

PERSONAL CONSTRUCT PSYCHOLOGY AND CONTENT ANALYSIS

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Published PCP research is dominated by analyses of construct and element ratings, or the use of structural measures. An attraction of grids is the potential to examine subjectivity through such 'quantitative' analyses. In contrast, significantly less use has been made of approaches for analysing the content of construing. Content analysis has the potential to provide techniques for systematically analysing construct content. However, content analysis raises some fundamental questions for PCP researchers and practitioners. The present paper reviews the various approaches taken by PCP researchers to content analysis. Limitations associated with these approaches are discussed along with recommendations for future PCP content analyses.

Key words: *Personal Construct Psychology, content analysis.*

INTRODUCTION

For many people, PCP is about repertory grids. In 1985, Neimeyer (1985) reported 96% of empirical research published between 1954–1981 utilised repertory grids. While the percentage may have reduced it is unlikely the dominance of grids would have reduced. An attraction of grids is the potential to examine subjectivity through 'quantitative' analyses. In contrast, significantly less use has been made of systematic approaches to analysing the content of construing. However, as Fransella *et al.* (2004) remind us "grids are about constructs" and construing.

Content analysis is a set of techniques that have the potential to assist in examining not only grid content, but any data generated clinically or for a range of purposes by PCP practitioners and others. According to Krippendorf (2004a), "*Content analysis is a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use*". This definition contains three fundamental aspects of content analysis, namely: (a) the findings from a content analysis should be able to be replicated by others, (b) the analysis should measure what it claims to measure and, (c) content analysis is not limited to textual data.

There are three basic approaches to content analysis. The first is the frequency count of

words. This approach is probably least useful to the analysis of a single or even multiple repertory grids because of the relatively small number of words in a grid. A second approach is to examine the co-occurrence of words. For example, the number of times the words "boring" and "presentation" go together. Again, this approach is more likely to be suited to relatively larger texts, as the likelihood of two words appearing together will always be less than the likelihood of either word appearing individually. Five hundred to 2,000 words has been suggested as an optimal length, because if texts are too long it is highly likely words will co-occur (Miller and Rierchert 2001). The third major approach to content analysis, is the coding of text units (e.g words, sentences or paragraphs) using some form of coding scheme. While it is this last approach that will be the primary focus of this paper and which has been most often used in PCP research, other data that has been analysed by PCP researchers will also be considered.

THE ISSUE OF INDIVIDUAL MEANING

Content analysis has not historically been widely used in PCP research. One reason for this could be the concern that constructs are not necessarily equivalent to word labels (Kelly 1955). Shaw

(1994) has described four possible relationships that may exist between constructs and word labels, namely, agreement between constructs and word labels, different words being used for the same construct, the same word being used for different constructs and different words being used for different constructs. Secondly, there is concern that individual meaning cannot be readily categorised by another person, especially in the absence of elaboration or understanding of context and application (Yorke, 1989). When describing the analysis of self-characterisations, Kelly noted, “A *literalistically minded clinician, who does not realize that he is setting out to learn a new language, may seriously misinterpret what his client means, simply because he presumes that the client agrees with the dictionary*” (Kelly, 1955). Kelly was, however, interested in both how an individual was similar to others but also unique. This issue has also been discussed by Duck (1983) in terms of what Kelly meant by two individuals having similarity of construing, i.e. is similarity to be understood in terms of structure, content or the conclusions drawn about events.

ANALYSIS OF GRID DATA

Another way to describe content analysis is in terms of whether the categories utilised in a content analysis are theory or data driven (Simon and Xenos 2004). Data driven content analysis develops the categories from the raw data, whereas theory driven approaches categorise data in terms of categories developed on the basis of theory or on empirical grounds. PCP research has adopted both approaches. Examples of both types of content analysis will be discussed along with respective advantages and disadvantages of these approaches.

Data driven approaches

Data driven content analysis has been favoured by authors working in the business or management field (Honey, 1979; Jankowicz, 2004; Stewart and Stewart, 1982; Sypher and Zorn, 1988; Wright, 2004). The basic approach rec-

ommended by these authors is to take individual repertory grids and cut up the grids so each elicited construct is on a separate sheet of paper. These constructs are then sorted into groups of similar constructs. It is recommended by these authors that another person groups the same constructs and that negotiation occur regarding any disagreements. In effect, this is a two-stage process, of developing categories from the data and then reliably allocating the constructs to the categories. This, however, is also an iterative process that might require several cycles before satisfactory reliability is obtained (Jankowicz, 2004). In effect, data driven approaches involve an individual construing the constructs of others.

A primary advantage of these approaches is that the categories reflect the constructs they were developed from, and are closer to the raw data. Disadvantages include the potential for low replicability by others (e.g., if a rigorous and transparent approach to coding development is not adopted) and potential difficulties in resolving disagreements. Honey (1979) has recommended the use of two additional coders to counter potential bias of the code developer. However, the available literature offers little empirical basis for determining the number of coders that should be used. In general, the more coders are employed, the more certain one can be regarding the reliability of the coding scheme, i.e., if other coders were to code the data similar results would be obtained (Noda *et al.* 2001 has discussed this issue in relation to diagnostic decisions). Further, Krippendorff (2004a) has cautioned against colleagues acting as the second coder because they are more likely to be aware of the researcher's aims or general approach and are less likely to be truly independent.

Stewart and Stewart (1982) also propose that supplied (theory derived) categories can be used (e.g. ‘propositional’, ‘sensory’ and ‘evaluative’; ‘ends’ versus ‘means to ends’; ‘people’ versus ‘technical issues’) in combination with data derived categories. Another hybrid approach has been described by Honey (1979) who recommends the inclusion of supplied constructs to sum each individual's perspective on the topic of interest. This approach has been discussed in detail by Jankowicz (2004) and involves computing matching scores between the elicited and supplied constructs. These scores are used to aggregate con-

structs across a sample and to examine the extent individual constructs match the ratings of the supplied 'summary' construct.

A small number of other studies have utilised data driven approaches. Content analysis was used to examine 40 mental health professionals' judgments about the suitability for release of security patients (Green, 1996; Green and Baglioni, 1997). The first author reviewed the data for commonly recurring constructs and developed a 19 category-coding scheme. To test the reliability of this coding scheme a random sample of eight grids (20% of the grids) and two grids selected for their anticipated difficulty to code were coded by three independent coders. Following the attainment of a kappa value of 0.82, another three coders then coded the full set of 316 constructs. Intercoder agreement for the full data set was 0.73 (n=316) and 0.74 for the six constructs (n=240) nominated as most important by each participant. Disagreement between the coders was resolved after the reliability analysis. An alternative, more rigorous approach would have been to further refine the coding scheme and employ a fresh set of coders.

A more complex approach designed to develop a group cognitive map from constructs generated by multiple individuals has been described by Hill (1995). Data that was analysed included, the original elicited ("chosen") construct pole, most superordinate constructs and the subordinate construct which describes how the superordinate construct will be achieved. Contrast poles were included along with the preferred poles in the group cognitive map "where possible". Other features included translating words into noun equivalents and the use of Key-word-in-context lists to examine words in context. Words shared across participants were examined for superordinate and subordinate linkages and implications. Constructs without superordinate and subordinate links were excluded, as a key concept underlying the approach was the assumption that a construct is defined by the constructs that are superordinate and subordinate to it. The seven participants who generated the constructs were shown the completed individual and group cognitive maps and confirmation was sought regarding accuracy of the maps. Participants were also asked to rate

whether their individual map was an "accurate expression" of their views and whether the group cognitive map accurately subsumed their views. This method was developed to facilitate team building and is labour intensive and would be complex to implement with the large numbers of participants typically recruited to research studies.

Simple theory driven coding schemes

PCP researchers have utilised a variety of theory driven approaches to content analysis. A number of studies have utilised only a small number of categories that were used to code constructs. For example, Bieri *et al.* (1958) calculated an External Construct Score based on the number of constructs categorised as 'external' (e.g., external qualities such as physical characteristics, relationships, interests and activities), while Little (1968) categorised constructs as 'psychological' or 'role'. This latter approach was adopted by Duck and Spencer (1972) who added an 'other' category in their analysis of constructs related to friendship formation. Walker *et al.* (1988) coded constructs in terms of whether the constructs concerned 'people' or 'problems', whether the constructs were 'global' and 'subordinate', and whether there was evidence of preemptive construing and impermeability. A second coder categorised the constructs in terms of these latter constructs and inter-coder agreement of 99% was reported. As is the case for many PCP studies agreement was based on raw percent agreement which does not control for chance agreement (Krippendorff 2004a; Neuendorf 2002). The content analysis codes suggested by Stewart and Stewart (1982) also utilised a small number of predefined categories.

Landfield content analysis categories

Landfield (1971) developed a 32-category coding scheme, that included a small number of sub-categories to indicate time (e.g. past, present, future) or degree (e.g., high or low). This coding scheme has been described in detail by Fransella (1972) and Winter (1992). The coding scheme has been used in full or in part in a number of studies, including research into people who stutter

(Fransella 1972), sex offenders (Horley 1988), suicide (Landfield 1976) and psychotherapy (Winter 1992). Landfield's data on intercoder agreement has been reported by Fransella (1972) and the raw percentage agreement ranged from 59% to 75%. Fransella (1972) did not report intercoder agreement data but did indicate there were a "substantial minority" of constructs that could have been allotted to several categories. In such situations the implicit construct was used to determine the appropriate category. The problems with intercoder agreement in this study may have been reduced if more structured training had been provided. Harter (2004) obtained an average kappa of 0.72 when a selection of 347 of Landfield's constructs were coded by three raters (though it is of note three other coders were dropped because of "unreliable" ratings). An average kappa of 0.65 was obtained when new data (e.g., the 60% of 1960 constructs not included in Landfield's scoring index) was coded.

Two studies (Burke and Noller, 1995; Harter, 2004) have utilised a computer program, AUTOREP (Murphy and Neimeyer, 1986) that contains a dictionary of 1,500 constructs based on previous research by Landfield. Burke and Noller (1995) noted some constructs were scored for at least four different categories. This issue was raised as one of the limitations of Landfield's coding scheme (Feixas *et al.* 2002). Other limitations identified by Feixas *et al.* included the use of overlapping, non-exclusive categories, coding of construct poles as separate entities, as well as inclusion of categories with differing levels of abstraction and type (e.g., inclusion of time categories). Feixas *et al.* also described the coding scheme as being non-comprehensive because categories with low inter-coder agreement were dropped. While the effect of dropping such categories on the comprehensiveness of the coding scheme is not certain, alternative strategies have been proposed in more recent texts on content analysis. Neuendorf (2002) for example, has proposed that once problematic categories are identified further coder training or code-book revision is recommended (see also Hruschka *et al.*, 2004). Category revision is an issue relevant to both data and theory driven content analysis.

Feixas's 'Classification System for Personal Constructs (CSPC)'

Bearing in mind the above limitations, Feixas *et al.* (2002) developed a six-category coding scheme that consisted of 45 sub-categories. Central features of this coding scheme were that it was developed only for coding psychological constructs, the major categories were hierarchically organised (e.g., the highest category was moral) so that if a construct might be considered to fit into two categories, the construct was allocated to the higher order category. Another feature was that constructs were coded as a bi-polar entity rather than both poles being coded separately. While Feixas *et al.* (2002) were critical of the Landfield scheme for coding both construct poles, argument can be mounted for both approaches, especially when the poles appear to come from different domains. This latter issue has been considered by Yorke (1989) who has provided examples of bipolar constructs that are antonyms ("straight constructs") and constructs in which the superordinate relationship between the poles is difficult to discern ("bent" constructs"). Yorke has suggested "bent" constructs may be composed of poles from separate constructs. Clearly, coding such a construct into a single category is problematic.

The coding scheme was developed using a sound methodology (e.g., independent coders and use of a development and an analysis data set). It would be expected that the three hours of training which was provided to coders contributed to the high level of inter-coder agreement reported. While both raw percentage and chance corrected measures of agreement were calculated, somewhat surprisingly the level of chance corrected agreement (e.g., kappa=0.95) was higher than the raw percentage of agreement (0.87). Similar levels of agreement were obtained by Haritos *et al.* (2004) for coding of constructs elicited from element role titles (kappa=0.90) and constructs elicited from 'acquaintance' elements (kappa=0.87). An overall kappa of 0.89 was obtained though coders could not agree on how to code 12.4% of the constructs. This paper is also of interest because it examined the relationship between role titles versus acquaintance elements, the types of constructs generated and grid structure.

A lower level of agreement ($\kappa=0.74$) was obtained in a study which used a modified version of the CSPC (Neimeyer *et al.*, 2001). This modified coding scheme featured the addition of two major categories (e.g., a higher order 'existential' category and a lower order 'concrete descriptor' category) as well as an additional 'self-criticism/acceptance' sub-category that was added to the 'personal' category. To date the CSPC and the modified form have received limited use though are promising developments. A major issue remains how constructs that come from different domains are treated. A second issue that faces all attempts at the content analysis of constructs is that constructs are often single words and as such there is a higher likelihood of ambiguity than when a clause is available. This issue will be considered further when the Gottschalk-Gleser content analysis scales are considered (Gottschalk, 1995; Viney, 1983).

Neimeyer 'Content analysis of Death Constructs'

Neimeyer *et al.* (1984) developed a 25-category scheme to code death constructs. The coding scheme was developed in two stages, with three independent coders coding a sub-set of the initial development data set. Following this second stage the original categories were revised, with categories being added as well as deleted. Data on raw percentage intercoder agreement (0.81 – 1.0) was provided. Although such a coding scheme will have limited use because of the focus on death, what is useful is the publication of a how a large number of words were categorised. This dictionary allows for greater transparency and reproducibility than was found in other coding schemes. This dictionary could also be utilised for the purpose of developing a computerised analysis.

ANALYSIS OF TEXTUAL AND NARRATIVE DATA

Word co-occurrence data

Although not a content analysis as such, an example of utilising word-occurrence that has relevance to PCP is Rosenberg and Jones (1972). In this study personality trait co-occurrence was analysed using cluster analysis and multidimensional scaling to determine dimensions of person perception. Gara (1982) has considered extensions of this approach and applications to understanding individual meaning and therapy. More recently, a variety of approaches based on word co-occurrence have been discussed in the general content analysis literature. Other researchers have examined word-word correlations using cluster or factor analysis (Hogenraad *et al.*, 2003), correspondence, cluster or factor analysis of word frequency by variable tables (Lebart *et al.*, 1998), and factor analysis of word frequency matrices (Simon and Xenos, 2004). The latter paper compared manual coding and results obtained by factor analysis, and concluded that the latter approach provided a richer coding system that better represented concerns raised in news articles. Lebart *et al.* (1998) have argued that such approaches do not involve the researcher imposing on data to the same extent as when data is coded using categories, e.g., when a researcher develops codes the potential for bias is introduced. The basic assumption of these approaches is that counts of words reveal the structure in texts, through examining the relationship between words that constitute the text. A disadvantage of these approaches is that larger texts are required than is typically generated by repertory grids or self-characterisations. Another consideration is the issue identified by Harter, Erbes and Hart (2004) and Yorke (1989) regarding the problems associated with trying to infer meaning from an individual word (e.g., just) in the absence of context, such as "a just war" as opposed to "just war after war".

Gottschalk-Gleser-Viney content analysis scales

A series of content analysis scales were developed for the purpose of 'objectively' inferring psycho-

logical states from verbal reports. These sophisticated scales feature differential weights to indicate intensity and magnitude, correction for number of words and weighted categories (Gottschalk *et al.*, 1969; Gottschalk, 1995). These scales had their origins in psychoanalysis and clinical practice, and have sought to correlate psychological states with physiological and other variables.

The first published scales included scales to measure anxiety, hostility, social-alienation and personal disorganisation (Gottschalk *et al.*, 1969). Subsequently, a number of scales have been developed by Viney (1983) to measure cognitive anxiety, sociality, pawn and origin, positive affect and life stress (Viney, 1981; Viney, 1983). The cognitive anxiety scale, in particular, was developed to investigate Kellian anxiety, i.e., individuals' experiences of being unable to make sense of events (Viney 1983). Typically, data is collected by asking an individual to speak for five minutes about "any interesting or dramatic personal life experiences they have had". The response of each individual is taped, transcribed and analysed using the standardised scales. Rather than individual words, the unit of analysis is the clause, as it is considered to more meaningfully convey an individual's thoughts, feelings and actions toward themselves and others (Gottschalk 1995).

The various Gottschalk-Gleser scales have been extensively used. The original authors and others (Gottschalk, 1995; Viney, 1983) have undertaken numerous validation studies with high levels of reliability. This has been achieved through careful definition of terms, scale testing, and a strong emphasis on coder training (Viney, 1983). However, extensive training in the use of the scales is required. In describing use of the Hostility-Outward scale, Gift *et al.* (1986) noted that anyone who has had the appropriate training (approximately 20 hours) could score the scale. Computerised scoring, which has been developed, will reduce the need for extensive training, though careful transcription and preparation of text is still required (see Roberts and Robinson, 2004, for a general discussion of this topic). It follows that this approach is dependent on the quality of transcription. Another consideration for PCP researchers and clinicians concerns the

compatibility of the psychoanalytic assumptions underlying this approach and associated constructs with PCP. Careful examination of the scale scoring systems (see Gottschalk, 1995) will assist in determining the compatibility of the scales with PCP theoretical constructs. Viney (1981) has addressed this issue by developing PCP consistent scales using principles derived from the Gottschalk-Gleser approach and utilising the Anxiety scale as a measure of Kellian threat (Viney 1993). The other advantage of this approach is that time-demands on research participants is minimal, though Viney (1983) has noted data quality is dependent on individuals' verbal ability. This method of data collection also has the advantage of being relatively unobtrusive and focuses on events that are individually salient (Viney, 1983).

The analysis of self-characterisations

Kelly (1955) described his approach to analysing self-characterisation in terms of examining content and organisation, area or topical analysis, themes or cause-and-effect relationships, dimensional analysis and the application of professional constructs. Kelly distinguished his analysis from approaches that relied primarily on verbal or syntactical analysis, and stated that he was primarily interested in understanding "the dichotomized alternatives between which the client must continually and consecutively choose".

While Kelly's approach was specifically directed toward clinical application, Jackson (1988; 1990) has attempted to develop a more standardised approach to the content analysis of self-characterisation. Jackson (1988) described eight categories which were used to score a self-characterisation. Each category reflected one of Kelly's corollaries. For example, the first category labelled 'self-esteem' was intended to reflect the sociality corollary. To score this item a count was made of the number of times a person referred to the views taken of him or her by others. Similarly, the second category labelled 'non-psychological statements' referred to the experience corollary. This category was scored by counting the number of times a person referred to his or her past, or possible future in psychological terms.

A paper published two years later (Jackson, 1990) makes no reference to the corollaries. Although some category titles were changed, 'self-esteem' became 'views of others', and 'non-psychological statements' was changed to "history and future", the category definitions remained essentially the same. Two additions were a count of the number of prompts and a count of the number of non-psychological statements (e.g., purely behavioural statements, activities and physical descriptions). These items were then deducted from the total score. These papers and another source (Houston, 1998) describe this scoring method, provide sample self-characterisations and examples of how they were scored. Houston (1998) provides a particularly detailed example of the scoring approach. This scoring approach has potential usefulness, however, while attempting to replicate the scores by independently coding the provided self-characterisations, it was apparent that more detailed definitions of terms are required to ensure adequate inter-coder agreement.

An alternative method of scoring self-characterisations has been described by Klevjer and Walker (2002). Self-characterisations were segmented into phrases and each phrase scored according to McAdam's (1994) three tiered personality framework, e.g., dispositional traits (Level I), personal concerns (Level II), and life story or narrative (Level III). For Level I phrases were scored as either 'Big Five' (based on a list developed by Costa and McCrae 1992) or 'non-Big Five'. Level II was scored using 11 sub-categories, including personal striving, coping strategies, values, skills, needs, while Level III was scored for changes in tense and obvious plots. Additional categories included 'How others view me', 'belief about self', 'belief about others,' and 'personal emotion'. No phrase was scored for the same level more than once, but could be classified into more than one level, e.g., change of tense and trait characteristic. A second coder checked 70 of the units (intercoder agreement = 88%). The case for using a coding approach based on empirically derived theory has been argued by McAdams and Zeldow (1993).

Longer texts

While the theory and data driven approaches, which have been described, can be applied to longer texts, Feixas and Villegas (1991) have described a set of procedures for analysing autobiographical texts. This approach is more suited to longer texts, or multiple texts created over time. One focus of this method is on identifying different types of constructs, for example, simple evaluative constructs (e.g. "Ross is sex mad"), meta evaluative (e.g. "John thinks Ann is pretty") or relational (e.g. "Ross treated me badly") constructs. Behavioural or descriptive constructs are not recorded. Following exclusion of elements associated with fewer than five constructs and constructs that are applied to only one element, constructs are coded as 'negative', 'positive' or 'neutral'. Following exclusion of 'neutral' constructs, the evaluative constructs applied to various elements can be examined for "coherence", i.e., an element is considered coherent if more than 85% of constructs are either 'positive' or 'negative'. Elements below this threshold are considered ambivalent and situational analysis is undertaken to determine factors associated with this ambivalence. Additionally, construct and element relationships can be examined by cluster analysis of a construct-element matrix and various indices such as intensity and density calculated. Analyses can also be conducted using the meta evaluative and relational constructs. The authors identified the limitations of their approach as the need for an extensive number of constructs that are applied repetitively across diverse elements and multiple characters that include the text's author. It was considered beneficial by Feixas and Villegas (1991) that texts cover as wide a range as possible of an author's life. To use this method considerable understanding is required both of the text preparation procedures and the various analysis methods.

CONCLUDING COMMENTS

A diverse range of PCP content analysis applications has been reviewed. In developing a content analysis, decisions have to be made regarding the unit of analysis, the method of analysing the data

and the reliability of the coding. Data driven approaches are flexible and appealing because they are closer to, and derived from the raw data. It can also be argued that the researcher or clinician is not attempting to force data into predetermined categories that may not be applicable to the data. In contrast, McAdams and Zeldow (1993) have stated the case for theory driven approaches, "For our taste, well validated measures of carefully articulated constructs are preferable to omnibus systems that promise to cover the universe by presenting a list of theoretically decontextualised terms and topics". Theory driven approaches are also more transparent, more readily applied by others and make explicit assumptions, which may not be as apparent in data driven approaches. It is important in considering when considering which approach to adopt to consider the respective advantages and limitations, as well as the range of approaches that are available.

Further, it is considered that attention to developments in the broader content analysis literature (see Kolbe and Burnett, 1991, for a review of identified weaknesses) can significantly enhance PCP derived content analyses. One example of this is the work by Viney (1983). There are, however, particular issues that PCP researchers and clinicians need to consider. These issues include:

1. Consideration of whether the focus should be on a single construct pole, both individual poles or the construct as a single entity
2. Less reliance on single word labels to describe constructs so as to ensure a fuller description of individual's meaning (see Yorke, 1989).
3. Use of appropriate statistics that take into account chance agreement to measure inter-coder reliability (see Krippendorff, 2004b, for a recent review).
4. More comprehensive definition and operationalisation of categories, and an iterative process of category development to obtain a satisfactory level of reliability (Jankowicz, 2004).
5. Use of multiple coders and greater independence of coders to increase the reproducibility of findings.

The preceding review has discussed some of the theoretical and practical challenges that face PCP researchers and clinicians who intend to use content analysis. Appropriate attention to methodological issues can positively contribute to analyses that more comprehensively and rigorously examine individual and group construing, while providing models for future researchers, thus enhancing the status of PCP research.

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