

Criminal law and behavioral law and economics

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Law and Interdisciplinarity

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I. Introduction

Since its first emergence in the seventies of the past century, behavioral economics has grown to become a significant branch in the field of economic sciences. By examining how people make judgments and come to a decision, it has replenished important economic models by adding valuable new insights, thus revising the concept of the so-called *homo economicus*. Furthermore, these insights also have proven to be of great value for jurisprudence. In Europe and Germany, capital market law and consumer protection law in particular have already received valuable stimuli from behavioral economics.¹ Criminal law in

¹ L. Klöhn, Kapitalmarkt, Spekulation und Behavioral Finance (2006); D. Enste/M. Ewers/C. Heldmann/R. Schneider, Verbraucherschutz und Verhaltensökonomik (2016); L. Oehler/A. Reisch, Behavioral Economics – Eine neue Grundlage für die Verbraucherpolitik, Vierteljahreshefte zur Wirtschaftsforschung 78 (2009), 30–43; A. Sibony/G. Helleringer, EU Consumer protection and Behavioural Sciences: Revolution or Reform?, in: A. Alemanno/A. Sibony (eds.), Nudge and the Law. A European Perspective (2015), 209–234.

Germany, however, has yet to adopt behavioral economic insights,² while other nations such as the United States or Israel have shown themselves considerably more open minded towards ideas from behavioral economics even in the field of criminal law.³ This may be due to the fact that the economic approach to criminal law has hitherto been met with rather substantial skepticism by German criminal law scholars.⁴ Discussing a behavioral economics approach to the crime of fraud, the following article tries to show that behavioral economics can offer valuable insights for criminal law and is therefore worthy of an unbiased reception.

II. The importance of behavioral models for the law

From a strictly social sciences perspective, criminal law is just a means to shape and control human behavior. The rules of the criminal code are supposed to provide that certain forms of behavior, such as murder or theft, are not accepted by the collective. This purpose is meant to be achieved by threatening the citizen with sanctions in the event he fails to refrain from said behavior. *Georg Wilhelm Friedrich Hegel* stated the opinion that such an understanding of criminal law treats the citizen unduly like a dog that is being trained by its owner.⁵ Such a view may indeed be inappropriate if one questions the criminal law regarding its legitimacy and its purpose. The same view may prove helpful, however, if one asks how criminal law can achieve this purpose. Just as training a dog demands knowledge regarding the behavior of dogs, criminal law, as far as it aims to control the behavior of humans, requires an idea on how humans actually behave. Just as an economist who studies the consequences of human decisions in the field of economics, a researcher in the field of criminal law requires a behavioral model in order to predict how the rules of criminal law affect the conduct of the people.

² *M. Englerth*, *Der beschränkt rationale Verbrecher – Behavioral Economics in der Kriminologie* (2010).

³ *R. McAdams/T. Ulen*, *Behavioral Criminal Law and Economics*, in: N. Garoupa (ed.), *Encyclopedia of Law and Economics*, vol. 3 (2nd edn., 2009), ch. 16; *A. Harel*, *Behavioral Analysis of Criminal Law*, in: E. Zamir/D. Teichmann (eds.), *The Oxford Handbook of Behavioral Economics and the Law* (2014), 568–598.

⁴ *P. Wittig*, *Der rationale Verbrecher* (1993), 126–129; *S. Harrendorf/B. Geng*, *Der rational kalkulierende Verbrecher? Zu Entwicklung, Stand und Zukunftsperspektiven ökonomischer Kriminalitätstheorien*, in: J. Körner et al. (eds.), *Recht trifft Wirtschaft* (2019), 181–212.

⁵ *G.W.F. Hegel*, *Grundlinien der Philosophie des Rechts* (1821), § 99.

A. *Homo economicus* as a behavioral model

The dominant behavioral model in economics is that of *homo economicus*, as it forms the bases of rational choice theory. It explains human behavior as the result of decisions made by a rational agent. His behavior is therefore predictable if his preferences are known. *Homo economicus* tends to display three certain characteristics: First, he is motivated only by self-interest, which means that he aims exclusively to maximize his utility function. Secondly, he continually acts rationally in the sense that he always chooses whichever option facilitates his self-interest best when offered various alternatives of decision. And finally, he is always capable of acting upon those decisions. Therefore, he does not let himself get irritated by his emotions or his urges.⁶

It is obvious, that *homo economicus* is not a truly realistic depiction of human individuals, who – of course – are influenced in their behavior by their feelings and who by no means always strive for the maximization of their utility function but who can also act in an altruistic manner. But contrary to popular belief, the concept of *homo economicus* does not claim to project a realistic depiction of human nature. It rather illustrates a conscious simplification, which reduces complex human motives and behaviors to a few characteristic traits. Only through this simplification is *homo economicus* able to fulfill its function as a parameter within the framework of mathematical formalizations, which economists utilize in order to predict human decision-making behavior. Hence it is not necessary for the concept of *homo economicus* to be based on a framework that accurately captures human nature and human behavior in its entirety. What matters is whether the concept can help make verifiable predictions regarding reality.⁷ For a long time, economists were convinced that the concept of *homo economicus* could provide just that. Even if it does not project correctly how concrete individuals will make their decisions, it is capable of predicting what decisions can be expected from a multitude of human beings.

B. Behavioral economics

Through behavioral economics this assumption has been challenged. Behavioral economics combines elements of economics and psychology to understand how people make decisions and how they act upon those decisions. Unlike rational choice theory, behavioral economics does not try to construct a simplified model of behavior based on more or less plausible assumptions of human conduct. Instead behavioral economists use laboratory and field experiments and analysis of archival data to find out how people make decisions in

⁶ G. Kirchgässner, *Homo oeconomicus – The Economic Model of Behavior and its Applications in Economics and other Social Sciences* (2008), 12–17.

⁷ Englerth (n. 2), 43–45 referring to M. Friedman, *The Methodology of Positive Economics*, in: idem (ed.), *Essays in Positive Economics* (1953), 3–43, 9–15.

the real world. Behavioral economists have examined the actual decision-making behavior of humans in a multitude of experiments. By confronting countless groups of test subjects with various fictional decision-making scenarios, asking, for example, whether the subjects would pocket the winnings of a lottery jackpot or if they would rather invest said winnings in hopes of winning an even higher jackpot. The results of these experiments have shown that people often act contrary to what the rational-choice-approach would lead one to believe. It appears, that irrational behavior in many cases is not a neglectable exception but the rule. Human beings regularly make predictable and pervasive mistakes in their judgment and decision-making. Behavioral economists have identified biases that distort our reception of reality and therefore our judgments. And they have shown that under cognitive or information constraints humans fall back on certain heuristics. Those shortcuts and rules of thumb are often useful, but under certain circumstances they lead to errors. They may obstruct the ability to properly estimate probabilities and risks.⁸ While rational choice theory is based on the behavior of a rational and self-interested *homo economicus*, according to behavioral economics the conduct of real people regularly displays bounded rationality, bounded willpower and bounded self-interest. As a consequence behavioral economists assume that the *homo economicus* model of rational choice theory in many cases will fail to correctly predict the typical behavior of people.⁹ This does not mean, however, that behavioral economics seeks to completely dismiss the concept of *homo economicus* as a behavioral model. The insights of behavioral economics do not force the conclusion that human behavior is irrational to an extent that makes it impossible to design a behavioral model that allows reliable predictions. A valuable finding of behavioral economics is that the mistakes people are making in their judgments and decisions can also be predicted.¹⁰ So the structural flaws in human decision-making that behavioral economics has identified can themselves be modelled. Thus it should be possible to adjust the shortcomings of the *homo economicus*-model by integrating some of the insights of behavioral economics.¹¹

C. Behavioral models in law: What role do behavior models play in law and criminal law in particular?

Jurisprudence first became aware of *homo economicus* through the economic analysis of law. Since the discipline first emerged in the United States in the

⁸ For an overview, see *H. Beck*, Behavioral Economics – Eine Einführung (2014), 25–94; *D. Kahnemann*, Thinking, Fast and Slow (2011).

⁹ *C. Jolls/C. Sunstein/R. Thaler*, A Behavioral Approach to Law and Economics, Stanford Law Review 50 (1998), 1471–1550, 1476.

¹⁰ *T. Ulen*, The Importance of Behavioral Law, in: Zamir/Teichmann (n. 3), 94–124, 94.

¹¹ *Beck* (n. 8), 9; *Jolls/Sunstein/Thaler* (n. 9), 1487.

second half of the preceding century, this school of thought has also gained traction in continental Europe and has therefore been incorporated in more and more legal systems. The economic analysis of law examines which economic effects originate from legal norms or decisions. For this purpose it makes use of the tools of rational choice theory and asks how a rational and self-serving individual would most likely react towards those norms and decisions.¹² Thus the economic analysis of law takes resort to the behavior model of the *homo economicus*.

Criminal law as well has been made the subject of economic analysis. Especially the research of *Gary Becker* and *Isaac Ehrlich* proved influential on criminology and public policy on crime and law enforcement.¹³ *Becker* and *Ehrlich* postulated that, in general, criminals are rational actors who reflect upon the cost-to-benefit-ratio before committing any crimes. While the benefits would be the expected monetary and nonmonetary returns of the criminal activity, discounted by their probabilities of realization, the costs of the crime would include formal and informal sanctions (like social stigma or the loss of lawful employment) discounted by the probabilities of detection and punishment. *Becker* offers an account of *homo economicus* when he states that “human behavior can be viewed as involving participants who (1) maximize their utility (2) from a stable set of preferences and (3) accumulate an optimal amount of information and other inputs in a variety of markets”.¹⁴

Despite some reservations, the economic analysis of law has gained considerable influence in German civil law.¹⁵ At the same time it has not met with equal success in criminal law theory. The approach of *Becker* and *Ehrlich* has been countered by German scholars with the argument that the *homo economicus* model is an undue simplification which does not live up to the complexity of the social and psychological reality of criminal behavior.¹⁶ However, the fact that the behavioral model of *homo economicus* has been dismissed by German criminal law theory does not mean that it has no place in German criminal law practice. Criminal law is always dependent on assumptions made in regard of human behavior. And if one examines the assumptions on human behavior that lie beneath most concepts and rules of German criminal law, one will inevitably encounter *homo economicus*. I want to illustrate this point by reference to the German criminal law provision on the crime of fraud.

¹² *T. Micelli*, *The Economic Approach to Law* (2004), 1 f.

¹³ *G. Becker*, *Crime and Punishment: An Economic Approach*, *The Journal of Political Economy* 76 (1968), 169–217; *I. Ehrlich*, *The Deterrent Effect of Capital Punishment: A Question of Life and Death*, *American Economic Review* 65 (1975), 397–417.

¹⁴ *G. Becker*, *The Economic Approach to Human Behaviour* (1976), 14.

¹⁵ *H.-D. Assmann/C. Kirchner/E. Schanze*, *Ökonomische Analyse des Rechts* (1993); *H. Eidenmüller*, *Effizienz als Rechtsprinzip* (4th edn., 2015).

¹⁶ *Wittig* (n. 4), 126–128; *T. Singelstein/M. Kunz*, *Kriminologie* (8th edn., 2021), 176–178; *Harrendorf/Geng* (n. 4), 191–193.

III. A behavioral economics approach to the crime of fraud

The crime of fraud is defined in § 263(1) of the German *Strafgesetzbuch* (Criminal Code):

“Wer in der Absicht, sich oder einem Dritten einen rechtswidrigen Vermögensvorteil zu verschaffen, das Vermögen eines anderen dadurch beschädigt, daß er durch Vorspiegelung falscher oder durch Entstellung oder Unterdrückung wahrer Tatsachen einen Irrtum erregt oder unterhält, wird mit Freiheitsstrafe bis zu fünf Jahren oder mit Geldstrafe bestraft.”

“Whoever, with the intention of obtaining an unlawful pecuniary benefit for themselves or a third party, damages the assets of another by causing or maintaining an error under false pretences or distorting or suppressing true facts incurs a penalty of imprisonment for a term not exceeding five years or a fine.”¹⁷

This rule contains assumptions regarding the behavior of three different persons: the victim, the potential offender and the judge who must pass judgment on the convicted delinquent.

A. Assumptions on the behavior of the offender

According to § 263(1) *Strafgesetzbuch*, a person who has committed fraud can be sentenced with imprisonment of up to five years. It is thus assumed that the imposition of a penalty or its threat has an effect on the behavior of (potential) offenders. In what follows, I want to concentrate on the behavioral effects of the threat of punishment.

1. The concept of general deterrence and the rational criminal

It is widely accepted that one purpose of threatening punishment is general deterrence. According to this concept, a reasonable number of possible offenders will refrain from committing a crime because they want to avoid punishment. Yet such a discouragement can only come into effect if the offender in fact considers the risk of punishment and weighs it against the possible benefits before committing a crime. It is obvious that the theory of deterrence necessitates a rationally acting offender, who, driven by his self-interest, wants to avoid the negative consequences of punishment.¹⁸ In other words, § 263(1) *Strafgesetzbuch* (like, on the basis of the deterrence theory of punishment, all other crimes in the criminal code) treats the potential offender as a *homo oeconomicus*.

¹⁷ English trans. by M. Bohlander/U. Reusch: www.gesetze-im-internet.de/englisch_stgb/index.html (last accessed 10 July 2022).

¹⁸ S. Laudien, Der homo oeconomicus und das Strafrecht, in: A. Dieckmann/C. Sorge (eds.), *Der homo oeconomicus in der Rechtsanwendung* (2016), 233–253, 237; S. Shavell, Criminal Law and the Optimal Use of Nonmonetary Sanctions as a Deterrent, *Columbia Law Review* 85 (1985), 1232–1262, 1235.

There has already been a multitude of objections against general deterrence as an aim of punishment. One common objection, for example, is that the severity of the punishment is not the sole factor in the benefit-risk-assessment of the possible offender. In most cases, the risk of getting caught at all would be a much more dominant factor in his assessment.¹⁹ If a potential offender assumes he will not even be detected or cannot be identified as the offender, the severity of the potential punishment will play next to no role in his calculations. Correspondingly, the effect of a potential punishment-threat will be very small. The economic analysis of criminal law has always taken this aspect into consideration and has therefore incorporated the risk of detection in its decision-making model.²⁰ It also added the concept of moral cost to take account of the fact that criminal behavior is influenced not only by deterrence but also by social norms and values.²¹

Another criticism cannot, however, be remedied by adjusting the decision-making-model: It is safe to assume that there are cases where the offender does no benefit-risk-assessment at all before committing the crime. A majority of crimes are committed spontaneously without any prior considerations. Moreover, there are also offenders who are in an emotional state of emergency during which they are incapable of judging the consequences of their behavior in a rational manner. Also, there are crimes which are committed under the influence of alcohol and/or drugs, a state which compromises immensely the capacity for making rational decisions. Especially with violent crimes or sex crimes, a rationally acting offender, who assesses all benefits and risks, can be considered an exception.²²

Yet there are several areas of crime where the behavioral model of a rational criminal is appropriate. This applies especially for fraud or other types of so-called white collar crimes. Offenders committing this kind of crime mostly act prudentially and are driven by an egoistic self-interest.²³ It therefore seems at least reasonable to assume that a serious risk of a severe punishment could discourage potential offenders from committing a crime.²⁴

¹⁹ *A. Bottoms/A. von Hirsch*, The Crime-Preventive Impact of Penal Sanctions, in: P. Kane/H. Kritzer (eds.), *The Oxford Handbook of Empirical Legal Research* (2010), 96–124, 101–103.

²⁰ *Becker* (n. 13), 180.

²¹ *E. Posner*, *Law and Social Norms* (2000), 88–111.

²² *D.A. Anderson*, The Deterrence Hypothesis and Picking Pockets at the Pickpocket's Hanging, *American Law and Economics Review* 4 (2002), 295–313, 308; *P. Robinson*, The Role of Deterrence in the Formulation of Criminal Law Rules: At Its Worst When Doing Its Best, *Georgetown Law Journal* 91 (2003) 949–1002, 956 f.

²³ See *R. Paternoster/S. Tibbets*, White-Collar-Crime and Perceptual Deterrence, in: S. van Slyke et al. (eds.), *The Oxford Handbook of White-Collar-Crime*, 622–641 (2016), who attribute a larger deterrence effect to informal sanctions than to formal punishment.

²⁴ *T. Hörnle*, *Straftheorien* (2nd edn., 2017), 27.

2. General deterrence and behavioral economics

However, such an assessment requires the correct perception and processing of information regarding the probability and severity of punishment. The behavioral model of *homo economicus* considers these abilities as a given, although experimental studies suggest that humans are exposed to various distorting effects when in the process of risk assessment. This could first be of consequence on the level of perceiving the information that is necessary for such an assessment. A potential offender may have access to data regarding the objective risk of detection and punishment, perhaps because there are well-known incidents, where someone already has been arrested and put on trial for committing such a crime. Yet this does not automatically support the conclusion that he will process the information at hand in a rational manner. According to insights of behavioral economics regarding what is known as the *availability heuristic*, the ability to form a subjective prognosis of probability depends crucially on how well the person has the relevant information available in their memory. For example, regarding the probability assessment for getting involved in a traffic accident, it makes a big difference whether someone has obtained the available information from immediate personal experience, from the personal account of a close acquaintance or from media coverage. If someone has experienced a traffic accident either personally or has heard the account from a close acquaintance, this information will become engrained much deeper in their memory in contrast to their obtaining the same information from media coverage. Concordantly, this information is either more or less available for their risk assessment. Humans that have experienced an incident either themselves or in their immediate circle estimate the likelihood of that event occurring again higher than humans that have received their information solely from the media.²⁵ Therefore, it might very well make a difference for a potential offender whether he has knowledge of other offenders in his immediate circle who were caught or if he merely has once taken note of abstract data regarding the police clearance rate for that offence. Similarly, it can also be relevant that the availability of such data can be overshadowed by better availability of contrary information, e.g. where a potential offender has knowledge of cases in his immediate circle that have neither been detected nor caught and the offenders secured valuable monetary or nonmonetary returns through their criminal activity.²⁶

Additional cognitive distortion effects are also to be expected in the processing of information within a risk assessment. Behavioral economists have grappled intensely with the question of how humans assess risk. They found that people often tend to assess their situation significantly more optimistically than objectively appropriate. For example, the probability of being affected by

²⁵ Beck (n. 8), 43.

²⁶ Englerth (n. 2), 218.

an adverse event is oftentimes underestimated. In the area of criminal behavior, such an *overconfidence bias* could lead criminals to underassess their risk of being detected and convicted by law enforcement authorities.²⁷

One of the most influential concepts of behavioral economics is *prospect theory*, which deals particularly with decisions as to risks.²⁸ While rational choice theory assumes that a rational agent chooses between risky prospects by comparing expected utility values (i.e. the weighted sum of adding the respective utility values of payoffs multiplied by their probabilities), prospect theory states that people evaluate outcomes based on the change they represent from an initial reference point rather than based on the nature of the outcome itself.²⁹ Applied to the concept of general deterrence, this leads to the conclusion that the deterrence effect of punishment is nonlinear. Thus it can be assumed that beyond a certain threshold, a further aggravation of punishment does not carry any more weight for a potential offender. For instance, while the risk assessment outcome could be significantly affected depending on whether the threatened punishment for a crime is either a fine of zero or 2,000 Euros, there is next to no effect on the assessment if the fine alternates between 10,000 or 12,000 Euros.³⁰ Ultimately, behavioral economics does not question the logic of deterrence in general. But its insights allow for a more differentiated approach, which in return introduces chances for more efficient crime control.

3. Prospect theory applied to the abandonment of an attempt

Prospect theory not only sheds a new light on general deterrence. Its findings on risk-averse and risk-seeking patterns are also of interest for the assessment of other legal provisions that deal with situations where an offender has to make a decision under conditions of uncertainty. Consider, for example, the abandonment of an attempted crime. Statutory provisions could provide that an offender may secure impunity if he gives up the plan to commit a crime that has already begun. The reasoning behind such a rule is that the possibility of impunity should motivate the offender not to carry on with an already commenced crime.³¹ Especially in cases of attempted murder, he will be provided with an incentive to spare his victim. One flaw in this argument is its precondition of the offender knowing about the legal consequences of abandonment.

²⁷ *McAdams/Ulen* (n. 3), ch. 16; *N. Garoupa*, Behavioral Economic Analysis of Crime: A Critical Review, *European Journal of Law and Economics* 15 (2003), 5–15, 9.

²⁸ *D. Kahnemann/A. Tversky*, Prospect Theory: An Analysis of Decision under Risks, *Econometrica* 47 (1979), 263–291.

²⁹ *Kahnemann/Tversky* (n. 28), 273.

³⁰ *C. Jolls*, On Law Enforcement with Boundedly Rational Actors, in: F. Parisi/V. Smith (eds.), *The Law and Economics of Irrational Behavior* (2004), 268–286, 282.

³¹ *W. LaFave*, *Criminal Law* (6th edn., 2017), 807; *American Law Institute*, *Model Penal Code Part I*, Commentaries, vol. 2 (1985), 359.

It seems reasonable to expect this rarely to be the case. But from the perspective of prospect theory, this reasoning has another weakness, especially when the offender does not have a chance to secure complete impunity but only a less harsh punishment.

To exemplify: A shoots B in an attempt to kill B, but the first shot only injures B slightly. A still has a bullet remaining, and he knows that B could identify him. A now has the choice to either complete his offence or to abandon his attempt. If he abandons his attempt, he could definitely avoid a severe punishment for attempted murder, yet he would have to expect a definite, albeit less severe, punishment for a completed battery. By completing the murder, he could significantly minimize his risk of getting caught at all. However, should he get caught, the punishment would be much more severe.

Is it realistic to assume that A would choose to abandon his attempt at murder in this situation? According to prospect theory, individuals making a decision under risk tend to value gains and losses differently, placing more weight on perceived gains than on perceived losses. This means that the risk assessment depends primarily on whether the actual decision-making situation is about limiting losses already incurred or about preserving or expanding chances of winning. In the former case, people typically tend to act more risk-seeking, which means they are willing to accept further losses in order to compensate for already incurred losses, whereas in the latter case they tend to act more risk-averse if already realized profits are at stake.³² In our example, from A's point of view his choice is about how to limit already incurred losses in the form of punishment risks in an already disadvantageous situation. According to the claims of prospect theory, he would now be inclined to accept further losses if in return he stands the chance of avoiding a certain loss. The option of abandonment, which means a lower but more certain loss, would therefore be less attractive than the option of simply completing the offence, by which he could avoid punishment entirely.

B. Assumptions on the behavior of the sentencing judge

Most legal systems grant the judge substantial discretion in determining the sentence, thus enabling him to take into account all circumstances of the concrete case and the individual character of the offender. This assumes that the decision of the judge is guided by the relevant facts alone, while disregarding any other influences. Again, from a behavioral economics perspective this premise seems doubtful. Experimental studies suggest that people, even when consciously disregarding irrelevant considerations, are still subject to unconscious distortions when exercising their discretionary power.

³² D. Kahnemann/A. Tversky, *The Framing of Decisions and the Psychology of Choice*, *Science* 211 (1981), 453–458, 454.

One example for such a distorting influence is the anchoring effect. According to this phenomenon people, who must decide upon a certain value on a scale, are generally oriented towards a reference point that is currently available in their consciousness.³³ This anchoring effect influences not only our decisions when making estimates, but also comes into play when we must decide upon a certain value within a given scope of discretion. The efficacy of the anchoring effect in sentencing has been proven by an empirical study in which experienced judges have been asked to impose a sentence on an offender based on a described rape case. Beforehand, they have been told what level of punishment a legal layman has deemed appropriate. It became apparent that the sentences given by the judges was significantly higher when the lay prosecutor also favored a high sentence, whereas the sentencing of the judges was much more lenient when the layman favored a lower sentencing. Evidently the assessment of the layman set an anchor that influenced the professional judges decisions in a certain direction.³⁴ Another study on the decision making of juries in litigation cases reached similar results.³⁵

In addition to information visibly connected to the subject matter of the decision, judgments can also be distorted by influences whose connection to the decision is not even consciously perceived. Studies have shown that anchors can be set by any arbitrary information even where it is obviously irrelevant to the decision. These studies have shown that, when assessing damages, judges are influenced by any random numeric value that was currently available in their consciousness. Behavioral economics call this noise effects.³⁶ It is long been known that judges in different places often decide dissimilarly upon identical cases. Research traces this back to the fact that different places tend to generate different decision-making habits and manners of exercising discretion.³⁷ The findings of behavioral economics on noise indicate that in addition to this cultural effect, other distorting factors that are deeply rooted in human behavior come into play as well.

In the face of these results, the assumption of the law that a judge would base his sentencing judgment solely on objective criteria proves to be an illusion. But behavioral economics also give a hint on how such distorting effects in decision-making behavior can be counteracted. If one cannot avoid

³³ D. Teichmann/E. Zamir, Judicial Decision-Making, in: Zamir/Teichmann (n. 3), 664–702, 678; M. Englerth, Behavioral Law and Economics – eine kritische Einführung, in: C. Engel et al. (eds.), *Recht und Verhalten* (2007), 60–132, 82 and 94.

³⁴ B. Englich/T. Mussweiler, Anchoring Effects in the Courtroom, *Journal of Applied Social Psychology* 31 (2001), 1535–1551, 1546.

³⁵ G.B. Chapman/B. Bornstein, The More You Ask for the More You Get: Anchoring in Personal Injury Verdicts, *Applied Cognitive Psychology* 10 (1996), 519–540.

³⁶ D. Kahnemann/O. Sibony/C. Sunstein, *Noise* (2021), 9.

³⁷ C. Pfeiffer, Glasnost in der Strafjustiz – Empirische Forschung auf der Suche nach Strafzumessungsgerechtigkeit, *Deutsche Richterzeitung* (1990), 441–445, 444.

anchoring effects, then the anchors should represent information that does not distort the judgment. For example, it would make sense to collect sentencing decisions in a database. If judges were obliged to consult such data base before each decision, they would be influenced by the sentencing in comparable constellations and not by arbitrary anchor values. So from a behavior-economics position, there is a lot that argues for the use of sentencing guidelines.³⁸ Of course this would lead to a standardization of sentencing that might restrict the scope of judicial discretion. But in individual cases justice could still be done by allowing a deviation from the guidelines if this can be explicitly justified by the circumstances of the individual case.

C. Assumptions regarding the behavior of the victim

From a behavioral economics view, the offense of fraud is particularly interesting because this crime is designed not only on assumptions relating to the behavior of offenders and judges but also on suppositions regarding the behavior of potential victims. The crime of fraud is supposed to penalize manipulations by means of communication that cause victims to harm their own assets. The idea of penalizing fraud is to protect the autonomy of individual decisions and behavior, as far as that behavior has an effect on someone's assets. The concept behind this design is that in a market economy all agents should carry out their transaction with other parties according to their individual preferences.³⁹ Autonomous action requires not only freedom from constraint but also freedom from errors and misconceptions. Only one who is fully aware of the circumstances and consequences of a decision can make a truly autonomous and self-determined decision. That is why protection against willfully caused asset-relevant misconceptions is essential for every market-based economic system. Criminal law contributes to this protection by penalizing willful deceit.

1. The concept of deceit and the information model

The most obvious case of deceit is an explicit lie, in which the offender states false facts to provide the victim with inaccurate information to compromise the latter's decision-making basis. The untrue statement of a seller that an offered carpet stems from Persia will lead the victim to the incorrect conclusion that the requested price is appropriate, thus leading to the sale of an inferior product for an excessive price. Incorrect information does not necessarily need to be conveyed by spoken or written word but can also be encompassed in certain behavior. If someone dresses up as a police officer to confiscate allegedly counterfeit money, he does not need to explicitly mention that he is a police officer. The appearance in uniform in itself already conveys that statement. The

³⁸ Kahnemann/Sibony/Sunstein (n. 36), 24.

³⁹ M. Mansdörfer, Zur Theorie des Wirtschaftsstrafrechts (2011), 218.

outlined cases have in common that the offender deceitfully interferes with the perception of the victim by providing them with inaccurate information. Thereby he provokes a misconception which in turn leads to an economically disadvantageous decision.

The underlying assumption of penalizing deceit is that decisions like those described above always result from either insufficient or incorrect information. According to this information model of decision-making, a person with comprehensive and accurate information at their disposal will always make a rational and economically prudent decision. So once more we encounter *homo economicus* as a behavioral model. In accordance with that understanding of human behavior, criminal law only has to ensure that no incorrect information is transmitted, whereas responsibility for the completeness of the information on which a decision is made falls entirely on the potential victim. If relevant information is not known to an actor, he is expected to ask his transactional partner, who in return is now obliged to truthfully disclose this information. Only very seldom does there exist an obligation to correct a misperception about certain circumstances without being asked. A violation of these obligations can then be punishable as fraud by omission. But in general, in a market economy it is everyone's own responsibility to base his decisions on sufficient information.⁴⁰ If we assume with the information model that rational decisions are only a matter of the participants possessing the right amount of truthful information, then criminal law must only prevent intentional misinformation against which a victim cannot defend himself. This defenselessness results from the fact that in economic transactions we typically have to trust in the truthfulness of the information we receive, as we cannot verify it without further effort.

2. Flaws in the information model

From the perspective of behavioral economics, such an information model of fraud seems incomplete. Misconceptions and unfavorable decisions often result not from inaccurate information but from flawed information processing. According to the information model of fraud, the processing of information is solely the potential victim's responsibility. But what if the potential victim's information processing can also be compromised by manipulations against which he is defenseless?

Restrictions and errors in information processing are a central field of research in behavioral economics. Behavioral experiments have shown that human beings have only a limited ability to absorb and then correctly process information. A well-studied effect in that context is what is termed information

⁴⁰ *Mansdörfer* (n. 39), 221.

overload.⁴¹ If a person is exposed to more information than he can absorb, he will fall back on unconscious mechanisms (heuristics) to make the amount of information manageable. However, this can lead to inaccurate conclusions, even if the information the conclusion is based on is correct. How is this possible? In the case of information overload, the information that has been perceived first regularly is remembered best and therefore forms the basis of the decision. Although later information is initially consciously perceived, it does not remain in the memory to the same extent and thus will probably not be taken into account in the decision-making process. An example: When dealing with capital investment, private investors are often provided with a large amount of complex information when talking to their investment advisors. This can cause information overload. If during those talks the chances of profit have been discussed first, while the risks have been discussed at the end, it is to be expected that the information regarding the potential benefits has been better absorbed by the investor than the information regarding the risks.⁴² So, although all relevant information has been conveyed accurately, the investor might assess the risk-reward-ratio incorrectly and will, concordantly, make a non-rational choice.

Another important phenomenon in the context of information processing is the “framing effect”. It describes how our information processing is strongly affected by the way the information is presented. When people have to make risky economic decisions, those decisions often depend on the way the relevant information is conveyed to them. In a behavioral economics study the test subjects were presented with two questions:

1. Would you participate in a lottery where there is a 10% chance of winning 95 Euros and a 90% chance of losing 5 Euros?
2. Would you pay 5 Euros to participate in a lottery where there is a 10% chance of winning 100 Euros and a 90% chance of winning nothing?

The chance of turning a profit or the risk of suffering a loss, respectively, are statistically identical in both scenarios. Under the premise that individuals make rational choices when given accurate information, one would expect that in both scenarios the proportion of subjects that would participate in the lottery would be approximately the same. But this is not the case. In fact, question 1 induced far more participants to turn down the opportunity of participation than question 2 did.⁴³ Apparently it makes a substantial difference whether a decision-making problem is presented as a choice between a win and a likely loss or a win and just a cost.

⁴¹ K. Keller/R. Staelin, Effects of Quality and Quantity of Information on Decision Effectiveness, *Journal of Consumer Research* 14 (1987), 200–213, 212.

⁴² R. Eberius, *Regulierung der Anlageberatung und Behavioral Finance* (2013), 105.

⁴³ *Kahnemann/Tversky* (n. 32), 453; *Kahnemann* (n. 8), 448.

It is obvious that mechanisms like framing or information overload can be used to manipulate other people and entice them to a certain behavior. Sales techniques, as they are taught in seminars to sales representatives, often just comprise instructions on how to specifically frame an offer to make it appear more attractive to potential buyers. The insights of behavioral economics can be used to protect consumers from the abusive application of such practices. Consumer protection law, for example, has been inspired by behavioral economics to apply new solutions in certain areas. Not long ago, consumer protection law solely followed the approach of the “information model” to protect consumers from poor decisions. Thus it obliged sellers and manufacturers to provide more and more extensive information.⁴⁴ Meanwhile, based on the insights of behavioral economics, there has been growing recognition that not only does more information not necessarily lead to more rational decisions, but that it can also lead to an information overload which may result in an even more disadvantageous decision-making behavior.⁴⁵ Therefore investor protection today regulates not only the amount of information but also how this information has to be presented to potential customers. For example, providers of financial services are obliged to summarize the most crucial information and then illustrate it in an intuitive graphic.⁴⁶

D. Consequences for the concept of fraud

The insights of behavioral economics regarding the structural deficits of human information processing are also of interest when analyzing the offense of fraud. Perhaps criminal law should draw the same conclusions as consumer protection law and stop relying exclusively on the information model. If the manipulation of information processing can be as effective as the conveying of false information, then it could be prudent to have the crime of fraud apply to such cases as where an offender purposely causes his victim to erroneously process information. I would like to illustrate this point by giving an example:

Mister X is sending letters offering “Investment Certificates” to people who are interested in safe low-risk investments for retirement income. In fact, the “Investment Certificates” have a very high risk of default and are therefore not suited for purposes of retirement income. Mister X knows that his prospective customers are seeking exclusively low-risk investments.

If Mister X advertises the “Investment Certificates” explicitly as suitable for retirement income or if he provides incorrect details regarding the certificates’

⁴⁴ D. Zimmer, Vom Informationsmodell zu Behavioral Finance: Brauchen wir Ampeln oder Produktverbote für Finanzanlagen?, *Juristenzeitung* 2014, 714–721, 715.

⁴⁵ G. Spindler, Behavioural Finance and Investor Protection Regulations, *Journal of Consumer Policy* 34 (2011), 315–336, 321.

⁴⁶ T.M.J. Möllers/E. Kernechen, Information Overload am Kapitalmarkt, *Zeitschrift für Gesellschaftsrecht* (2011), 1–26, 17.

risks, this would be chargeable fraud, because the misrepresentation of facts would qualify as deception within the meaning of § 263(1) *Strafgesetzbuch*. But if Mister X is familiar with behavioral economics, it might not even be necessary for him to explicitly deceive his victims. Instead, he could achieve his goal in a more subtle fashion. For example, he could make use of framing effects in presenting the information on his product. He could thus lead the readers to incorrectly conclude that the product is suitable for generating retirement income despite all the provided information being technically correct. This result could be achieved by emphasizing the earnings potential over the risk of loss and therefore manipulating information processing in a way that gives the reader a false overall impression. Mister X could also make use of information overload effect by providing an overabundance of detailed information in a way that a significant number of potential purchasers will be too overwhelmed to take these risks into consideration when making their decision.

Does this conduct constitute deception in terms of the crime of fraud? After all, the offender is providing only correct information and no inaccurate facts. On the other hand, he is ensuring that the provided information will most likely be processed incorrectly.

German criminal law recognizes fraud by “deception with true facts”. The idea is that several pieces of information, each true in itself, can be presented in an overall fashion that deceives the victim. In this line of thought, the German *Bundesgerichtshof* (Federal Court of Justice) identified deception in a case where the offender had offered a fee-based route planner online.⁴⁷ However, only in a very hidden part of the website did he point out that use of the route planner was subject to a charge. Anyone who did not discover this notice on the extensive page could, by the design of the page, get the impression that the route planner was being offered free of charge. Decisive for the Court’s conclusion was the offender’s very aim to create such a false impression.

Yet the Court’s reasoning is not very convincing. After all, deception is an objective element of the offense. Consequently, it cannot be inferred from the offender’s subjective intention alone.

From the perspective of behavioral economics, however, the result could very well be justified based on objective criteria: By the website’s design, the offender caused information overload among his victims. Affected by this overload, they were unable to perceive the decisive piece of information among the multitude of items presented: the service being subject to a charge. As a result, their lack of information led them to falsely conclude the offer was free of charge.

Could the concept of “deception with true facts” also cover cases of framing where, even though all the information is perceived correctly, its particular presentation leads to incorrect information processing and thus to an error?

⁴⁷ BGH, judgment of 5 March 2014, 2 StR 616/12.

Such an interpretation would, however, be irreconcilable with the explicit wording of § 263(1) *Strafgesetzbuch*, since the provision requires an action under false pretenses or either a distortion or suppression of true facts, which means that criminal liability is constituted by conveying incorrect information and not by manipulation of information processing.⁴⁸ To subsume a behavior like manipulative framing under § 263(1) *Strafgesetzbuch* would therefore be an impermissible analogy.

E. Fraud without deceit?

As we have seen, in German criminal law fraud requires a deceptive manipulation of the bases of information. A similar approach is found in the criminal law of the United Kingdom and the United States, where the offense of fraud requires a false representation of facts.⁴⁹ However, it is not imperative to define fraud so narrowly. Other legal systems define fraud in a broader sense and do not require deceit by false representation of facts. For instance, in Art. 286 § 1 of the Polish Penal Code, fraud is defined as follows:

“Kto, w celu osiągnięcia korzyści majątkowej, doprowadza inną osobę do niekorzystnego rozporządzenia własnym lub cudzym mieniem za pomocą wprowadzenia jej w błąd albo wyzyskania błędu lub niezdolności do należytego pojmowania przedsiębranego działania, podlega karze pozbawienia wolności od 6 miesięcy do lat 8.”

“Whoever, with the purpose of gaining a material benefit, causes another person to disadvantageously dispose of his own or someone else’s property by misleading him, or by taking advantage of a mistake or inability to adequately understand the action undertaken shall be subject to the penalty of deprivation of liberty for a term of between six months and eight years.”⁵⁰

Accordingly, Polish criminal law does not require deceit in the sense that the offender must create a misconception in the victim. Instead, it is sufficient if the offender merely exploits a misconception no matter how this misconception came into existence. Therefore, an offender could be held responsible for provoking a misconception of the victim by manipulatively framing information and thus causing the victim to dispose of his assets in a disadvantageous fashion.

Now, which solution is more sensible from a criminal policy perspective? The German model follows the information model and presumes that victims only need protection from deceptions, because there is almost no way to protect oneself against false information when dealing with strangers in business. On

⁴⁸ R. Hefendehl, in: Münchener Kommentar zum Strafgesetzbuch, vol. 5 (4th edn., 2022), § 263 para 36.

⁴⁹ See UK Fraud Act of 2006; *LaFave* (n. 31), 1261.

⁵⁰ English translation by International Money Laundering Information Network: www.imolin.org/imolin/amlid/data/pol/document/act_6_of_june_1997_the_penal_code.html (last accessed 10th July 2022).

the other hand, how received information is processed lies within the personal responsibility of each individual.⁵¹

From the perspective of behavioral economics, the information model seems dubious, and thus the Polish conception of fraud has its merits, since it takes into account that a misconception can be caused not only by deceit but also by more subtle forms of manipulation. On the other hand, a behavioral-economic understanding of fraud would not necessarily presuppose that the mere exploitation of a misconception is to be declared a punishable offense. One could object that only causing a misconception constitutes an injustice that must be punishable by law, while simply exploiting such a misconception is merely morally reprehensible. This is apparently how the legislatures in Germany, the United Kingdom and the United States see the matter. But one could think of extending the crime of fraud to all cases in which the perpetrator provokes a misconception in the victim, regardless of whether this is done by transmitting incorrect information or by deliberately manipulating information processing.

If fraud were to be extended to an intentional manipulation of information processing as well, this would significantly expand the range of punishable behavior. Would this not pose a risk of criminalizing sales tactics and marketing strategies that are common and accepted in our market economy? It would not. This is because the offense of fraud not only requires an intended causation of a misconception but also requires the victim to dispose of his assets in a harmful fashion as a direct result of this misconception. This is not the case where, as a result of the misconception, the victim merely makes a transaction that he otherwise would not have made. If the victim receives goods or services in return which are objectively worth their price, then there is no damage to the assets of the victim. A buyer that has been enticed to purchase an unwanted product is not a victim of fraud just because the seller elicited a misconception.⁵² Here, the buyer is already adequately protected by civil law.

If, on the other hand, targeted manipulations are used to entice the victim to dispose of his assets in an economically damaging way, then it seems reasonable to punish the offender for committing fraud. In essence, the wrongfulness associated with fraud stems not from the way an error was induced by the offender but rather from the offender's attempt to damage the victim's assets so as to enrich himself. What needs to be taken into account as well is the fact that criminal law is supposed to serve especially the protection of the weak.⁵³ Fraudsters do not search for their victims among their attentive and critical

⁵¹ R. Kölbl, in: H. Achenbach et al. (eds.), *Handbuch Wirtschaftsstrafrecht* (5th edn., 2019), 706: "in principle the recipient is responsible for misunderstandings" (author's translation).

⁵² *Hefendehl* (n. 48), § 263 para 817.

⁵³ R. Vergo, *Das Leitbild eines verständigen Durchschnittsverbrauchers und das Strafrecht – ein inkongruentes Verhältnis*, *Zeitschrift für Wirtschafts- und Strafrecht* (2010), 86–93, 92.

contemporaries but among the gullible and naive. These groups of persons need protection not only from explicit deceptions but also from other forms of manipulation.

That is why it is not appropriate to resort to the standards of consumer protection law when determining the standard of protection of criminal law in respect of fraud. Consumer protection law in Germany is defined by the law of the European Union. According to that body of law, the applied standard is that of an consumer who is reasonably well informed and reasonably observant and circumspect.⁵⁴ This standard regulates what can be expected from a consumer when doing business with honest enterprises. Therefore, it is applicable, for instance, when dealing with the question of whether an advertisement is of a misleading character.

Conversely, fraud is about protection from behavior that is designed to willfully damage the assets of the victim. In that case, the point of reference cannot be a standardized average consumer. The level of protection needs to be determined in accordance with what degree of observance and circumspection can actually be expected of people who are typically the victims of fraudsters. Here, the insights of behavioral economics can be helpful in ensuring that assessment of the degree to which people need protection from a manipulation of their decision-making behavior is based on a realistic foundation.

IV. Conclusion

Behavioral economics is of interest not only for criminology but also for the doctrinal study of criminal law. The preceding remarks have shown that the normative evaluations of criminal law are in many respects dependent on models that contain assumptions about the expected behavior of the norm's addressees. In this context, criminal law usually falls back on the behavioral model of *homo economicus*, which assumes a rationally acting utility maximizer. However, this model has its deficiencies, not only in the description of criminal behavior but also concerning the behavior of judges or potential victims. Behavioral economics does not aim to completely replace *homo economicus*. However, it can add important insights to this model and thus improve its informative value as a behavioral model for criminal law.

⁵⁴ See Directive 2005/29/EC (2005) concerning unfair business-to-consumer commercial practices, recital no. 5.