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THE 'RADEX' – See ACTION SYSTEM APPLIED TO FORENSIC TOPICS

ACTION SYSTEM APPLIED TO FORENSIC TOPICS

By

Professor David Canter

See also Multi-dimensional scaling, social psychological concepts applied to forensic psychology

Definition and theory development

In the search for a conceptual framework that underlies variations in criminal activity a model derived from Parson's (cf. Parsons and Shills, 1951) exploration of sociopsychological systems is proving productive. Their work is This has its roots in cybernetics and ~~the~~ related attempts to model social and psychological processes as systems of interactions. Parson's werework was much criticised for the its abstruseness of the model and difficulties in operationalising its central concepts but Shye (1985) developed a robust, and relatively straightforward conceptualisation of bBehavioural aActions systems that was directly open to empirical test.

Shye took Parson's starting point was that all living systems are essentially :-

- a) 'open' in that they must interact with their surroundings in order to survive;
 - b) organised in that they contain distinct entities that can be distinguished from each other, but that contain a recognisable relationship to each other, i.e. are 'structured';
 - c) have some stability in these components and their relationships over time.
- Any system containing these properties is regarded as an 'action system'.

Shye argues that the definition of an action system implies that any events in which the living system it is engaged will have a source for its emergence and a location of the manifestation of that event. Furthermore the source may be within the system or external to it, as may be its manifestation. This gives rise to four possible forms of event:-

- a) Those that emerge inside the system and are actualised outside – known as the *expressive mode*, which often reflect individualistic 'personality' aspects of the system,

Comment [JB1]: Not quite sure what you mean here..Is this meant to indicate another entry on the RADEX or do you wish to reflect in the title of your essay? This was just a suggestion to you that you include this entry so that people looking for Radex would be sent to Action System where it is indeed discussed. But perhaps there ought to be some reference in the MDS section to the radex as well

Comment [JB2]: This tends to be the patter of other entries-providing some of the originating background and spelling out how concept is defined
I was keen to make clear that this is an emerging set of ideas not some firmly established theory/set of concepts that might benefit from the definition, development format.

Comment [JB3]: and Shills??
Not really the publication I have cited is the most accessible one but the general challenges are to the work of Talcott Parsons.

Comment [JB4]: What is the it refer to

- b) emerging outside and manifested outside – *adaptive mode*, which typically focus on shaping physical aspects of the environment,
- c) emerging within and actualised within the system – *integrative mode*, relating to intrapersonal processes, and
- d) emerging outside and manifested inside the system – *conservative mode*, having cultural significance.

Canter and his colleagues (e.g. Fritzon et al 2001) have demonstrated the utility of such an approach when applied to criminal behavior. They ~~have further~~ developed the action system model ~~further~~ by linking it to dominant theories in the explanation and differentiation of arsonerim. They have shown its power in combining a number of different theoretical perspectives. For example, the distinction between crime as having some instrumental purpose as opposed to being 'expressive' (i.e. of significance in its own right), ~~often referred to as 'expressive'~~, is apparent in the division ~~on the one hand~~ between conservative and adaptive actions, which are instrumental in the sense of being reactions to processes external to the individual, and ~~on the other between~~ integrative and expressive modes, which are both initiated within the person and thus fundamentally expressive in the sense of coming from the person to act on the environment.

However, ~~these~~ theories of crime that distinguish between personal and social mechanisms relate to ~~sit on~~ the action system in a way that is different to the expressive/instrumental division. The social theories relate more readily to integrative and conservative modes of actions. Whereas the more individually oriented theories of criminality are more in accord with the expressive and adaptive modes.

The relationship to broad theories of crime therefore redefines the modes of action in a criminal context such that the *integrative* mode has strong social, but expressive components. This ~~talks to implies would relate to that~~ interactions between the target of the crime and the criminal ~~in ways that imply will have~~ personal significance or intimacy. By contrast the *adaptive* mode is a personal but instrumental activity in which the

Comment [JB5]: Not sure what you mean by this..relate to/explicated by??

individual is seeking direct gain. The *conservative* mode within a criminal context reflects social processes that are instrumental in nature, most commonly the control of others as dominant objective. The *expressive* mode is personal and acting out in a way that is often referred to using the terminology of being 'expressive'. Overt hostility against others would be a typical manifestation of this mode.

The action system model goes further than just being the identification of four modes of action. The basic definitions of the modes give rise to conceptual inter relationships between that can be represented as regions of a notional space, (Figure 1) which forms a set of hypotheses open to empirical test. Such testing is possible by identifying items that would correspond to each of the aspects of the mode and then representing their inter-correlations across an appropriate sample of occurrences by means of some form of multi-dimensional scaling, as illustrated in the main aspects of arson in Figure 1.

Figure 1. The schematic representation of the relationships between the modes of an action system and themes in arson and terrorism derived from empirical study.

Comment [JB6]: Is their an original source for this or have you adapted from a source or constructed for this essay. If sourced we will have to get copyright permission to reproduce
This is a construction adapted from Fritzon et al 2001. Nothing that looks like this exists in that paper so there is no copyright issue.

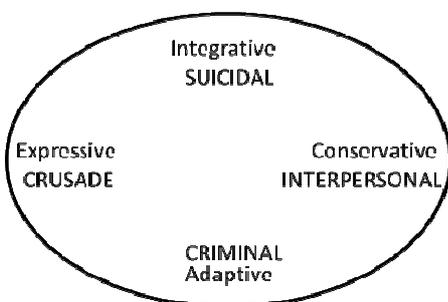


Figure 1. The schematic representation of the relationships between the modes of an action system and themes in arson and terrorism derived from empirical study.

This figures indicates that the integrative mode is hypothesized to contrast with the adaptive and the expressive with the conservative, so that in any study there would be

higher correlations between any variables reflecting adjacent modes than modes that are opposite each other. F-further, expressive and conservative can be thought of as products of the adaptive and integrative modes so that the latter two would tend to be more highly correlated than the former two, which is why the model is represented as an ellipse rather than a circle.

Further applications of the framework

In the context of criminal behavior, tests of this model have been carried out, building on the approach first developed by Canter and Heritage (1990). This consists of generating content dictionaries of the actions that can occur across a sample of crimes, then measuring the proportion of times over which every action co-occurs with every other action. The patterns of co-occurrences are then represented as adjacencies in a Cartesian space such that each action is a point in the space and the more frequently any two actions occur the closer together they will tend to be in the space. In figure 1, a set of actions found in arson have been analysed and summarized. Some of these can be seen to cover attacks on buildings of significance and so have been given the label crusade. Others reflect self-destructive actions in which a suicide note has been left. A third group reflects attacks against a known individual, with the fourth being arson in which some other criminal activity, such as burglary is present.

The strength of this model is revealed in the opportunity it provides for hypothesizing characteristics of the offender that may be inferred from the dominant mode the arson indicates. This provides a scientific basis for elaborating the 'profiling equation' central to an investigative psychology approach to evidence-based models for deriving offender characteristics from crime scene information. So that, for example, in the case of arson it has been demonstrated that those who exhibit a strongly adaptive mode may well have a recognizable criminal background, but those whose mode is integrative are more likely to have a known history of mental illness (as demonstrated by Canter and Fritzon, 1998).

Inevitably with such an ambitious and novel approach to modeling criminal behaviour there are still many aspects that require clarification, refinement and much more empirical test and development. Of particular significance is the need to integrate this model with the commonly found 'radex' of criminal actions reported in many studies since first being reported by Canter and Heritage (1990).

The 'radex' model recognizes that any action system will have a core of activities that characterize it. All the modes of which that action system can partake, will share some common features. In arson, for example, this will be the act of setting fire to objects, but is also likely to include multiple points of ignition and often distinct and recognizable targets. It would be predicted that ~~thesesuch~~ aspects of actions would be common across many different forms of arson. It would thus also be hypothesized that such behaviours would tend to be central to any empirical representation of the co-occurrence of actions. This centrality of ~~the~~ conceptually core aspects of any crime type has been reported repeatedly in many empirical studies. [For example, Canter et al \(2003\) demonstrate that the forcing of a variety of sexual activity not only defines behaviours as rape but also has a central role in understanding the variety of rapes. Another example is stalking for which Canter and Ioannou \(2004\) show that phoning following and threatening are the core action which they argue are typically also the early stages of this criminal process.](#) In addition it has been shown that moving out from the central core of the actions are increasingly distinctive aspects of the various modes. In the case of arson this is a movement from the general involvement in fire setting to actions that are more clearly focused on the target of the arson, as shown in [Figure 2](#). The frequency with which this structure has been found has led some to mistakenly think that it is an artifact of the analysis procedure, but various studies have demonstrated this is not the case.

[Figure 2. The radiating structure from the generic core to specific modes that is found in most forms of crimes, here illustrated for arson.](#)

Comment [JB7]: Can you provide a couple of exemplar studies

Comment [JB8]: Same point as for figure one
Although this relates to the same paper as does Figure 1, there is nothing in that paper that deals with this point. [Jennifer, I've tried to get Kate to take notice of this point for ages but she does not seem to understand it! So she never deals with it in any papers...]

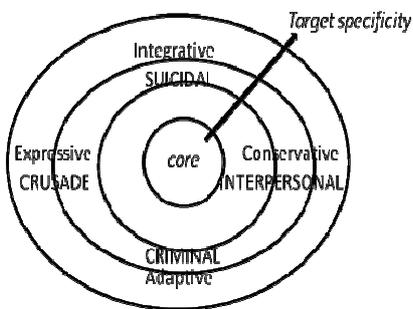


Figure 2. The radiating structure from the generic core to specific modes that is found in most forms of crimes, here illustrated for arson.

The combination of the radiating structure with the differentiation of the actions provides a general framework, known as a 'radex' (cf. Guttman, 1954). The 'radex' is structural model that is independent of content. It has been found to be applicable *inter alia* to intelligence, attitudes and quality of life, as well as crimes as varied as burglary and child abuse. Ongoing research is developing the understanding of how the four-way action system model relates to the radex structure, thereby providing a basis for considering the content of variations in criminal actions as well as the structural relationships between those contents.

The potential for such a combination of the radex and action system models can be seen from the consideration of the major model of sex offending demonstrated by Canter et al (2003). They present four themes that distinguish sex offences, revealed from their examination of 112 rapes; hostility which involves verbal and physical violence, involvement in which some form of pseudo-intimacy occurs, control which involves threats, binding and gagging and theft in which property is stolen from the rape victim. These can be identified quite directly as expressive, integrative, conservative and adaptive modes of action, respectively. Their multidimensional analysis also demonstrates the predicted spatial relationship between each of these four modes, with control opposite hostility and involvement opposite theft. This connection between the

Comment [JB9]: Do you have a source e.g This is an important central theme of the textbook I am writing with Donna, but I was reluctant to put in an (in preparation) citation. But if you wish you could reference Canter and Youngs (2009). I will put the full reference in the list below. [1]

radex and the action system models will doubtless emerge further in other data sets and types of crimes as the whole approach develops.

Conclusion

However, the challenge, as with any system based on content analysis is to develop definitions of the components that are clear and as objective as possible. There is always a risk that the broad headings of these systems are interpreted rather loosely to cover any mixture of variables that happen to be available. As examples accumulate there will be the necessary debates over exactly which operational procedures do indeed reflect the underlying processes that the models hypothesise.

Canter, D. (2000) Offender Profiling and Criminal Differentiation. Legal and Criminological Psychology, 5, 23- 46.

Canter, D, Bennell,C., Alisin,L.J. and Reddy, S,(2003) Differentiating sex offences: A behaviourally based thematic classification of stranger rapes. *Behavioural Sciences and the Law*, 21, 157-174

Canter, D. and Fritzon, K. (1998) Differentiating Arsonists: A model of firesetting actions and characteristics. *Legal and Criminological Psychology*, 3, 73-96

Canter, D. and Heritage, R. (1990) A multivariate model of sexual offence behavior: Developments in Offender Profiling. *Journal of Forensic Psychiatry* 1 (2) , 185-212

Canter, D. V. and Ioannou M. (2004) A Multivariate Model Of Stalking Behaviours. *Behaviormetrika* Vol.31, No.2, , 1-18

Canter,D. and Youngs,D. (2009) *Invesitagative Psychology: Offender profiling and the analysis of criminal action*. Chichester: Wiley

Fritzon, K., Canter, D., and Wilton, Z. (2001). The application of an action systems model to destructive behaviour: The examples of Arson and Terrorism. *Behavioural Sciences and the Law*, 19 (5-6) 657-690.

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Guttman, L. (1954) A new approach to factor analysis: The radex. In Lazarsfeld, P.F. (ed) *Mathematical Thinking in the Social Sciences*, London: Free Press

Parsons, T., and Shils, E. A. (1951)(eds) *Toward a General Theory of Action* Cambridge: Harvard University Press

Shye, S. (1985) Nonmetric Multivariate Models for Behavioral Action Systems, in D.Canter (ed) *Facet Theory: Approaches to Social Research* New York: Springer-Verlag, 97-148

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