

**Levels of explanation in the
European Journal of Social Psychology**

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Abstract

The nature of explanation in experimental social psychology is the subject of much controversy. To advance the debate, the present article provides a grid of analysis allowing a more thorough study of experimental social psychologists' work. Four levels of explanation are distinguished as works can be seen as studying intra-individual processes (level 1), interindividual but intra-situational dynamics (level 2), effects of social position in a situational interaction (level 3) and intervention of general beliefs (level 4). An important characteristic of experimental work is the possibility of combining different levels of analysis in the same study, and of surpassing, in this way, the old dichotomy between 'psychologizing' and 'sociologizing' explanations. Experiments published in the first seven volumes of the European Journal of Social Psychology were explored within this framework.

INTRODUCTION

The founder of the first laboratory in psychology was also the author of a series of volumes about 'Völkerpsychologie' to which he gave the name social psychology in a text written in English (Wundt, 1907, 26). Wundt did not however envisage a synthesis between experimental psychology and social psychology:

'In the present stage of the science these two branches of psychology are generally taken up in different treaties, although they are not so much different departments as different *methods*. So-called social psychology corresponds to the method of pure observation, the objects of observation in this case being the mental products. The necessary connection of these products with social communities, which has given to social psychology its name, is due to the fact that the mental products of the individual are of too variable a character to be subjects of objective observation. The phenomena gain the necessary degree of constancy only when they become collective' (*ibid.* 26s).

Despite Wundt's reservation, experimentation and social psychology were nevertheless united; but if we are to believe numerous consultants, after many years of life together, the marriage appears to have foundered. I have no intention of analysing yet again the current state of experimental social psychology, but I wish rather to provide a means of better understanding the actual work of experimental social psychologists. Often, critiques addressed to social psychology focus on only a few types of research and rarely present a systematic analysis of a whole set of studies. I wish to develop here a technique making possible just such a systematic examination of a whole series of publications in social psychology. An earlier version of this technique was discussed in a previous article (Doise, 1978) where four ways in which social psychologists have typically proceeded were distinguished. These approaches correspond to four levels of analysis, which are now briefly defined.

A first level of analysis in evidence in social psychology experiments deals with *intra-individual* processes. The models that are used in this type of study describe the manner in which individuals organize their perception and evaluation of the social environment, as well as their behaviour in respect to this environment. Interaction between individual and environment is not directly dealt with; rather, the mechanisms that enable the individual to organize his experiences are the subject of analysis. Studies on cognitive equilibrium and on integration of complex information are typical of this level.

A second level of analysis deals with *interindividual* processes as they occur in a given situation. The different positions which individuals can occupy outside that situation are not taken into consideration. Most of the studies in the game theory paradigm are at this level. Their concern is the dynamic of relations that can be established among given individuals in a given situation at a given moment, and they highlight the spiral dynamic in terms of which conflicts and tensions develop among individuals. The classic studies on social influence, on communication networks, and the majority of more recent studies on attribution theory, try to deal with interindividual intra-situational processes.

At a third level of analysis extra-situational differences in *social position* that intervene in a situational interaction are explicitly introduced. Studies on power and social identity thus rely on and attempt to explicate the effects of introducing differences in social positions.

Finally, a fourth level of analysis appeals to systems of *beliefs* and *representations*, *evaluations* and *norms*, that the subjects carry with them into the experimental situation. One such belief, for example, is that rewards and punishments, positive and negative sanctions, are not haphazardly distributed in the world—Lerner (1971) shows how such a belief may lead to rejection of an innocent victim. Milgram (1974) also invokes belief in the prestige of science to explain why his subjects could be led to torture an apparently stupid student.

Discussing levels of analysis in this way does not imply, however, that there exist four kinds of experimental social psychology—the very nature of experimentation is in fact the articulation of different levels of analysis. In my earlier article I provided examples of such articulations, emphasizing the importance of their study for the development of a more general way of conceptualizing relationships between psychology and sociology and for surpassing this dichotomy which, since Wundt, has called into question the very possibility of an experimental social psychology.

Table 1. List of main articles not included in this analysis

Discussions:

The study of conflict in social psychology: 4, 389, 437, 441, 457.
 Cross-cultural research: 6, 269, 323, 331.

Reformulations of models and processes:

Attitude judgements: 1, 419.
 Equilibrium theory: 1, 435.
 Positivity bias: 1, 455.
 Risky shift: 1, 493.
 Motivation theory: 5, 61.
 Learning of attitudes: 6, 5.

Alternative approaches:

Research biases: 1, 297.
 Person perception: 3, 241.
 Property and individualism: 6, 343.
 Social attitudes: 7, 85.
 Fascism: 7, 393.

Historical studies:

Child-rearing manuals: 4, 65.
 W. Dilthey: 6, 207.

Review articles:

Group creativity: 3, 361.
 Belief differences and prejudice: 4, 179.

Reinterpretations of previous research:

Polarization and averaging: 1, 518.
 Social representations: 7, 491.

But before proceeding further I wish in this article to deal with an important problem: does the conception of levels of analysis account for all examples in a given sample of research work, or does it only highlight particular types of research which are not necessarily representative of the diversity of experimental studies in social psychology? It is with this question in mind that I have attempted an analysis of a set of studies, published in the first seven volumes of the *European Journal of Social Psychology*.

Only the major articles are included in the analysis. Of these articles all those reporting empirical data, whether gathered by experimental procedure in the strict sense or not, are dealt with. In instances where an author reports more than one piece of research in the same article, only that piece in which the highest of the four levels of analysis appears is examined. Theoretical articles, content analyses and re-analyses of older experiments are not considered (see Table 1). The 142 examined studies are referred to throughout by indicating the volume (number in italics) in which they appear and the page on which they begin: for instance, '1, 7' stands for Fraser, Gouge and Billig (1971).

A CHECK ON INTER-RATER RELIABILITY

The analysis of the 142 articles has been carried out by the author alone. This procedure raises the problem of the classification's reliability and validity. My first option was to leave evaluation to the reader by indicating the exact

Table 2. Classification by highest level of analysis of the 44 major articles in volumes 8 and 9 of the *European Journal of Social Psychology**

		Volume 8																						
First page of article	9	21	37	55	71	91	109	157	169	181	193	203	237	245	289	297	315	335	349	367	439	453	467	489
Independent variables	3	2	3	2	3	2	1	X	4	2	3	2	2	X	2	3	3	1	4	3	2	X	1	2
Dependent variables	3	1	2	2	1	2	2	2	2	1	4	2	2	X	2	3	2	1	2	X	2	2	2	2
Explanations invoked	3	2	3	X	3	2	1	X	4	2	4	4	2	4	2	3	4	1	4	3	2	X	1	X

		Volume 9																		
First page of article	1	39	49	67	85	115	149	165	177	187	205	233	243	253	265	281	291	339	363	381
Independent variables	1	X	4	1	X	1	3	2	2	3	4	4	1	4	3	3	2	2	2	2
Dependent variables	1	1	2	2	2	1	3	2	2	3	4	1	1	2	X	3	2	2	2	2
Explanations invoked	2	1	4	4	4	2	4	X	2	3	4	1	1	X	3	3	2	X	2	2

*Cases where there was disagreement between the classifications of the two judges are indicated by X.

classification of each article so that readers, and more importantly perhaps authors of the papers, could check the basis of the classifications.

But following the suggestion of two independent reviewers of a first draft of this article I wanted to offer more guarantees to the reader. A classification of the major articles in volumes 8 and 9 of the journal was carried out independently by myself and a second judge to provide some information on inter-rater reliability. D. M. Mackie acted as a second judge without any previous training other than the reading of an extended version of the Doise (1978) article.

Each article was classified according to the highest (in terms of our 4 levels) independent variable, dependent variable and explanatory principle. The two raters agreed on 89 per cent of instances for the classification of independent variables, 93 per cent for dependent variables and 84 per cent for the classification of explanatory principles invoked (Table 2). This seems to indicate that the system is far from arbitrary—moreover the differences that did occur for the explanatory principles appeared due for the most part to differences in the relative importance accorded to conjectures by the authors in the discussion section of the articles.

CLASSIFICATION OF INVOKED EXPLANATORY PRINCIPLES

The initial analysis is concerned with the theoretical frameworks and the domains of reflection within which authors formulated their principal explanations—whether in constructing their inquiry procedure and/or in discussing the obtained results. Since more than one explanation is often proposed in the same article, I retain here the one highest in my classification to which the author(s) of the study appear(s) to give particular weight, by emphasizing it either in the study's summary, introduction or conclusion. In cases where more than one explanation at the same level seem equally important, the study is classified in the area most frequently studied by articles in the journal. Obviously, a certain arbitrariness is thus introduced in the classification, but it is of little consequence for the sorting out and relating of levels which is the main purpose of the study.

Table 3 presents the results of the classification by levels. It is clear that explanations in terms of interindividual and intra-situational processes are predominant (46 per cent of the studies) and more than a quarter (27 per cent) of the studies utilize explanations of a purely intra-individual nature. Only one study in six (16 per cent) takes into account effects of social position, while only one in ten appeals to existing norms and general social conceptions. It can be seen, however, that analyses at level 3 and 4 are employed in just over a quarter of the research studies. Although this classification is not intended as an assessment of the present state of social psychology it can nevertheless give some idea of an emerging image of the discipline. It would seem that experimental social psychology studies the individual primarily as an integrator or an organizer of information, who discusses and evaluates such information in the company of others. Even though certain dynamics of interaction are

Table 3. Classification of theoretical predominances*

Level 1

Cognitive consistency: 1, 31; 2, 45, 55; 3, 125, 255; 4, 159, 201; 5, 315, 441; 6, 25, 191; 7, 265, 433, 465.

Assimilation of information: 1, 327, 475; 2, 245, 285; 5, 197; 6, 41, 81.

Attitude change: 5, 167; 6, 227; 7, 137, 221, 477.

Response extremity: 1, 357, 519; 2, 145; 6, 71; 7, 307.

Performance and generalization: 2, 33; 3, 389; 4, 469; 5, 35.

Personality: 2, 372, 437; 4, 329; 6, 175.

Level 2

Social comparison and differentiation: 2, 109*, 255; 4, 17, 137, 279; 5, 93, 457; 7, 347.

Group polarization: 2, 221, 385, 401, 417; 3, 83; 4, 5, 229; 7, 175.

Exchange and reciprocity: 1, 97, 179; 2, 273*; 3, 9, 193, 427; 5, 297, 385*.

Communication: 1, 385; 2, 163; 3, 415; 4, 125; 5, 189; 7, 29.

Minority influence: 3, 461; 4, 53, 261; 5, 237; 6, 149; 7, 15.

Social representations: 1, 311; 2, 129; 3, 311; 4, 343; 5, 351.

Aggression: 1, 59; 3, 159; 5, 229; 6, 459*.

Social learning: 2, 5; 3, 297; 5, 149; 7, 297.

Attribution: 5, 289, 339*, 425*; 7, 275*.

Conformity: 3, 53, 63, 281; 6, 353.

Intergroup relations: 1, 215, 3, 179, 6, 51.

Reactance: 1, 201; 2, 177; 7, 97.

Decisions for self and others: 3, 403.

Leadership style: 6, 475.

Social origin of cognitive coordinations: 5, 367*.

Level 3

Social identity and intergroup relations: 1, 235*; 2, 19*, 347*; 3, 281*, 447; 5, 5*, 49*, 323*; 7, 165.

Position and interaction: 1, 85*; 3, 73*, 145*; 5, 209*; 7, 151*.

System and organisation: 1, 47*, 261*; 2, 65*; 7, 61*.

Power distance reduction: 1, 107*, 339*; 7, 317*.

Representations of social differences: 2, 75*; 3, 233.

Level 4

Values and norms: 1, 7*; 3, 271*; 4, 313; 6, 405*; 447*, 7, 5*, 189*, 451*.

General beliefs: 3, 109*, 221; 6, 429*; 7, 39*.

Bias in favour of own group: 1, 149*; 3, 27*.

*References accompanied by * designate theoretical articulations.

relatively well studied, these occur among individuals who are perceived as being interchangeable. A sizeable minority pays specific attention to the effect of different social membership. Much rarer are studies in which an explicit emphasis is put on the fact that individuals develop in society, where representations and norms create dynamics that necessarily modify their behaviour. The image of the discipline gained from this initial analysis is however incomplete as it does not take into account articulations of different levels of analysis. In my view, it is precisely theoretical articulations which best reflect the dynamics of the discipline and which also indicate directions in which experimental social psychology could evolve.

ARTICULATIONS OF THEORETICAL PRINCIPLES

To determine the theoretical articulations of the studies in the journal, I now look at the above classification again in order to ascertain if studies classified at a higher level also include other levels of analysis. Practically all the studies providing an explanation at level 4, invoke this level in association with other levels. If norm values determine the intensity and the direction of polarization, it is because they are actualized in the dynamic of interindividual discussion (1, 7) where the consistency of a group member in sharing or not sharing the majority opinion, plays a significant role (6, 405; 7, 5). The fact that personal behaviour corresponds to general social norms seems more important than the internal consistency of such behaviour (level 1) in terms of the impression it leaves on another (3, 271). General beliefs about altruism not only intervene differently in different cultures, but also intervene differently in different situations according to whether or not the subjects are able to help the other (6, 447). Aggression is not to be taken primarily as a reaction to purely intrinsic characteristics of another's aggressive action but can be explained by the legitimacy attributed to the aggression by norms activated in a given situation (7, 189). Intra-situational characteristics receive their meaning only in their correspondance with given norms. In a similar way, position differences before a court of justice interfere—in the judgments of those that hold opposing positions—with the intensity of the general rejection of the acts of the accused who is to be defended or prosecuted (7, 451). The same acts would be referred to different instances of social control, depending on the industrial development of a given society (7, 39). A situational characteristic such as an arbitrary division in two groups, would only be of significance within the activation of a general intra-group bias norm (1, 149; 3, 27) which, in this way, exerts a strong influence on interindividual behaviours. The representations of bonds among different social hierarchies may, or may not, bring about general political conceptions (3, 109), as may the interpretation of someone else's behaviour combine a need for prediction with implicit theories of personality (6, 429).

So, in general, one can conclude that the studies which invoke explanations at level 4, also appeal to processes at other levels through which norms, values and general conceptions are actualized. Only those studies employing questionnaires (3, 221; 4, 313) attempt explanations solely at the fourth level.

In examining studies invoking level 3 explanations, we can see that they too mainly include explanations at other levels. A case in point are the studies on social identity. Some of these studies (1, 235; 2, 19; 3, 281) relate the value of self-image or self-evaluation to membership in different social categories, other indicate intra-individual processes at work in representations of relations between nations or between ethnic groups (2, 347; 5, 49). While these articles relate principles at level 1 to dynamics at level 3, linking of interindividual dynamics with discriminations between social categories in different situations of encounter (5, 5, 323) combine levels 2 and 3. Different studies on organizations, such as those concerned with status effects in interaction, examine how evolving relations among persons of different status are a function of different situations of work or encounter (1, 47, 85, 261; 3, 145; 7, 61), of individuals' experience

(2, 65), or of information available as well as specific representations activated during the encounter (3, 73; 5, 209). Studies on specific dynamics of power show its representation interferes with learning of social structures (2, 75), and that the tendency to reduce differences in power varies with the specific distances that characterize a situation of power relations (1, 107), the possibility of entering coalitions (1, 339) or effectuating comparisons with persons occupying the same rank (7, 317). Finally, one study of comparative nature (7, 151) deals with the interaction between mother and child in function of their belonging to different social categories.

Quite a high proportion of research involving levels 3 and 4 presents at the same time articulations with levels 2 and 1. It would seem that utilization of these higher but less traditional levels in experimental social psychology promotes articulations of explanations of different levels. In fact, as will soon be seen, few level 2 studies make links to level 1 processes. It is almost as if it is assumed that theories and models at level 2 are more self-sufficient, that individuals in the laboratory constitute a reality and that their interaction needs no other explanation. On the other hand, however, the dynamics of levels 3 and 4 are thought of as being actualized only within interindividual interaction and within individual appropriation; their exploration necessarily entails an articulation of interrelationships between levels. Still, it should be noted that all such relationships are not made explicit and elaborated to the same extent. It was, indeed, sometimes necessary to make an assiduous search to uncover them and, no doubt, quite a bit of additional work remains to be done, relative to the elaboration of links among the different explanative principles that are being employed. It seems in order, however, to mention some studies which can be considered as successful prototypes of articulation: a study of the interrelationship of a power model and the theory of social comparison (7, 317), a conception of the normative status of a minority influence agent and the consistency theory (5, 209; 6, 405), and respective status of groups and categorial differentiation processes during collective or individual encounters (3, 145).

Studies at level 2 tend to deal with relatively well explored domains of research for which there exist more systematic theoretical approaches. One important characteristic of these studies is that they invoke relationships between more than one explanation at the same level. Explanations in terms of group interaction, or social conformity are confronted with those more currently used in the area of group polarization (2, 401, 417; 3, 83; 4, 229); other studies (1, 97; 3, 9) try to arbitrate between explanations appealing primarily to reciprocity in interaction, and ones based on the accumulation of social credit, or between a theory based on exchange and another based on altruism. Such pairings of explanation at the same level of analysis are frequently made by experimental social psychologists; in fact, they seem to make up the bulk of their work, with interlevel articulations being much rarer. Of course, by adopting broader criteria, it is possible to uncover a number of implicit interrelationships between levels 1 and 2, for instance those that are characteristic of certain studies on group polarization (2, 221, 385), where the invoked explanation is the degree of involvement among group members in the interaction. But involvement here is much more a characteristic of the interaction than it is a process studied at the intra-individual level, given that the mentioned studies

compare certain types of interaction with other types. A great many concepts employed at this level, such as the notion of cohesiveness can indeed be studied in terms of its interactive characteristic, in terms of individual disposition, or as a combination of the two approaches.

One example of interlevel relationships developed in studies classified as level 2, connects an interindividual theory of equity with the intra-individual process of dissonance reduction (2, 273); another links the theory of individual development with processes of interindividual exchange (5, 385). The theory of social comparison is articulated with an individual theory of decision-making, based on signal detection (2, 109). An important mechanism in the study of attention in the individual, deccentration, is combined with the study of aggression (6, 459). The theory of attribution is employed respectively in relation to the stage of individual development (5, 339), personality characteristics (5, 425), or judgments where self-value is at risk (7, 275). Finally, one theory of cognitive functioning articulating social and individual coordinations is proposed (5, 367).

Among the 66 studies classified at level 2 then, only 8 include links with processes at level 1—such articulations are rather rare. This is not what one would expect given that for a number of years scholars, all claiming to be social psychologists, have developed either at level 1 or at level 2 extensive models which should have been defined one relative to another. In fact, one must conclude that two dominant approaches exist in experimental social psychology: one is primarily interested in models of information integration and consistency among cognitive elements that are present in the individual; the other one centres in particular on the different dynamics of interaction among individuals. The first is more interested in formalization and the latter in the production of interactions in situations construed *ad hoc*. These two approaches seem to have developed more or less autonomously. As far as levels 3 and 4 are concerned however, the situation is different. Systems of analysis at these two levels are not yet well developed nor explicated, excepting perhaps Tajfel and Turner's analysis of social identity, and Mulder's analysis of power. To a certain extent, analyses at levels 3 and 4 are not utilized for their own sake but are only employed because they make intelligible modulations or modifications in processes studied at levels 1 and 2.

THEORETICAL ARTICULATIONS AND DEPENDENT VARIABLES

Still other articulations, at least potential ones, remain to be uncovered. In a certain sense, I have up to this point been examining only the claims of social psychologists in the *European Journal*, or, to put it more precisely, I have categorized studies in terms of the principles they use as guides in their explanation of social reality. All attempts of explanation proceed by reduction, whether in experimentation or in field research, given that only certain aspects of social reality can be considered and others are thus necessarily neglected. In experimentation, theoretical approaches become exteriorized by material construction, that is, by the use of techniques which separate social reality into independent variables supposed to modify dependent variables. These variables

get their specific scientific status only in as far as they are linked to theoretical frameworks. These variables do not separate social reality in a chance manner; they point to the perspectives of the researcher in approaching that reality. They are tied to current analyses in a given domain and reflect, for someone who is already familiar with the most frequently utilized theories in that domain, the level at which these variables are most often analysed. A classification of independent or dependent variables at different levels, is one way of providing hypotheses about the levels that are the most appropriate for studying these variables. Again, a degree of arbitrariness is introduced with such a classification but the procedure is certainly no more arbitrary than the operationalization of a scientific concept while designing an experiment. And while it is true that social psychologists examine dependent variables at the level of the individuals' behaviours, evaluations and representations, this does not mean that these variables are related exclusively to individual systems of organization. They are also affected by the individual's participation in interindividual interaction, by the position he occupies in the wider social context and by his allegiance to ideological belief and norm systems. In this sense the dependent variables used by social psychologists may well be classified according to our four levels of analysis.

A comparison of the classification of dependent variables at the most fitting level of analysis (Table 4) and the actual theoretical level at which the authors approached those variables (Table 3) may give some indication on the extent to which both the present undertaking and that of the researcher are arbitrary. Here, too, I consider only one dependent variable per study, this choice being guided by the importance the author seems to attach to the diverse variables he studies.

There is quite a clear discrepancy between the classification of dependent variables and the previous classification of the explanatory principles, the latter containing 14 studies in which analyses at level 4 were invoked whereas only one study uses a dependent variable directly related to a level 4 analysis. This discrepancy may well be related to explicit or implicit relationships between different levels of analysis: it may stem from the fact that theoretical principles at a given level are invoked with the aim of accounting for phenomena (in this case dependent variables) whose analysis is ordinarily assessed at another level. Let us inspect more closely the differences between the two classifications. To facilitate this task, Table 5 is based on the two classifications.

The first column of this table indicates that out of 30 studies dealing essentially with variables at level 1, 25 also appeal to explanations at the same level, while the other five introduce explanations of a different level.

The first line in Table 5 points up differences of another nature: explanations at level 1 are used for effects that I consider to be fitting more specifically to other levels. However it should be noted that with 14 studies, all of which invoked principles at level 1 for the study of phenomena which I regard as belonging primarily to levels 2 and 3, I have the total number of cases which are shown at the upper right of the diagonal in Table 5. There is not, thus, any study in which level 2 and 3 explanation is invoked for phenomena I have placed at a respectively higher level. With only 14 studies, out of 142, practising a certain form of reductionism, one can hardly conclude that this

Table 4. Classification of dependent variables

Level 1

Attitude changes: 2, 45; 4, 159; 5, 441; 6, 227; 7, 465, 477.
 Learning: 2, 33, 75, 109; 4, 469; 5, 367.
 Inferences: 1, 327, 475; 5, 197; 6, 41.
 Cognitive biases: 5, 315; 6, 191; 7, 433.
 Scalar properties of responses: 1, 357, 519; 2, 145.
 Dissonance reduction modes: 1, 31; 3, 255; 4, 201.
 Individual organisation of social perceptions: 2, 437; 6, 71.
 Attention: 3, 125.
 Risk taking: 4, 313.
 Projection: 6, 175.
 Individual production: 2, 273.

Level 2

Social influence: 1, 201; 2, 5, 177, 285; 3, 53, 63, 193, 297, 427, 461; 4, 53, 261, 279; 5, 93, 167, 209, 237, 281; 6, 81, 149, 353; 7, 15, 97, 137, 221, 297.
 Responses changes after discussion: 1, 7; 2, 221, 255, 385, 401, 417; 3, 83; 4, 229; 6, 405; 7, 5, 175, 307.
 Interpersonal evaluations: 1, 179, 385; 2, 163; 3, 9, 271; 4, 125; 5, 289, 425.
 Aggression: 1, 59; 3, 159; 5, 35, 149, 229; 6, 459; 7, 189.
 Attributions: 5, 339; 6, 25, 429; 7, 265, 275, 451.
 Communications: 2, 372; 3, 73, 415; 5, 189; 7, 29, 151.
 Intergroup decisions: 1, 149, 215; 3, 27, 179; 5, 5; 6, 51.
 Games and sharing: 2, 129; 5, 297, 385; 7, 347.
 Social proximity: 1, 47, 85, 261; 4, 329.
 Helping: 1, 97; 4, 5; 6, 447.
 Social differentiations: 4, 17; 5, 457.
 Responses for self and for others: 3, 311, 403.
 Representations in interactions: 4, 137, 343.
 Group problem solving: 1, 311; 3, 389.
 Observation and interpretation of a non-verbal interaction: 2, 245.
 Interindividual similarities in social perception: 5, 351.
 Leadership style: 6, 475.

Level 3

Intergroup effects: 1, 235; 2, 19, 55, 347; 3, 145, 233, 281, 447; 5, 49, 323; 7, 165.
 Power distances reduction: 1, 107, 339; 7, 317.
 Representations of hierarchical relations: 2, 65; 3, 109; 7, 61.
 Choices of social control agencies: 7, 39.

Level 4

Conservative ideologies: 3, 221.

particular form of reductionism is a dominant characteristic of social psychology. It should be emphasized that, after all, the subject of these studies is constituted not so much by the dynamics of levels 2 and 3 but, essentially, by the individual's participation in those dynamics. Generally, the major type of reductionism in the journal's studies is manifested by a relatively scarce employment of variables at levels 3 and 4, and by the under-development of theoretical approaches that would be appropriate to these levels.

This does not prevent the number of studies in the cells in columns II and III below the diagonal on Table 5 being larger than those in the cells above it. One

Table 5. Levels of theoretical predominances and dependent variables*

Theoretical predominances	Dependent variables			
	I	II	III	IV
1	(N : 25)	2, 245, 285, 372; 3, 389; 4, 329; 5, 35, 167; 6, 25, 81; 7, 137, 221, 265, 307	2, 55	(N : 0)
2	2, 109*, 273*; 5, 367*	(N : 63)	(N : 0)	(N : 0)
3	2, 75*	1, 47*, 85*, 261*; 3, 73*; 5, 5*, 209*; 7, 151*	(N : 15)	(N : 0)
4	4, 313	1, 7*, 149*; 3, 27*, 271*; 6, 405*, 429*, 447*; 7, 5*, 189*, 451*	3, 109* 7, 39*	(N : 1)

*References accompanied by *designated theoretical articulations.

is led to conclude that theoretical principles at levels 3 and 4 are used more frequently to explain changes in variables at lower levels than are theories of a lower level used to explain variables at a higher level.

The 38 interrelationships presented in Table 5 are not necessarily of the same nature as those described above. Those formerly discussed dealt with combinations of different explanative principles; these just mentioned utilize principles at one level in order to approach phenomena of another level. We are therefore dealing primarily with a number of potential articulations, or a probability that, by the intermediary of the utilized paradigm, explanations at one level will be confronted with explanations at another level. This is what, in fact, has been taking place: out of 40 interrelationships found by the first method, and 38 found by the second method, 23 have been detected by both methods. There exists therefore a link between the interrelationships defined by our two criteria but, on the other hand, these numbers indicate also that 17 theoretical articulations have utilized dependent variables of the same level as the highest level of explanation in the study and, inversely, that 15 potential articulations have not been realized at the theoretical level. One can see however, that practically all potential articulations not realized at the theoretical level are studies which propose an explanation at level 1 for phenomena I consider to be typical of another level. This might indicate that reductionism proceeds implicitly rather than explicitly.

ARTICULATIONS OF VARIABLES

In the preceding examination of dependent variables, an effort was made to respect the theoretical intentions of the authors while detecting potential, explicit or implicit, articulations. Having classified the dependent variables at

levels I thought most appropriate, I nonetheless returned to the invoked theoretical frameworks to uncover relationships. This method indicated that about one out of 10 studies applies—without any apparent questioning on the part of the authors—a ‘reductionist’ explanation by using principles of a lower level for analysing phenomena which are primarily relevant at a higher level of analysis.

However, examining discrepancies between a theoretical approach and studied variables is not the only way to uncover articulations made insufficiently explicit, or missed in the examination of invoked explanations. If there is an articulation in a given experiment, one could well expect to find it in an examination of level differences among utilized independent variables—since, by definition, the experiment’s purpose is to study the effects of those variables, to make comparisons between them, and often to measure combined effects or the interaction between those effects. Similarly, an articulation can be reflected by the use of independent and dependent variables on different levels.

Thus, I have classified all the independent variables according to what seemed their most appropriate levels of analysis, and have made an inventory of those studies in which independent variables are manipulated at more than one level (Table 6). These studies also have differences between at least one of the independent and one of the dependent variables. But there are also studies

Table 6. Experiments with independent variables of different levels*

Levels	
1 and 2:	1, 385; 2, 109*, 177, 255, 437; 3, 53, 63, 83, 193, 255, 297; 4, 53; 5, 209*, 229, 281, 289, 339*, 351, 367*, 385*; 6, 25, 81; 7, 265
1 and 3:	2, 19*, 65*; 4, 469; 7, 97
1 and 4:	3, 271*; 5, 167; 7, 307
2 and 3:	1, 47*, 85*; 2, 245; 3, 73*, 145*, 311, 427; 5, 49*, 93, 323*; 7, 61*, 151*, 317*
2 and 4:	1, 7*; 5, 457; 6, 429*, 447*; 7, 5*, 189*
3 and 4:	3, 109*; 6, 405*; 7, 451*

*References accompanied by * designate theoretical articulations.

Table 7. Experiments in which differences of levels exist only between dependent and independent variables*

Independent variables	Dependent variables		
	I	II	III
1		2, 163, 285, 372; 3, 389; 4, 329; 5, 425; 6, 459*	2, 347*
2	2, 45, 273*, 417; 4, 137, 229, 279, 343; 7, 275*		
3	1, 235*; 2, 55, 75*; 3, 281*; 6, 71	1, 107*, 261*, 339*	
4			7, 39*

*References accompanied by * designate theoretical articulations.

which only handle level differences among independent and dependent variables (Table 7). I am considering independent and dependent variables as segments of the real world which can be integrated in theoretical frameworks; the author's use of the framework is not considered as necessarily the most appropriate in this case. Naturally, it is not quite possible to bracket the authors' theoretical intentions completely. For instance, in order to decide whether one independent variable is really employed to study an effect rather than to act as a control for it—as is frequently the case when subjects of both sexes participate in an experiment—one ought to verify if the authors had conceptualized the difference between variables or categories of subjects.

Let us take a look at the first result of this new classification: while only one half of the studies in the sample use paradigms with variables at different levels, practically all the studies with a theoretical articulation do so. One important exception are the studies that use matrices of reward while examining intergroup effects (1, 149; 3, 27; 5, 5); in my estimation, independent and dependent variables in these latter studies belong to the same level, even if they articulate interindividual and intercategory processes. This type of research constitutes a borderline case, due to the fact that I have placed at level 2 purely intercategory processes, while they belong to level 3 when dealing with social differences between the two categories that reflect a different position in the network of societal relations.

Considering the studies not yet detected as theoretical articulations, one uncovers a number of new studies in which variables operate at the same time at levels 1 and 2. Table 7 indicates an important characteristic of these relationships between variables at levels 1 and 2: when the variables at these two levels are manipulated together, they have as often the status of independent as they do of dependent variable. The more detailed description of these studies reveals that the same variable, for instance modality of insertion within a social interaction, could equally be used either as a dependent variable or as an independent variable in terms of its effect in intra-individual or interindividual processes. Thus many effects which go in both directions between levels 1 and 2, are produced in several paradigms: we are dealing here with local causal links requiring integration within theories dealing with circular or spiral causalities. But the paucity of theoretical articulations in studies manipulating variables at levels 1 and 2 together shows that such theories are still rare.

The studies combining variables at levels 2, 3 and 4 have all been considered as articulations of theoretical levels, the exception being five studies which use level differences between their independent variables. We also find, with this method of detection, that the theoretical articulations are relatively more frequent when variables of a higher level are manipulated together.

CONCLUSION

The conception of four levels of analysis and of their articulation is not applicable only to case-types chosen *ad hoc*; it offers a grid which can equally be applied to a set of quite diverse studies in experimental social psychology. Different uses of an analysis in terms of levels are shown to be possible: while it

serves primarily the study of theoretical approaches, it can also be used for examination of paradigms, and discrepancies between results in various uses of the grid seem to give useful indications for the development and elucidation of new articulations.

In ending this article, I will describe in more detail the example of one study which has introduced a level difference between independent and dependent variables without proposing a theoretical articulation of these levels. This study illustrates well the usefulness of different methods of classification; furthermore, the approach taken in this study by its authors Frey and Irle (1972) can be compared to a quite different approach, undertaken by another author studying the same phenomena (Poitou, 1974).

In the summary of the study (2, 45) it is stated:

'Dissonance theory and incentive theory call for different predictions concerning the relation of reward and attitude change after a person has performed some counter-attitudinal behaviour. According to dissonance theory a negative, and according to incentive theory a positive relationship is expected. An experiment was conducted in West Germany testing the interactions of choice versus no choice and public versus anonymous (private) essay-writing. A dissonance effect was predicted for the choice/public condition and an incentive effect for the no choice/anonymous condition. The results support these predictions' (Frey and Irle, 1972, 45).

This study has been classified at theoretical level 1: it essentially appeals to intra-individual processes, which are described by dissonance or by reinforcement theory. At the end of the introduction, however, another notion, the concept of self, is proposed:

In taking up the reformulation of dissonance theory (see Aronson, 1966, . . .), which stresses that dissonance is aroused, when the self-concept of a person is involved or threatened we can say that the self-concept of a person is not threatened, if the person has no choice to refuse the task, and similarly self-concept is not or little threatened, when the counter-attitudinal behaviour is entirely anonymous. But when a person is free to decide against compliance one can argue (. . .) that he feels personally responsible for some negative consequences to himself or others. The self is involved, and therefore a dissonance effect is expected. On the other hand, public commitment should attack the self-concept more, as subjects do not only fear negative consequences to others, but additionally some negative sanctions from their peers (. . .). Briefly, choice and/or public commitment should produce more dissonance than no choice and/or anonymous condition' (*ibid.*, 47).

These considerations also seem to deal with level 1 phenomena. The independent variables, on the other hand, have been classified at level 2; they are concerned with the importance of the reward the experimenter provides for the subjects, and with the nature of subjects' commitment towards the

experimenter—and this with or without choice, anonymous or public. The dependent variables, relative to the degree of attitude change in the direction for which the subjects have developed their arguments, have been classified at level 1.

Even though the gap between the level of independent and dependent variables seems to indicate the possibility of a theoretical articulation, a sharper scrutiny of the mentioned study did not make me change my initial classification. With the notion of self-concept, the authors have certainly introduced one implicit theoretical articulation: the situational variables of choice or no-choice, of anonymity or non-anonymity, have a meaning only in as far as they effect the self-concept. There remains a need for clarification of its intervention in the dissonance effect. The same authors write:

‘Concerning the mechanism of the effects little can be said up to now (. . .) but we tend to support Aronson’s interpretation (1966) that there are two conflicting motives: Under certain conditions—with high dissonance—the dissonance motive is dominant and under other conditions—with low or without dissonance—the reinforcement motive is dominant, i.e. high incentive serves as a reinforcer to accept the arguments and to change the attitude’ (*ibid.*, 51).

This, to say the least, looks like a tautology rather than an explanation. Further on, after having made an inventory of consonant and dissonant cognitions, the authors add:

‘But nevertheless the true mechanisms which produce a dissonance or an incentive effect remain unclear’ (*ibid.*, 52).

The authors believe that a solution can eventually be found by working at the level of personality variables.

Poitou (1974) looks elsewhere for this problem’s solution. He, too, begins with a distinction between situations ‘with choice’ and situations with ‘no-choice’. One important characteristic of the former is their indication to the subject that they are really free to get involved in an action which, otherwise, few persons approve of. In this way, the value of subjects’ ‘intimate’ conviction is at issue and thus, subsequently, subjects try to establish a correspondence between behaviour and attitudes. The promised rewards will, therefore, appear as means of pressure

‘destined to win over the resistance of the individual who considers himself to be free’;

on the other hand, however,

‘the sanction can constitute an excuse for the subject’s conduct. On this point, thus, one rejoins the views of dissonance theory, which takes into consideration that the sanction as perceived by the subject is a justification of the subject’s conduct. But, to the extent that the need

for consistency between convictions and behaviour is not admitted as being *internal* to the subject, one moves away from that theory' (Poitou, 1974, 67).

Therefore, the consistency between behaviour and opinions may be accounted for according to the laws of cognitive dissonance when the liberty of the choice is emphasized, but it would still only be a social effect produced by the experimenter.

What happens in 'no-choice' conditions? In these conditions the experimenter proceeds as if it were taken for granted that people act independently of their beliefs. Within this context, the meaning of the sanction would be different

'since it is registered in different normative contexts' (*ibid.*, 67).

The subject will move toward the opinion he is induced to defend when a reward is present:

'In this way he preserves the illusion of his subjective autonomy, because in doing so, he proves that he acts by conviction' (*ibid.*, 67).

But where does the subject's illusion of his subjective autonomy come from, particularly

'when the experimenter frees the subject from his obligation of consistency' (*ibid.*, 70)?

Is there, despite all, the existence of an individual need for cognitive consistency?

Poitou (*ibid.*, 70) sees no place for such a hypothesis:

'But the experiments at issue also undermine the fundamental hypothesis of Festinger's theory, i.e. of the existence of an individual need for cognitive consistency. When one confronts the results of situations 'with choice' with those of 'no-choice', one is led to reject the idea that cognitive dissonance would constitute a state of internal motivation in the subject, resulting from the degree of psychological or logical consistency between his attitudes and his conduct'.

The fact that, in general, few subjects refuse to act against their beliefs would be a proof that dissonance does not play the role that Festinger attributes to it.

Thus, Poitou rejects an intra-individual explanation of need for consistency that would be at the basis of dissonance reduction, and argues that dissonance effects or reinforcement effects would result, in final analysis, from an interaction between situational characteristics and general conceptions propagated within a given society. In my terms, he elaborates an articulation between levels 2 and 4. I believe, however, that an articulation with level 1 is also necessary. More specifically, I think that Poitou's interpretation cannot stand without a hypothesis postulating a 'need for consistency', which is

probably constructed or activated socially in the individual, and which is certainly modified by the aspects of the situation and reflects, at the same time, a certain conception of man that is characteristic of a given society.

I have contrasted these two approaches to the same phenomenon in order to illustrate the characteristics of two different enterprises: one operates primarily at the level of variables and tries to clarify them without integrating them in a new theory; the other elaborates new syntheses with no recourse to experimental verification. The former manipulates, by preference, intra-situational variables; the latter broadens the frame of the reflection. My attempt to systematize the study of research through level analysis shows that experimental social psychology aiming at a synthesis of these two approaches is both justified and possible.

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RESUME

La nature de l'explication en psychologie sociale expérimentale est l'objet de multiples controverses. Afin de faire avancer le débat cet article présente une grille d'analyse pour permettre une étude plus approfondie des travaux actuels des psychologues sociaux expérimentalistes. Quatre niveaux d'explication sont distingués selon que ces travaux étudient des processus intra-individuels (niveau 1), des dynamiques interindividuelles mais intra-situationnelles (niveau 2), l'effet des positions sociales dans une interaction situationnelle (niveau 3) et l'intervention de croyances générales (niveau 4). Une caractéristique importante du travail expérimental est la possibilité d'articuler différents

niveaux d'analyse dans une même recherche et de dépasser ainsi l'ancienne dichotomie entre explications 'psychologisantes' et 'sociologisantes'. L'ensemble des expériences publiées dans les sept premiers volumes de l'*European Journal of Social Psychology* est examiné dans ce cadre d'analyse.

ZUSAMMENFASSUNG

Sozialpsychologen streiten viel und heftig darüber, welchen Erklärungswert Experimente haben. In dem vorliegenden Artikel wird ein Analyseraster vorgestellt, das ermöglichen soll, die Arbeit experimenteller Sozialpsychologen eingehender und begründeter zu untersuchen, um damit die Debatte voranzutreiben. Vier Ebenen der Erklärung werden unterschieden: die Erklärung (1) intraindividueller Prozesse, (2) interindividueller Prozesse und ihrer Dynamik in einer bestimmten Situation, (3) des Einflusses, den die situationsunabhängige soziale Stellung auf Interaktionen ausübt, und (4) der Einflußnahme von allgemeinen Überzeugungen. Ein wichtiges Merkmal experimentellen Arbeitens ist die Möglichkeit, verschiedene Analyseebenen in einer Studie zu verknüpfen und auf diese Weise die alte Dichotomie von 'psychologisierenden' und 'soziologisierenden' Erklärungen zu überwinden. In den ersten sieben Jahrgängen des *European Journal of Social Psychology* veröffentlichte Experimente wurden nach diesem Raster untersucht.

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