as a ratio of the value of (dis)similarity measure between expected and observed ratings for the anticipated construct, and maximal value of this measure for a given set of elements considered in the interview, and is defined on an interval from 0 to 100 (see Korenini, 2012).

In case dissimilarity between expected ratings and ratings stated by a participant is found during an interview, high value of *EA* may alert the interviewer to check for causes of this inconsistency. This kind of inconsistency may happen for various reasons, because a participant really is inconsistent in his/her answers, because the participant was misunderstood by the interviewer, because verbal labels for a construct were ill-defined by the participant, etc., or because the participant also uses some other, not yet considered, constructs for anticipation of the superordinate construct in question.

4.2 (Dis)similarity of direct successors and predecessors

Detection of direct successors, or direct predecessors, of a given construct that are either very similar or excessively dissimilar regarding the ratings of elements is of interest in Consistent Laddering, because this may lead to identification of equivalent constructs or to some issues that are discussed later in this article.

Consistent Laddering employs a simple measure called Similarity of Direct Successors of a Construct (*SDSC*), which is a ratio of distance between two constructs, and maximal theoretical distance between them, calculated from standardized ratings of elements on these constructs. Again, Minkowski distance of order 3 is used as a measure of (dis)similarity. SDSC is defined on interval from 0 to 1, where small values of this measure indicate similarity between constructs. When *SDSC* is calculated for every pair of constructs that belong to a set of direct successors of a construct, the smallest and the highest value of this measure my be of interest to the interviewer.

A similar measure, called Similarity of Direct Predecessors of a Construct (*SDPC*) applies to direct predecessors of a given construct.

When *SDSC*, and *SDPC* are used to detect excessively dissimilar direct successors or predecessors, this measures must be interpreted with caution, since they can produce false positives. It follows from the work of Bieri (1955) that variety of constructs a person employs in a given situation indicates his/her cognitive complexity, therefore high values of both measures may also occur for this reason. However, high values of the discussed measures could also be a result of an administrative error, misunderstanding, an ill-defined construct, etc.

4.3 Inspecting triads of constructs for (im)balance

Consistent Laddering also relies on detecting logical inconsistency in the network of constructs by inspecting triads of constructs for (im)balance. Checking triads of constructs for (im)balance has already been in use in Repertory Grids (see Slade et al. 1975, Bassler et al. 1992), a research technique that also belongs to the field of personal construct psychology, and is mainly used for the purpose of psychotherapy. It has been introduced to the field of personal construct psychology by Slade et al. (1979), who modelled their approach after Lauterbach's (1975) technique for assessing psychological conflict, and Heider's (1946) initial work on balance theory. Neither the technique proposed by Slade et al. (1979), nor later variants of this technique, has been used in Laddering. An approach, similar³ to the one devised by Slade et al. (ibid.), is used in Consistent Laddering to determine the magnitude of (im)balance in a triad of constructs. It is recognized that triads of constructs may be imbalanced because of psychological conflicts, e.g. because participant's construct system is fragmented, which means that s/he is using constructs that belong to construction subsystems that are incompatible with each other (Kelly 1955/91:58-63). On the other hand, it is also possible that constructs in the network may exhibit this kind of logical inconsistency because the participant was misunderstood, because a construct has been defined in an unclear manner, etc., therefore the interviewer should check with the participant that imbalance didn't occur for these reasons.

5 CLAD - software for conducting Consistent Laddering interviews

The discussed measures cannot be calculated during an interview without a computer program. Therefore special software has been developed by the author of this article, to support the interviewing process.

This software, named CLAD, has a web interface, and can be accessed at Internet address http://clad.korenini.net/.

CLAD can be used from beginning of the interview on, where a topic of the interview, and elements are agreed with the interviewer. Verbal labels for constructs can be entered into CLAD as constructs are elicited in an interview. Likewise ratings of elements on these constructs and subjective importance a participant places on constructs in the context of their direct successors is to be entered in CLAD during the interview. CLAD performs basic checks, regarding

³ While the approach designed by Slade et al. (1979) relays on correlation between pairs of constructs and uses sign-product rule to determine (im)balance of a triad, Korenini's approach (2012) relays on a Minkowski distance of order 3 between pair of constructs, and employs an approach modelled after Mohazab et al. (1985) to determine magnitude of imbalance in a triad of constructs. See Korenini (2012) for more detailed information.

consistency of constructs in the network, every time a new tie is created between two elicited constructs, e.g. a warning is issued when a semicycle is detected in the network of constructs.

Calculation of measures discussed in this article is available to the interviewer upon request, such as calculations regarding error of anticipation, (im)balance found in triads of constructs, (dis)similarity of direct successors or predecessors of a construct. These measures can be used by the interviewer to focus on constructs and ties between them where additional questions should be asked in order to better understand the participant.

CLAD can also provide various graphical representations⁴ of the network of elicited constructs, as exemplified in Figure 4, that can be used for interviewers guidance or they can be used when an interviewer or a participant wishes to discuss difficulties that may occur during the interview.



Figure 4: An example of graphical representation of a weakly connected component containing a selected construct in CLAD.

⁴ It should be noted that for the sake of clarity of graphical representation ties between construct poles are not made explicit. Since these ties are assumed to lie in parallel, constructs, and not construct poles, are treated as network nodes.

6 Issues in Laddering and Consistent Laddering

Since Consistent Laddering is build on top of the Laddering technique, it suffers same issues as Laddering. These have been documented by other authors, and ways of addressing these issues have been provided, e.g. Walker et al. (2012), Fransella (2003), and will therefore not be discussed here. On the other hand, because of the way a Consistent Laddering interview is carried out, and because additional data is collected, several new issues emerge. These issues also concern the Laddering technique, and most of them have not been addressed previously.

6.1 A change of the subject of conversation

In a Laddering interview, when asked about a reason for a preference of a construct pole, using a form of the "Why?" question, a participant may change the subject of conversation. The change in the conversation may be slight, so that it still fits the topic of the interview, but has little to do with the construct at the beginning of the ladder. For example, when conducting an interview on the topic of winter sports, and discussing weight of the equipment that is used in these sports, the participant may change the subject to the weather up north. This may still fit the topic of the interview, but may not be connected to the ladder that starts from the weight of the equipment. This type of difficulty has been described in the context of Laddering technique by Grunert et al. (1995), who say that it may appear in situations where participant's associations between cognitive categories are especially weak, and can be identified by pausing, breaks and unfinished sentences. Because in Consistent Laddering strength of causal associations between cognitive categories, t.i. constructs, is measured, interviewer may be alerted to such situations by low values of importance attached to ties that lead to superordinate constructs. In addition to that, the constructs that were elicited before and after the subject of conversation has been changed belong to different contexts, therefore ratings of elements on anticipated construct may be very different from expected ratings. Because of this, an interviewer may be alerted to the change of subject in a conversation by high values of EA.

Sometimes a change of subject may be so severe that investigated elements lie outside the range of convenience of the elicited construct. Interviewer may become aware of this difficulty when the participant is not able to rate elements on an elicited construct.

When the discussed issue occurs in an interview, the interviewer should trace back to the last eligible construct and start laddering from there, disregarding ineligible constructs.

6.2 Missing subordinate constructs

Laddering technique starts from constructs elicited from elements. A difficulty of Laddering technique is that it rests on an unwarranted assumption that the list of constructs elicited from elements is complete, t.i. that all most relevant constructs, as a participant sees it, are included in this list. This is concluded from the fact that Laddering is directed only at elicitation of superordinate constructs, and not at elicitation of subordinate constructs. An additional difficulty is that Laddering doesn't include any means upon which an interviewer could make a distinction between constructs that are most relevant for participant's anticipations and the ones that are marginal in this regard.

A situation can occur where some constructs that are not most relevant for participant's construing of the topic in question are elicited from elements, while some highly relevant constructs are not. When laddering up from a construct that is of little relevance, the interviewer can fail to notice that there are other more relevant constructs that participant uses for anticipation of a superordinate constructs. Because of this, a network of elicited constructs may resemble a situation where someone's idea of driving a car safely is described as consisting only of checking the rear-view mirror. Since Laddering technique is directed only at elicitation of constructs of increasing abstraction, and doesn't instruct an interviewer to check for relevant subordinate constructs, this difficulty can occur at any level of construct hierarchy.

In Consistent Laddering high values of *EA* connected to an anticipated construct may alert the interviewer about the possibility that a relevant construct didn't get elicited. The interviewer should ladder down from the construct in question to see whether participant uses any other relevant constructs for anticipation.

6.3 Similar construct verbal labels

What the interviewer gets from a participant in a Laddering interview, or any other technique used in the field of personal construct psychology, are not constructs, but just verbal labels attached to them (see e.g. Kelly, 1955/91, Fransella et al., 2004). A participant may attach verbal labels to elicited constructs in a way that they appear similar to the interviewer, while they are in fact different. Interviewer may therefore bring erroneous decisions about convergence of ladders, where the constructs in question in fact belong to very different ladders. After an interviewer merges two seemingly similar constructs, and tries to ladder up, further issues may accumulate since it is no longer clear which of the two constructs connects to a superordinate construct. Laddering technique offers no means, beyond interviewers' skills, which could help him/her to detect this issue. It is also very difficult to detect this situation in Consistent Laddering, because there is no single

measure that indicates it. However, an interviewer is instructed to consider the possibility that such difficulty has occurred when values of either *EA*, *SDSC*, or *SDPC*, are high. The interviewer should address the possible issue by discussing the ties that lead to and from the construct in question with the participant, in order to see if the verbal labels refer to the same construct.

6.4 Broadly defined verbal labels

When a participant is asked for a preference of a construct pole, and then for a reason for this preference, s/he may give a broad answer, such as "Because of the higher quality." Interviewer may fail to notice that the answer masks more specific reasons for participant's preference, which lie at the same level of construct hierarchy. The interviewer might try to ladder up from this construct, that hasn't been worked down to an appropriate level of detail. Results of this attempt may be various and unpredictable, ranging from situation where participant is not able to elicit any superordinate construct at all, because the preference appears selfunderstanding to him/her, to situation where only a broadly defined construct is elicited, because a broad question will provoke a broad answer, or situations where superficial constructs, that may belong to different contexts are elicited. The end result is likely to be a ladder consisting of constructs that will provide very poor insight into participant's construing of the topic. Because verbal labels for the construct in question are broadly defined, this construct is likely to subsume many other constructs, e.g. there are many ways in which objects can be of high quality, and construct will have high degree prestige in the network, t.i. high indegree will be observed for that construct. Since a broad definition of verbal labels may be suitable for subsuming very different constructs, construct adjacent to the construct in question are expected to be different in regard to ratings on elements on them, which will result in high value of SDPC measure. Once the issue has been identified the interviewer can encourage the participant to rephrase the verbal labels, and elaborate on the question what does this mean to him/her.

7 Basic procedure in Consistent Laddering

Since consistent Laddering is built on top of the Laddering technique, they have a lot in common from the point of the basic procedure of conducting interviews. There are many decisions to be made prior to the interview that depend on its purpose: who determines the topic of the interview, participant or the interviewer, which technique of elicitation of constructs from elements is preferred in the interview, etc. Discussion on this topic, which could go at much length, is outside of the scope of this article. What follows is a description of the basic procedure in Consistent Laddering.

1) Determine topic of the interview.

A narrowly defined topic should be agreed with a participant. It is very difficult to say how narrow the definition should be, because it involves participant's perspective. For example, the topic 'cars' is too broad for most people, because it can be interpreted in many different ways: car maintenance, driving comfort, etc. A narrower definition of the topic, such as 'driving a sport car' seems more appropriate, but not for a professional car racer, to whom it may appear very broad. A topic may be clarified and narrowed down by using qualifying phrases (Jankowicz, 2004: 28-9), which usually begin with 'in terms of ...', 'from the point of view of ...' (ibid.:35), e.g. "in terms of safe driving". Since Consistent Laddering interviews tend to be long in duration, and may last for more than two hours even for a narrowly defined topic, it is therefore very important that the topic of the interview is selected carefully.

2) Specify elements.

Elements can be chosen from many different classes. Elements can be objects, living things, social events, etc., but is very important, that selected elements are homogenous, that they are clearly differentiated, and defined units, where one element is not subset of another (Fromm, 2004:69), and that a chosen set of elements covers the whole field of the topic evenly (Jankowicz, 2004: 29).

3) Elicit constructs from elements.

In techniques used in the field of personal construct psychology a most common way of eliciting constructs from elements is triadic elicitation procedure. In this procedure a participant is presented with three elements at a time, and asked to identify important ways in which two of them are alike, but different from the third (Kelly, 1955/91:154).

4) Elicit constructs from constructs.

A new construct is elicited using a form of the "Why?" question that refers to the preferred pole of an already elicited construct. Participant is asked to name the contrast pole of the elicited construct.

5) Obtain ratings of elements on a construct.

Elements agreed in the beginning of the interview are rated on a rating scale, where verbal labels for that construct correspond to the extreme values on the rating scale. Usually 5-point or 7-point rating scales are used.

6) Obtain rating of importance of a construct.

Subjective importance of a construct is rated in the context of a direct successor of the construct in question. A 5-point rating scale is usually used for this purpose.

7) Check for consistency.

It is not recommended that these checks are performed each time after a construct is elicited, because this might interrupt the flow of the interview. It is suggested that they are performed after a ladder of constructs has reached its end, or when an opportunity arises that allows for a quick glance at the computer screen, e.g. when the participant pauses to think of a proper verbalization of a construct.

If an inconsistency occurs interviewer should perform additional checks, e.g. laddering down, in order to better understand participant's construing.

The interviewer should repeat steps 4 to 7, until a ladder reaches its end. The end of a ladder is reached when the participant is unable to produce more constructs in response to the "Why?" question (Fransella et al. 2004:39-40). The interview comes to an end when there are no more constructs that have been elicited from the agreed set of elements, from which a new ladder could be started.

8 Presentation of an example case

An example interview is presented here for the purpose of better understanding the procedures and measures employed in Consistent Laddering, and to show its distinctiveness, and advantages, in comparison to the Laddering technique.

The interview was conducted on the topic of "Textbooks for teaching Slovene as a second or foreign language". The topic was furthered narrowed down by a qualifying phrase "in terms of their advantages and benefits for students." In the interview participant, who was a teacher of Slovene language for foreigners, was supplied with four intermediate level textbooks as elements: "S slovenščino nimam težav" (a)⁵, "S slovenščino nimam težav 2" (b), "Odkrivajmo slovenščino" (c), and "Gremo naprej" (d). A 7-point rating scale was used for rating the elements on constructs. Elements were rated on every construct immediately after it was elicited. Subjective importance that participant placed on constructs in context of a superordinate construct, was rated on a 5-point rating scale. This data was obtained for every tie in the network. The scale was described by the labels provided in the following list, which also includes shortened labels that are used in graphical representations of network of constructs: 5 ("Very Important", "VI"), 4 ("Important", "IM"), 3 ("Moderately Important", "MI"), 2 ("Of Little Importance", "OLI"), 1 ("Unimportant", "U").

The interview is presented as a sequence of procedures that were used, and main decisions the interviewer had to make that influenced the flow of the interview.

⁵ The data obtained in this interview may be accessed online in CLAD, therefore shorthand notations, that correspond to those used in CLAD, are provided for elements, and construct labels.

1) After a short introduction and a brief explanation of the technique used in the interview, the participant was presented with elements.

2) Kelly's (1991/55:154-5) triadic sorting procedure was used to elicit constructs from elements. Three file cards, with names of the elements written on them, were presented to the participant at a time. She was then asked to identify important ways in which two of them are alike, and at the same time different from the third. All four 3-combinations of the set of elements were presented to the participant: (a,b,c), (a,b,d), (a,c,d), and (b,c,d). In this way four constructs were elicited in the following order: "Often (vs. rarely) addresses real life situations" ("RealL"), "The textbook develops language macro skills" vs. "The textbook focuses on a few language skills" ("LangS"), "Grammar structure is presented in a clear (vs. less clear) manner" ("ClStr"), "Presentation of grammar is often (vs. rarely) task based" ("GTask").

3) The laddering up procedure was started from the construct "RealL" which was the first elicited construct in triadic sorting procedure. In this way a superordinate construct "An efficient (vs. a less efficient) way of learning the language" ("Effic") was elicited. When the interviewer tried to ladder up from there, the participant was unable to provide a superordinate construct, and only gave superficial answers referring to the self-evident nature of the preference for a more efficient way of learning the language. The same situation was repeated over the three remaining constructs that were elicited from elements, each of them leading only to the construct about efficiency of learning the language, as shown in Figure 5. If this was a Laddering interview, it would have ended at this point since the participant could not provide any more superordinate constructs, and there were no constructs left from which new ladders of constructs could be started.



Figure 5: A network of constructs obtained in the interview if only Laddering, and not Consistent Laddering technique was used. Constructs are marked with numbers that show the order in which they were elicited.

4) Because the value of Error of Anticipation for the construct "Effic" was high (EA=36,47), the interviewer decided to ladder down from it. This resulted in elicitation of a subordinate construct with a preferred pole "Practical orientation"

takes priority over grammar structure" ("PracG"), but the value of *EA* didn't improve (EA=36,47). Again, laddering up from this construct lead only to the superordinate construct "Effic".

5) High value of *SDPC* (*SDPC*=0,81) indicated that participant's anticipation of "Effic" was based on constructs that were not similar in ratings of elements on them. This means that participant's anticipation is based on constructs that belong to different subsystems of constructs, but it can also mean that verbal labels for the anticipated construct are broadly defined. After ratings of elements have been checked with the participant, she was asked to be more specific about efficient way of learning the language. Broadly defined labels "An efficient (vs. less efficient) way of learning the language" were redefined into four more precisely verbalized constructs: "A simple (vs. less simple) way of learning new words" ("NewWo"), "A more efficient (vs. a less efficient) way of learning phrases" ("Phras"), and "A faster (vs. fast) way of learning grammar structures" ("FastG"). Ties between the constructs that took place of the ill-defined construct "Effic" and their predecessors were checked with the participant.

6) All four constructs that took place of "Effic" exhibited some degree of inconsistency regarding the error of anticipation. Largest value of EA was observed in case of "FastG" (EA=39,57). Using the laddering down procedure a subordinate construct "Often (vs. rarely) includes summary of grammar structures in lessons" ("SummG") was elicited, which resulted in a lower value of EA (EA=29,63). In a similar way error of anticipation was reduced in case of "CompS", where the value of EA decreased from 25,43 to 17,82 after an additional construct "Authentic texts are often (vs. rarely) included in lessons" ("Auth") was elicited. The participant was also able to name a construct superordinate to "Auth", "Satisfactorily (vs. unsatisfactorily) reflects the way people communicate in real life" ("CommR"). Moderately high level of error of anticipation (EA=31,88)suggested that there may be other constructs than "Auth" that were used by the participant to anticipate "CommR". A new construct, subordinate to "ComR", "Wide (vs. narrow) variety of topics in the textbook" ("TVari") was elicited, and ties from existing constructs "RealL", "LangS", and "PracG" to "CommR" were established in the network as can be observed in Figure 6. In this way value of EA for construct "CommR" was reduced from 31,88 to 22,93.

7) Initially the participant was unable to ladder up from the ill-defined construct "Effic". After this construct was redefined, and replaced with four constructs, the participant was able to provide further constructs of increasing superordinacy, as shown in Figure 6.

8) Because the two constructs at the top of hierarchy "Easier (vs. less easy) to act independently" ("Indep"), and "Easier (vs. less easy) to socialize with others" ("Socia") were similar regarding the ratings of elements on them (SDSC=0,13), they were checked with the participant for equivalence. The participant responded

that they are distinct, since acting independently involves communication with institutions, while socializing does not.

9) Construct "FastG" exhibited highest error of anticipation (EA=29,63) among all constructs in the network. It was therefore checked for additional subordinate constructs, using the laddering down technique. Another construct "Many (vs. a few) exercises for each grammar unit" ("ExerG") was elicited. This construct didn't decrease, but even slightly increased value of EA, from 29,63 to 30,51. At the same time high value of SDPC (SDPC=0,81) indicated that construct "FastG" could mean that verbal labels for this construct are not properly defined. The participant was unable to provide additional subordinate constructs, or redefine the construct in question.

Construct elicited in this interview, and how they connect to each other are presenter in Figure 6. While only four initial constructs were elicited when a standard procedure was used, there were nine construct at the bottom of hierarchy after procedures included in Consistent Laddering were used. Because of the way Laddering interviews are conducted five of the constructs found at the bottom of hierarchy would have been left out, resulting in participant not being fully understood by the interviewer. By using procedures described in this article, and guided by measures provided in CLAD, seventeen constructs connected to the investigated topic of the interview were elicited, while only four five of them could be elicited using procedures employed in Laddering interview. It is evident from this case that understanding of participant's construing can be improved when Consistent Laddering technique is used.

Data for the described interview can be accessed online in CLAD, so that decisions that the interviewer made during the course of the interview can be better understood.

It should be noted that while Laddering technique is directed only at elicitation of constructs of increasing superordination, t.i. laddering up, Consistent Laddering also allows for elicitation of constructs that are subordinate to the construct in question, t.i. laddering down. In this way constructs are elicited in an up and down manner. Advancing up the hierarchy is supplemented by attempts to elicit more concrete construct upon which participant's anticipation is based. In doing so the interviewer is guided by various measures discussed in this article, but of course not limited to them. These measures can also help the interviewer to pay attention to difficulties in the interview, which might remain undetected otherwise. In this way the interviewer is given a chance to better understand the participant.



Figure 6: The network of constructs as established at the end of the interview.

9 Conclusion

A major concern of this article was to show how Consistent Laddering interviews are conducted, and how different measures employed in this technique can be used during an interview to guide an interviewer to potentially problematic parts of the interview.

Hinkle's (1965) Laddering technique, upon which Consistent Laddering has been conceived, relays on repeatedly asking a form of the "Why?" question to elicit constructs of increasing abstraction, which form ladders of constructs, that may converge and diverge with other ladders of constructs. Within this article a critique is addressed at the Laddering technique that aims only at elicitation of constructs of increasing abstraction which can result in constructs being left out. This may lead to a situation where participant's construing of a topic is not well understood. Further, Laddering technique doesn't include any means beyond interviewer's skill and experience that could be used to detect difficulties that can occur in an interview.

Consistent Laddering (Korenini, 2012), follows the same basic procedures as Laddering technique, but also employs laddering down technique, rating of elements on all elicited constructs elicited, as well as rating of subjective importance of constructs in the context of their direct successors. When this data is collected in interviews, some difficulties, e.g. missing subordinate constructs, which were not previously discussed in the field of Laddering technique, become evident.

The discussed difficulties found in Laddering technique are addressed in Consistent Laddering technique by applying various measures that can be inspected by the interviewer for guidance during an interview. A computer program, named CLAD, has been developed, which can be used to conduct Consistent Laddering interview, and can provide calculations of these measures for the constructs that were elicited in the interview, where they are applicable.

Consistent Laddering is intended for use in research settings where Laddering technique has previously gained popularity. Since Consistent Laddering adds complexity to Laddering technique additional time is needed to complete an interview. When this presents itself as an obstacle to conducting the interviews it is suggested that topic of the interview is more narrowly defined.

There is another important question that needs to be addressed in the context of Consistent Laddering. When Fransella (2003: 112-8) writes about Laddering technique she asks a question whether Laddering is a skill or a "tool", and points out that it is actually both: a very complex skill, not just a simple interviewing technique, and one of the most useful "tools" that has come out of Personal Construct Psychology (ibid.: 112). It is recognized that Laddering is a skill that neds to be learned, and not just a procedure to be followed, and this also holds true in case of Consistent Laddering. It should also be noted that Fransella was a theoretician and a practitioner working within the field of Personal Construct Psychology, and was addressing personal construct practitioners. It is therefore understandable that she didn't expose that a prerequisite to using this "tool" is an in depth understanding of underlying theory. Since Laddering has been used outside of this theoretical field, mainly in marketing and knowledge acquisition (see Critenden et al., 2012:75-78), it is necessary to stress that Laddering should not be reduced to a technique where a form of "Why?" question is asked to get answers of increasing abstraction. Exactly the same holds true in case of Consistent Laddering technique.

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