Original publication in:
Lawyers on Psychology and Psychologists on Law / Peter J. van Koppen. - Amsterdam: Swets & Zeitlinger, 1988. - S. 67-82. (Series on law and psychology ; 1) ISBN: 90-265-0977-4

Chapter 7

Implicit psychological theories in legal thought on sentencing and liability by Wilfried Hommers

The moral rule to undo harm done complements the moral rule not to do harm. In modern criminal and civil law, the legal concepts of 'sentencing' and 'liability' represent the moral rule of undoing harm. Both concepts are embedded in a variety of codified rules, and an extensive legal literature discusses the rules and related problems and issues.

The legal form of the moral rule to undo harm changed over time. Many of the terms which today denote the various aspects of undoing harm in law and in everyday life — like restitution, compensation and reparation — all have their origins in Roman law and some have parallel concepts in Germanic law (Schöch, 1987; Tunc, 1983). Also, the legal rules on undoing harm vary across cultures (Honore, 1983; Stoll, 1986). Therefore, the question arises whether or not, and, if so, which psychological causes are related to these sets of rules and legal thought and their variations.

This chapter[1] goes beyond the unspecified direction of this question. Since modern criminal and civil laws are the products of legal thought, which has been in the process of development for several thousand years, it is assumed that looking at this development as it is documented (in the history of law and in comparative law) and analyzing its products in the codified law, may be informative for the psychological theory of undoing harm.

The general approach of the present paper rests on two never-debated assumptions: (1) legal thought had its beginning in the moral intuitions of everyday life more than 4000 years ago and (2) through 3500 years of written law, legal thought developed into an expert system, not only on theoretical

[1]The research was supported by a grant of the Deutsche Forschungsgemeinschaft, Bonn-Bad Godesberg, to the author: HO 920/2-2. Help with finishing the manuscript provided M. Pirkner. Special thanks are due to N.H. Anderson and an anonymous reviewer for commenting on an earlier draft.

grounds (abolition of inconsistencies when detected) or on prescriptive grounds (changed purposes of law makers) but also due to law makers' consideration of various kinds of experience. Thus, the legal rules which were developed may have multiple facets which result in different interpretations when discussed from the various perspectives of law-analyzing scientists. One overlooked consequence, however, may be that legal notions and implicit theories incorporate statements which are near to or equivalent to scientific truth. Therefore, the analysis of the explicit legal rules and the implicit legal theories of 'sentencing' and 'liability' may have heuristic value for the cognitive science of the everyday morality of today, such that descriptive and prescriptive moral thought could interact in a new way.

Legal rules are certainly made by experts for application by experts. Additionally, they are prescriptive. Accordingly, there are two principal outcomes of research guided by implicit legal theories: congruence and difference. The first possible outcome is that the congruence of implicit legal theories and cognitive science of everyday morality will be discovered. In that case, a remarkable consequence would arise from decisions by judges which conform to normative rules which have a structure similar to empirical theories found among laymen. The prescriptive rules may be viewed as introspective descriptions of intuitive cognitive processes, since judges are expected to follow rules only as long as this is feasible. Therefore, in the case of congruence, the assumed influence of normative theories on judges demonstrates that prescriptive thought is not needed to implement judgement processes structurally different and assumed to be better than those of laymen, but to avoid insufficient application of the available rules in order to avoid errors. Thus, congruence of prescriptive and descriptive approaches may have practical implications as well as heuristic implications.

With regard to the second principle — outcome — one may wonder whether there might be any consistency between everyday morality and an expert system at all. Differences, rather than similarities, between them are more likely to exist in valuation and in cognitive processes. However, no attempt will be made to verify that prescriptive rules are descriptively valid or to evaluate empirical results against prescriptive statements, as has frequently been done in decision research, e.g. on conservatism (Edwards, 1968, which was critically discussed by Cohen, 1981) or in equity research (Mellers, 1982). Instead, rather general features of implicit legal theories are sought to give some new impetus to psychological research on moral thought. The expected impetus rests on the analogies found between descriptive and prescriptive theories of information integration. Therefore, this chapter will begin with a general overview of those analogies.

Descriptive and prescriptive theories of information integration

The legal literature suggests that a primary characteristic of legal thought on sentencing is its focus on valuation and integration of evidence. Even simple cases typically involve multiple pieces of information, each of which has to be evaluated for its implications with respect to the judgment to be made, and all of which have to be integrated to arrive at a final judgment. This is true for the task of sentence choice among a variety of qualitative sanction alternatives, as is inherent in the German criminal law for juveniles and in some Anglo-Saxon law (Pennington and Lloyd-Bostock, 1987). It is also true for fixing recovery proportions in cases of civil liability among several parties and for the fixing of the sentence quantum for adults.

Cognitive science developed a descriptive theory of information integration (see Anderson, 1981, 1982, for a complete presentation of the cognitive approach of the information integration theory). Although this approach is not restricted to morality, it is remarkable how similar basic concepts look in both the descriptive and the prescriptive approach. This section will attempt to give an impression of these similarities and will discuss them in terms of parallels and contrasts between the cognitive approach to everyday morality and the legal normative approach to applied morality.

Parallels and contrasts are clearly visible in two fundamental composition schemes: for sentencing in the prescriptive approach and for blame in the descriptive approach. The sentencing scheme mentioned by Maurach *et al.* (1984) states that fixing the amount of punishment in criminal cases is a joint function of the two components 'act' (*Handlung*) and 'effect' (*Erfolg*). The 'blame' scheme of Anderson (1983) states that everyday moral judgement is a joint function of 'responsibility' and 'consequences'. Both schemes are similar, because the 'act' component is conceptually congruent with the responsibility component. Both schemes differ in an important aspect, however. That of Maurach *et al.* (1984) categorizes the list of sentencing factors given in sentencing Article 46 of the German criminal code. These factors are divided into two classes which ought to interact by law if present in a criminal case. No precise statement is made on how that interaction must occur. Only the connecting word 'and' is used to denote the function of the composition. The descriptive blame scheme states similarly that both components influence moral judgements, but the specific interest lies in discovering how this joint influence operates in everyday morality.

Thus, there are differences in the direction of inquiry. The normative theories provide prescriptions for enhancing justice in reality, while the descriptive approach strives, inductively and deductively, to develop theory based on all forms of observable moral judgements, that is on everyday morality as well as on legal practice representing expert morality. Of course, one would expect

experts' judgements to differ from those of laymen, since the former might have been influenced by legal rules whereas the latter are not assumed to. But this contrast in the direction of inquiry is clear, even if a certain rule is descriptive for both judgements. This combination of parallel and contrast underlies the following discussion of the basic concepts of the descriptive theory of information integration and the related notions of legal thought.

Knowledge systems

Both integrational approaches operate on a knowledge system. A knowledge system typically contains both declarative knowledge about stimuli and goals, and procedural knowledge for utilizing that declarative knowledge. The typical contribution of the descriptive information integration approach is made by combining research on procedural aspects of the knowledge system with research on declarative aspects of the knowledge system. Within the descriptive information integration approach, the procedural aspect of the knowledge system may vary from person to person, although they are considered to be substantially invariable, at least over some time period, for each person. This rule of invariability provides a theoretical foundation for value analysis by means of functional measurement methodology.

In contrast, processes should obey generally shared rules in the normative legal context, as is clear if one looks at the law of civil and criminal procedure. As the following analysis of the implicit theories of sentencing show, the normative rule generally also seems to be true for the normative rules on sentencing in German law. Some cases, however, may be very complicated, that even experts will use a simplified scheme in lieu of the prescriptive scheme of integration of evidence.

Finally, the essential difference between legal thought and the cognitive science of everyday morality lies in declarative knowledge. Judges, as well as lawyers and prosecutors, are well trained in the use of codified penal and civil rules and in civil and criminal legal procedure, but even laymen may accept these rules if they are properly explained. Therefore, legal thought is usually not, and should not be, the arbitrary declarative knowledge of a professional minority. Instead, it should coincide with everyday morality to a sufficient extent. The effective difference lies in the ease of retrieval and the reliability and controllability of its products.

Valuation

Parallels and contrasts also appear in the concept of value. The parallel is found in the transformation of objectively given information (the proven facts of the case) into subjective values which are not directly observable, but which are relevant to the judgement. The contrast is that the approach of information integration places the measurement of the intermediate values on a firm foun-

dation, whereas the normative rules of legal thought are not concerned with these intermediate values *per se*. Nevertheless, these values may become more interesting for legal thought when it becomes known that there is a method for their measurement.

Additionally, there is a similarity in the personal character of valuation and in its contextual determination. In a normative legal context, valuation may be acceptable as being in principle personal, although much valuation is constrained by codified sentencing frames or by sentencing guidelines. Nevertheless, the concept of judge's discretion shows that there is room for personal valuation which is not regarded as error or personal deviation. This may additionally be seen in divided court decisions, which presumably result because different judges give different values and weights to the same evidence.

Integration

The primary focus of both normative and descriptive theories is on processes of information integration, as befits a world with multiple causes and determinants. The basic, and empirically well-supported, claim of information integration theory is the existence of a general cognitive algebra operative in integration processes. This claim parallels legal theories on sentencing and liability which, according to observations presented below, contain rudimentary features of complete cognitive algebraic rules. Although judicial theories ought better to serve the function of reaching the goal of justice, those rules may be interpreted as demonstrations of an operative normative legal algebra, an idea comparable to the hedonistic calculus of J. Bentham (1748-1833) and J.S. Mill (1806-1873).[2]

Weighing as functional perspective

Prescriptive legal thought and descriptive cognitive science share the notion of *weighing*. In particular, the notion of weighing is ample evidence of such analogies, since weighing is the common essential for the shared focus on 'goal-directed' behaviour. The cognitive science of morality is concerned with goal-directed behaviour, since everyday morality influences political, educational and other behaviour of individuals. Likewise, normative theories of jurisprudence are concerned with influencing behaviour. A focus on the goal-directed quality of both everyday morality and normative morality leads to a functional perspective: processing of information is heavily dependent on its function in goal attainment. It follows that moral judgement, as well as sentencing is contextual and constructive: contextual, since its determinants are the relevant stimulus information and the goals; constructive, since the variation of stimulus effects are determined by their weighing in dependence of the goals.

[2]Jeremy Bentham: *Introduction to the principles of morals and legislation* and John Stuart Mill: *Utilitarianism*.

A remarkable property of the descriptive information integration approach is that it can estimate the weights of qualitatively different attributes on a common ratio scale. Comparison of the importance of information for various goals is not confounded by scale values and thus becomes possible. This can be achieved by putting restraint on the weights. Restraint is not used in the ordinary concept of weighing, either by laymen or in statistics (regression). But restraint on weights may be a consequence of the legal concept of weighing, where weighing has to occur within the sentencing frame and other aspects of legal sentencing prescriptions, for instance in the notion of the average case. Thus, the information integration approach may be useful for the meaningful comparison of weights operative in sentencing judgments of persons with different punishment goals. Also, the averaging model may be operative in normative and actual legal algebra, as this chapter intends to show.

Validity tests for rules

Descriptive information integration theory distinguishes several rules. Each hypothetical rule has typical features which provide a validation criterion for the other rules. Legal thought, however, has excluded such empirical tests for the validity of the integration processes, although normative legal theories on sentencing strive to reduce disparity. At present, a written justification of sentence has to be given to allow for appeal. But, Bauer (1984) and Hassemer (1983) showed that the written justifications of sentences were not related to the sentence severity. Thus, there is no valid information available on the process of sentencing, although, of course, gross errors in either justification or sentencing can be corrected in appeal. In particular, there is no valid information on how sentence quantum should be fixed. That would allow for a direct test of normative legal algebra in judicial settings. Empirical cognitive science may provide a remedy.

In descriptive information integration theory, the most frequently validated rule is the averaging rule: $R_{ijk} = w_a.A_i + w_b.B_j + w_c.C_k$, with $w_a + w_b + w_c = 1$. This rule is predominant in the descriptions of judgements on social information. The characteristic test of the averaging rule is provided by the comparison of sets of information of varying complexity (partial versus complete). For example, the effect of varying the information A_i in judgements on the combined information (A_iB_j) should be larger than the effect of varying A in judgements on the more complex information $(A_iB_jC_k)$, where the terms in brackets denote factorial combinations.

Other rules, like the fractionalizing rule, $R_{ij} = A_i/B_j$, would not show this effect. Instead, the fractionalizing rule would graphically plot as curves with a common intersection, which is not predicted by the averaging rule (see Anderson, 1981, 1982, for more detail on the issue of rule assessment). If it can be shown that the implicit legal theories contain valid process assumptions, these tests of integration rules might become a remedy for the uncontrolled

state of the sentencing process. Thus, the gap between the prescriptive and the descriptive information integration theories could be bridged.

Legal features of sentencing and liability

Within the general similarities of prescriptive and descriptive theories of evidence or of information integration there are several specific features of legal thought which lead to hypotheses. The following discussion, therefore, demonstrates the heuristic value of legal morality.

Undoing harm as stimulus and response

One strategy to undo harm is to let the harm-doer pay his debt to the victim. This can be done in several ways, for instance by apology (which may not be sufficient but is better than nothing), by giving some material award (which may serve several purposes and may be valued according to the wealth of the harm-doer) or by repairing the damage in kind (which may sometimes be not feasible). For the present purposes the term 'recompense' is used to denote all these possibilities.

Two different functional aspects of recompense are contained in the civil and criminal laws of modern countries. Assignment of liability is the major legal consequence in civil law, both for contracts and under tort. This serves both punitive and restitutive purposes. In the notion of liability, recompense is functional as response; in most cases as a coerced response, an obligation. Specifically, in German law liability serves two functions: restitution and smart money. Both have a different purpose: indemnifying (restitution) versus satisfying (smart money) the injured party. Restitution is ordinarily meant to be *restitutio in integrum* in German law. Thus, indemnification will be in kind, if possible, but, if restitution in kind (*natural restitutio in integrum*) is not possible, recompense in the form of a monetary award to the victim (the extent of which is strictly related to the damage in order to avoid enrichment) is a solution to the problem.

In criminal law recompense is a factor which determines, among other things, the quantum of the sentence. Thus, recompense is functional as stimulus. In criminal law, even incomplete components of recompense like apology, attempts to repair or some form of active remorse are relevant for sentencing. Other aspects, such as the extent to which recompense is voluntary, or the extent of self-involvement, are relevant as well. Furthermore, reparation of the harm by the harm-doer may prevent the prosecution from pursuing the case. Thus, recompense as stimulus appears under the broader notion of recompense and has several effects, e.g. mitigation, diversion and mediation.

In contrast with the civil law, undoing harm is functional as a stimulus and as a response in criminal law, since for crimes which are severe enough, some form of recompense can still appear to be connected with punishment.

Moreover, in criminal law some aspects embodied in the civil law notion of liability to the victim appear in connection with punishing the harm-doer. Thus, these aspects can be manipulated independently from punishing, whereas in civil law the punitive aspect of liability to the victim is confounded with the restitutive aspect. As a consequence, psychological research using recompense as a stimulus and examining its influence on punishment may be the best way to understand the psychology of sentencing and liability.

Non-additive nature of mitigation-aggravation information

In the normative theories of legal thought, the integration of mitigation-aggravation information in sentencing appears to have the structure of non-additive composition rules. This is demonstrated by the sentencing theory of the German legal scholar Von Linstow (1974). He proposed various formulae, from a total of 45 variables, for calculating the punishments for all possible cases of traffic violations. Recompense, as one representative variable of mitigation, was incorporated as a multiplicative factor with values between .8 and 1.0. Thus, the non-additive rule was stated in a similar way to the following abbreviated form:

$$Deserved\ punishment = (Culpa + Damage) * Recompense$$

In this formula, values of recompense less that 1 would reduce the deserved punishment. However, this reductive effect of values lower than 1 would be greater for high amounts of damage or for severe culpa levels. Thus, although the subjective values of recompense might be constant, their effect is not.

Other multiplicative mitigation factors were the degree to which the victim was at fault (.1 to 1 in range) and the damage suffered by the harmdoer (.5 to 1 in range). Similar multiplicative influences were proposed for the aggravating factor of blood alcohol level (1.3 to 1.65 in range), the degree of the purposeful disregard of driving incapability (2.05 to 3.0 in range), and for some form of aggravating behaviour after the traffic violation (1.0 to 1.275 in range).

It is remarkable is that some factors are in part additively and in part non-additively related to other factors. For example, the criminal history of the offender was incorporated as a factor with a varying relation to other information. For some factors, like post-occurrence behaviour or amount of damage, the normative composition rules for the various offences were additive, for others, like harm-doer's self-damage, the composition rules state a multiplicative relation. Thus, the specified formulae of Von Linstow (1974) provide a complex structure of normative composition rules. This complexity has two sources: the amount of relevant information and the type of the composition operation.

Multiplex-response

Some types of harm are followed, not only in German law of course, by two legal reactions directed towards undoing that harm: one more or less punitive, the other more or less restitutive. This happens with those harms listed in the criminal code, and with those malicious or bodily injury torts for which punitive damages (Prosser, 1971) or smart money might be applicable. This dual nature of this reaction is a solution which brings justice to both the victim and the harm-doer. A characteristic of the two responses is that they combine in some form into a loss to the harm-doer. This might be necessary for the purpose of deterrence or, alternatively, it may be experienced only by the harm-doer as a summed suffering.

This dual nature of the legal reactions in some cases is fundamentally different from the multivariate responses frequently used in research on social cognition (Darby and Schlenker, 1982; Miller and McCann, 1979). Multivariate responses do not add up. On the contrary they may possibly be redundant. To note this difference from multivariate responses, the notion of multiplex-response is used. As a minimum requirement for the application of the multiplex-response, both liability and pure punishment may be used as a duplex-response. Thus, studying undoing harm empirically using a response approach may be promising when a duplex-response is employed, where the responses of punishment and of restitution are combined. An extreme case would be the application of a triplex-response — where punishment, restitution and smart money or punitive damages are used in combination — to study the cognitive structures of undoing harm.

Information integration by weighing

A fundamental legal concept developed for its information integration task is the concept of 'weighing'. However, there are two concepts of weighing, at least in German civil and German criminal law commentaries, although the processes are called the same for both: *Abwägung*, i.e. integration by weighing. The existence of two legal notions of 'integration by weighing' follows from several observations.

First, there are different lists of factors which are relevant for the integration by weighing in legal liability judgments and in legal sentencing judgments. For liability judgments, the relative likelihoods for the causation of the damage have to be taken into account, primarily when there is a fault of the injured party involved or when there are several tort-feasors. Comparisons of culpability and the existence of strict liability are also relevant factors (Honsell, 1977; Schlegelmilch, 1986). For sentencing, §46(2) of the German penal code (StGB 1975) provides a list of relevant factors, e.g. the motives and goals of the harm-doer or his behaviour after the act.

Secondly, in commentaries on the German civil code, integration by weigh-

ing for liability for immaterial losses, i.e. for smart money decisions, is explicitly described to be different from the procedures prescribed for material liability where *restitutio in integrum* holds as a basic principle (Rebmann and Säcker, 1979). Also, when smart money is awarded, it is added to the material restitution. Unfortunately, the commentaries do not say more precisely how weighing in smart money differs from integrating weighing in material liability. However, from the double function of smart money (restitutive indemnification and punitive satisfaction) may follow that the integration by weighing prescribed for smart money decisions is similar to the prescribed sentencing process. Thus, there is ample evidence for the existence of two legal notions of integration by weighing, even in civil law.

Thirdly, the two commentaries show that an implicit compound hypothesis can be derived on the structure of the impact of fault of the injured party on criminal sentencing decision and on civil liability decisions. The result is a differential effect hypothesis and a differential integration rule hypothesis, respectively, operative on the duplex-response. Each of the relevant observations will be outlined in the three sections that follow.

Fault of the injured party

Fault of the injured party appears to be primarily a concept of private law, but this concept is also relevant to criminal law. Moreover, the related notion of contributory negligence is known since the *Lex Aequilia* in Roman law (Radin, 1927: 144). There, and in common law, contributory negligence excludes liability. According to Deutsch (1987) the concept of weighing the fault of the actor and of the injured became dominant in the German laws of the 19th century. Today a social component is associated with the consideration of the fault of the injured party as, under strict liability, only gross fault of the injured will reduce the restitution to the injured (Deutsch, 1987).

The fault of the injured party is present in different ways in the German codes on torts and on punishable acts. The concept of fault of the injured party appears explicitly in the German civil code. In §254 of the German civil code of 1900, the liability for the damages in those cases where a fault of the injured party exists is explicitly regulated. In the German criminal code of 1975, the fault of the injured party is only indirectly present. It is subsumed under the broader notion of 'harmful consequences of the act for which the harm-doer is responsible' as a factor which reduces the measure of culpability. Thus, not only its presence in both parts of the delictual law, but also the different importance of the concept for both parts are noticeable aspects of the concept of fault of the injured party in the written German law.

Fractionalizing liability

Normative theories on combining information in liability decisions have a specific form in German legal thought. In the case of a fault of the injured party, 'integration by weighing' means that the loss has to be partitioned among the involved parties (Rebmann and Säcker, 1979; Schlegelmilch, 1986). However, the German term for partitioning does not necessarily mean distribution, but is also related to an algebraic division operation. Thus, the more general concept of loss distribution which may follow one or the other of various procedural rules found for gain distributions (Harris, 1976; Vecchio, 1984) is specified by an algebraic operation.

The association between weighing in liability decisions and an algebraic division operation is affirmed by practice of the courts. The courts use fractional numbers and they follow, in cases with several independent harm-doers and only one injured party, idiosyncratic rules which do not correspond to any simple rule of mathematical algebra. For example, in the case where B causes three-fifths of the damage to A, and C two-thirds, it turns out from making the nominators of the fractions equal that A gets seven ninths in total from B and C (Schlegelmilch, 1986: 53). Therefore, legal thinking in the civil law employs and prescribes at least quasi-algebraic fractionalizing rules for the integration by weighing connected with the injured party's fault.

Frame-narrowing procedure in sentencing

The leading normative sentencing theory of the German criminal commentaries (Bruns, 1974, 1980; Maurach, Gössel and Zipf, 1984; Zipf, 1977; Montenbruck, 1983; Jescheck, Ruß and Willms, 1985; Rudolphi, Horn, Samson and Schreiber, 1985) prescribes a frame-narrowing procedure. The prescriptive frame-narrowing procedure operates in three steps. In the first step, the subsumption of the defendant's act under a punishable act codified in the specific part of the penal code is a search for the proper frame. In the second step of the normative theory, the applicable sentencing frame, i.e. for which crime the defendant is to be punished, will be narrowed according to the information of the sentencing factors given in principle by §46 of the German criminal code. Thus, the maximum variation is narrowed by added information. This frame-narrowing by adding information applies also to the third step of the normative sentencing theory of the German criminal code. In the third step, the so-called 'frame of culpability' (*Schuldrahmen*) is transformed into a final decision which states a precisely specified sentence length (of days in prison or of an income related fine) and which, if applicable, is paired with other sanctions, like withdrawal of driver's license. In this final step of the legal sentencing theory the preventive aspects relevant for the harm-doer have to be taken into account when the judge makes his sentence.

Consequences

Summarizing the above, three major implicit hypotheses of legal thought have been outlined: averaging in punishment, fractionalizing and averaging on the duplex-response and, although with exceptions, non-additivity of mitigation as well as of aggravation information. These demand empirical investigations by both laymen and experts.

Frame-narrowing and averaging

The averaging model as a specific model of descriptive information integration theory (see above), is present as an implicit hypothesis for punishment judgments in the German legal commentaries on the concept of 'integration by weighing' in criminal sentencing. The characteristic prediction of the descriptive averaging model of the information integration theory (Anderson, 1981, 1982) is that the effect of the variation of one piece of information decreases when other information is combined with the original piece of information. The predictions of descriptive information integration theory are consistent with the prescriptive frame of narrowing procedure. The first step in prescriptive narrowing procedure is comparable to the technical fine-tuning of the rating scale by using end-anchors in experiments of the descriptive information integration theory. The prescriptive frame-narrowing procedure, when adding other relevant information on the case, as happens in the second and the third step of this approach, is also operative in the effect of added information on the effect of the preliminary information set as predicted by empirical averaging theory. Thus, there is a strong congruence between the frame-narrowing models and the predictions of the descriptive averaging model of information integration theory.

However, one may note some differences between descriptive and prescriptive frame-narrowing models. First, the averaging model may have other features which are not present in the frame of culpability. For example, the frame of culpability contains a narrowing of previous boundaries, whereas the averaging model does not necessarily imply this 'narrowing within' feature. Secondly, the analogy in prescriptive frame-narrowing applies for two large steps, but within these steps the integration of several aspects mentioned in §46 must occur. It is not entirely clear from the legal texts how this is done. However, the legal literature speaks of weighing the various factors. Thus, it seems possible that averaging theory would hold also for these integration tasks, where it might operate according to the 'narrowing within' scheme of the normative frame of culpability theory or according to the less restricted averaging model. Thirdly, the final legal decision does not totally form an analogy to the averaging model. For example, no statement with regard to the choice of additional sanctions by the judge or by the judges can be derived from the averaging model.

Of course, culpability frame theory still allows for some inconsistencies of sentencing. At each step, personal variations may be introduced, which can lead to a considerable variation in the final sentence. However, variation in individual preliminary results may also be reduced in the final result, when the frame of culpability is applied, using some remedies proposed by Montenbruck (1983) and others. Thus, the topic of sentencing disparity may become less dramatic when prescriptive theory is intensely applied. This hypothesis may be tested even with laymen. However, sentencing disparity in length of sentence is still a matter of the descriptive power of the information integration analogy. One must interpret the variation in final sentence as a consequence of the judges personal variability, be it systematic or random. As a consequence, one would need more specific information on the judge's sentencing variables to reduce this variability.

Averaging and fractionalizing of fault

The second implicit hypothesis, shown above, was a compound hypothesis of averaging and fractionalizing for the integration of information on the fault of the two or more parties involved in a wrong. The compound character of this hypothesis is contained in the claim of a linked validity of averaging and fractionalizing when the duplex-response is employed. For the same stimulus information displayed in a duplex-response experiment, both averaging on the punishment response and fractionalizing on the restitution response should be supported by the structure of the judgements. Aside from the compound hypothesis of averaging and fractionalizing, there is another implicit hypothesis stating a differential effect of the fault of the injured party on the two responses. On the restitution response, a larger effect of information on the fault of the injured party is expected than on the punishment response. Since an experiment employing a duplex-response has never been carried out in moral judgement research, the innovative character of this implicit legal hypothesis is apparent.

Non-additivity of mitigation and aggravation

Two illustrative heuristic questions follow from the material on mitigation and aggravation integration detailed above. The first is on the empirical validity of the partly additive, but primarily non-additive influence of mitigation-aggravation information on other information about the harmful act. The second heuristic question is how this mixed-format integration can be accounted for. In case of the validity of the averaging model for punishment judgments, one would have means to account for additivity as well as non-additivity by the assumption of differential weights. In a differential weight averaging model, in contrast to a constant weight model, each level of a piece of information may have a different weight. Thus, examining the extent of the empirical validity of the normative non-additivity rule would seem to be an interesting and complex

field of research.

References

Anderson, N.H. (1981) *Foundations of information integration theory.* New York: Academic Press.

Anderson, N.H. (1982) *Methods of information integration theory.* New York: Academic Press.

Anderson, N.H. (1983) *Psychodynamics of everyday life: Blaming and avoiding blame.* La Jolla: Center for Human Information Processing, University of California, San Diego (Technical Report CHIP 120).

Bauer, G. (1984) *Der Strafzumessungsvorgang als stufenweise Konkretisierung des gesetzlichen Strafrahmens* (Unpublished Dissertation. Mannheim: Juristische Fakultät).

Bruns, H.-J. (1974) *Strafzumessungsrecht: Gesamtdarstellung.* Köln: Heymanns (2. Auflage).

Bruns, H.-J. (1980) *Leitfaden des Strafzumessungsrechts: Eine systematische Darstellung für die strafrichterliche Praxis.* Köln: Heymanns.

Butzin, C.A. and N.H. Anderson (1973) Functional measurement of children's judgments. 44 *Child Development* 529-537.

Cohen, L.J. (1981) Can human irrationality be experimentally demonstrated? 4 *The Behavioral and Brain Sciences* 317-370.

Darby, B.W. and B.R. Schlenker (1982) Children's reactions ro apologies. 43 *Journal of Personality and Social Psychology* 742-753.

Deutsch, E. (1987) *Unerlaubte Handlungen und Schadensersatz: Ein Grundriß.* Köln: Heymanns.

Edwards, W.E. (1968) Conservatism in human information processing. In: B. Kleinmuntz (Ed.) *Formal representation of human judgment.* New York: Wiley, pp. 17-52.

Harris, R.J. (1976) Handling negative inputs: On the plausible equity formulae. 12 *Journal of Experimental Social Psychology* 194-209.

Hassemer, R. (1983) Einige empirische Ergebnisse zum Unterschied zwischen der Herstellung und der Darstellung richterlicher Sanktionsentscheidungen. 66 *Monatsschrift für Kriminologie und Strafrechtsreform* 26-39.

Hommers, W. (1983) *Die Entwicklungspsychologie der Delikts- und Geschäftsfähigkeit.* Göttingen: Hogrefe.

Hommers, W. (1988) Recompense as stimulus and response: Toward an exchange of law and psychology. 12 *The German Journal of Psychology* 139-151.

Hommers, W. and N.H. Anderson (1985) Recompense as a factor of assigned punishment. 3 *British Journal of Developmental Psychology* 75-86.

Hommers, W. and N.H. Anderson (1988) Algebraic schemes in legal thought and in everyday morality. In: F. Lösel, H. Wegener and H.J. Haisch (Eds.) *Psychology and the Criminal Justice System.* New York: Springer.

Honore, A. M. (1983) Causation and remoteness of danger. In: A. Tunc (ed.) *International Encyclopedia of Comparative Law: Vol. XI: Torts (Part 1, Chapter 7).* Tübingen: Mohr.

Honsell, Th. (1977) *Die Quotenteilung im Schadensersatzrecht: Historische und dogmatische Grundlagen der Lehre vom Mitverschulden.* Ebelsbach: Gremer.

Jescheck, H.-H., W. Ruß and G. Willms (1985) *Strafgesetzbuch: Leipziger Kommentar.* Berlin: De Gruyter (10. Auflage).

Lane, J. and N.H. Anderson (1976) Integration of intention and outcome in moral judgment. 4 *Memory and Cognition* 1-5.

Leon, M. (1980) Integration of intent and consequence information in children's moral judgments. In: F. Wilkening, J. Becker and T. Trabasso (eds.) *Information Integration by Children.* Hillsdale, NJ: Erlbaum.

Maurach, R., K.H. Gössel and H. Zipf (1984) *Strafrecht: Allgemeiner Teil. Teilband 2: Erscheinungsformen des Verbrechens und Rechtsfolgen der Tat. Ein Lehrbuch.* Heidelberg: Müller.

Mellers, B.A. (1982) Equity judgment: A revision of Aristotelian views. 111 *Journal of Experimental Psychology: General* 242-270.

Miller, D.T. and C.D. McCann (1979) Children's reactions to the perpetrators and victims of injustice. 50 *Child Development* 861-868.

Montenbruck, A. (1983) *Strafrahmen und Strafzumessung.* Berlin: Duncker and Humblot.

Pennington, D.C. and S. Lloyd-Bostock (Eds.) (1987) *The Psychology of Sentencing: Approaches to consistency and disparity.* Oxford: Center for Socio-Legal Studies.

Prosser, W.L. (1971) *Handbook of the Law of Torts.* St. Paul, Minn.: West (4th ed.).

Radin, M. (1927) *Handbook of Roman Law.* St.Paul, Minn.: West.

Rebmann, K. and F.J. Säcker (Hrsg.) (1979) *Münchener Kommentar zum Bürgerlichen Gesetzbuch. Band 2: Schuldrecht. Allgemeiner Teil.* München: Beck (In 7 Bänden).

Rudolphi, H.J., E. Horn, E. Samson and H.-L. Schreiber (1985) *Systematischer Kommentar zum Strafgesetzbuch: Band 1.* Frankfurt am Main: Metzner (3. Auflage).

Schlegelmilch, G. (Hrsg.) (1986) *Geigel: Der Haftpflichtprozeß.* München: Beck.

Schöch, H. (Hrsg.) (1987) *Wiedergutmachung und Strafrecht: Neue Kriminologische Studien. Band 4.* München: Fink.

Stoll, H. (1986) Consequences of liability: Remedies. In: A. Tunc (ed.) *International Encyclopedia of Comparative Law, Vol. XI: Torts, (Part 2, Chapter 8).* Tübingen: Mohr.

Surber, C.F. (1977) Developmental processes in social inference: Averaging of intentions and consequences in moral judgment. 13 *Developmental Psychology* 654-665.

Surber, C.F. (1982) Separable effects of motives, consequences, and presentation order on children's moral judgments. 18 *Developmental Psychology* 257-266.

Tunc, A. (1983) Introduction. In: A. Tunc (ed.) *International Encyclopedia of Comparative Law. Vol. XI: Torts, (Part 1, Chapter 1).* Tübingen: Mohr.

Von Linstow, B. (1974) *Berechenbares Strafmaß.* Berlin: Schweitzer.

Vecchio, R.P. (1984) Models of psychological inequity. 34 *Organizational Behaviour and Human Performance* 266-282.

Zipf, H. (1977) *Die Strafzumessung: Eine systematische Darstellung für Strafrechtspraxis und Ausbildung*. Heidelberg: Müller.