

LEGAL PSYCHOLOGY

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Cover illustration: A Sherlock Holmes puppet (“little thinker”) purchased at philosophersguild.com. Had Sherlock Holmes been a psychologist, he would have been an investigative psychologist rather than a legal psychologist.

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PREFACE

In my experience as a teacher, legal psychology is popular among students from various disciplines, including psychology, law, and criminology. Psychology students may be drawn to the criminal context, while law students may be attracted by the alternative way of looking at legal facts.

Despite its popularity among students, academic researchers in legal psychology constitute only a very small proportion of all psychology researchers. It can be argued that legal evidence is a relatively new domain to which psychological insights have been applied. The internationally renowned expert Elizabeth Loftus wrote some of her most influential papers on the malleability of eyewitness recollection in the nineteen seventies. It seems as if legal psychology is still seen by many as a new, alternative approach, from the sideline. This is quite in contrast to the position granted to forensic psychology (i.e., the psychological approach to criminal responsibility). Forensic psychology/psychiatry is a standard course for law students at most universities, at least in the Netherlands.

That legal psychological researchers are small in numbers, does not mean that there is little legal psychological literature. Numerous publications relevant to legal psychology have seen the light in recent decades. There are journals specialised in legal psychology, such as *Behavioral Sciences and the Law*, *Law and Human Behavior*, *Psychology, Crime and Law*, *Legal and Criminological Psychology*, and the *Journal of Empirical Legal Studies*, to name a few. Despite the impressive productivity of legal psychological researchers, there appears to be a lack of overarching text books in this domain – again in contrast to forensic psychology. This book seeks to fill this gap. It is written with the Dutch practice in mind. As a consequence, some topics that do not apply to the Dutch system, are not discussed, for example jury selection and dynamics. In addition, some comments about legal procedures may not apply to legal systems other than the Dutch.

The book covers the following topics. First, there is a brief discussion of the legal context in which legal psychology plays a role. Second, psychology as a science is discussed. Third, given that legal psychology is an applied domain, a few fundamental topics within the general psychological literature are discussed, namely perception, memory, and decision making. Fourth, the psychological analysis of three prominent pieces of evidence is reviewed, namely eyewitness identification, eyewitness testimony, and confession. Finally, legal decision making is discussed.

Eric Rassin, June 2020

1. THE LEGAL CONTEXT

In the typical Dutch criminal trial, the following four questions need to be answered by the judge.

1. Can it be established, beyond reasonable doubt, that the suspect committed the crime of which the public prosecutor suspects him? The Dutch Code of Criminal Procedure (art. 350 jo. 338 Sv.) dictates that the judge has to become convinced that the suspect is the perpetrator.
2. Does the behaviour displayed by the suspect qualify as a criminal act?
3. Are there any exception clauses precluding the suspect's guilt?
4. Which sanction is called for?

The judge may ask a legal psychologist for advice about the first question. By contrast, forensic psychologists work within the context of the third and fourth questions. Standards for conviction are generally considered to be quite high. Indeed, the judge is expected to engage in fact finding. This legal fact finding is bound by rules. For example, not all information can be used as evidence. In the Netherlands, evidence can be found in the judge's own perception, suspect statements, witness statements, expert-witness statements, and written documents (art. 339, I. 1 Sv.). Criminal fact finding may not always result in discovering factual truth. One reason for this is that evidence may in some cases be inadmissible, because the police violated rules during their investigation. Moreover, the end goal of a criminal trial is to establish whether or not the suspect committed the crime at hand. This is not always the same as finding out what happened. For example, if the judge deems that it cannot be established that the suspect committed the crime, the judge is not obligated to find out who did. In sum, while standards for fact finding in criminal procedures are high, the standards are far from absolute.

Note that establishing that the suspect is the perpetrator does not require absolute proof, but merely sufficient evidence, so that perpetratorship can be assumed beyond reasonable doubt. In Dutch, it is linguistically even impossible to differentiate between evidence and proof. It is simply assumed that when a(n unknown) threshold of evidence is reached, perpetratorship is proven.

So far, criminal fact finding falls short, for example when compared to scientific fact finding, regarding the goal (cf. establishing perpetratorship of the suspect versus discovering truth), and the required certainty (cf. absence of reasonable doubt versus predetermined statistical significance level). Criminal fact finding may also fall short regarding methodology.

How to establish perpetratorship

To determine that the suspect committed the crime, admissible evidence is required. Moreover, the evidence has to be strong enough to conclude beyond reasonable doubt that the suspect committed the crime. Notably, establishing perpetratorship, despite its legal context, is in fact not a legal expertise. It comes closer to a historical or scientific endeavour, rather than legal expertise. It can hence be argued that establishing perpetratorship requires historical and scientific, rather than legal methods. Obviously, judges are not typically trained in historical and scientific methodology. Thus, it can be argued that judges are from the onset ill-prepared to engage in fact finding. They may themselves disagree, if they fail to appreciate that law is fundamentally different from history or science. Strikingly, in Dutch (and other languages) it is impossible to distinguish science from arts and humanities. These academic disciplines are all referred to with the same overarching term. Haack (2003, p. 344) noted this and concluded: "There are plenty of questions – historical, legal, logical, political, philosophical, commercial, culinary, etc., etc. – that simply fall outside the scope of the sciences (as that not-quite-translatable German word, *Wissenschaft*, is broader than science)". In a similar vein, in Dutch, there is only one word for (scientific) research and (criminal) investigation.

What typically happens in a criminal investigation, is that the police initially seek to identify a suspect. Once a primary suspect is in the picture, the police will seek to gather evidence against this suspect. It is not unusual to construe information both as preliminary information as well as incriminating evidence later on. For example, if the police have no suspect, and subject a witness to a photo series of previous suspects of similar crimes (a so-called mugshot series), and the witness identifies one of these photos, the pertinent suspect will then become the primary suspect in the present investigation. The same identification may later on, in court, be used as evidence against the suspect.

Once the police feel that they have gathered enough incriminating evidence against the suspect, they hand over the case to the public prosecution who will ultimately subpoena the suspect. The Dutch Code of Criminal Procedure is inquisitorial in nature. Consequently, the content of the casefile is for the bigger part determined by the public prosecution. However, the defence has some opportunity to include information (cf. exonerating evidence) in the file. Notwithstanding, generally, criminal casefiles contain mostly incriminating evidence.

The casefile is subsequently sent to the judges who will try the case. Prior to the trial, the judges will study the casefile. During the oral discussion

of the case, all evidence (incriminating and exonerating) can be reviewed. Ultimately, the judge decides whether or not there is enough incriminating evidence to convict the suspect. There is consensus that conviction requires at least two, preferably independent, pieces of evidence. It is the judges' prerogative to select and evaluate these pieces of evidence. Imagine that there are two pieces of incriminating evidence in a casefile, but also eight pieces of exonerating evidence. Even in such situation, the judge can convict the suspect, referring to the two pieces of incriminating evidence, while ignoring the exonerating evidence. In the eventual verdict, the conviction has to be motivated. However, generally, simply summing up the (two) pieces of incriminating evidence suffices as motivation, unless the defence has explicitly referred to a particular piece of exonerating evidence in the plea. In that case, the verdict should include a motivated rejection of that plea. Again, simply referring to the incriminating evidence and stating that that evidence is considered to be stronger than the exonerating evidence suffices as a motivated rejection. In sum, when determining perpetratorship, the judge is free to display some cherry picking. To reiterate, this type of fact finding falls short when compared to scientific fact finding.

Finally, it should be noted that fact finding in an inquisitorial criminal procedure is stringently bound by legal rules. However, those rules were not written with scientific scrutiny in mind. The rules were governed by the idea that the suspect needs protection against the government. Thus, the rules are not meant to and do not safeguard the validity of the conviction.

Experts in inquisitorial versus adversarial systems

The judge can appoint any individual as expert witness, in his own initiative, or by request by the defence or prosecution. In an inquisitorial system, experts appointed by the judge indeed work for and are paid by the court. Hence, they can be expected to deliver reports that are of the highest possible quality. Particularly, the appointment by the court is considered to safeguard a neutral, unbiased working attitude. This attitude is further promoted by quality standards. For experts in Dutch criminal cases, the standards are defined by the Dutch List of Legal Experts (Nederlands Register Gerechtelijk Deskundigen; NRGD; www.nrgd.nl). Currently, the standards dictate that the expert has a relevant academic training, a preferably active part in the pertinent academic community, and recent experience in writing forensic reports. Moreover, the expert should use scientifically validated methods, and show awareness of the limitations of these methods.

Despite the quality standards, and the esteem borne out by the appointment by the court, there may still be a risk of bias on the side of the

expert. Imagine for example, that the expert, though appointed by the judge, is asked to answer questions originally posed by the defence. Or, by contrast, what if the questions asked to the experts stem from the prosecutor? Would knowledge of the source of the questions influence the expert, in that he may tend to answer the questions in a for the commissioning party favourable manner? According to Murrie, Boccaccini, Guarnera, and Rufino (2013), such an allegiance effect is very well possible in an adversarial system. Note that in an adversarial system, both parties (defence and prosecution) can bring their own experts. Thus, it is very tempting for experts to write a report that is favourable for the party that retained them. Such favourable writing is possible, even in the light of quality standards. Note that in many fields of expertise, there is scientific discussion, and thus, an expert can choose to interpret information in one way or another. There is room for differential focus and emphasis.

While an adversarial system may invite skewed expert witness reports readily, an inquisitorial system cannot completely prevent their occurrence. Note that even in an inquisitorial system, expert witness reports can end up in the case file, without the expert having been appointed by the judge. For example, the defence may submit a forensic report written by an expert by direct request of the defence. This can occur if an officially appointed expert has produced a forensic report, and the defence wants to invite a second opinion or counter expertise. Further, quality standards, enabling official appointment, do simply not apply to all areas of expertise. For example, whereas criteria like academic embedding make sense for legal psychologists, they are senseless when it comes to experts in golden watches or street fighting techniques. Consequently, experts not meeting general quality criteria continually enter the courtroom arena, oftentimes by official appointment by the judge.

Criminal versus civil procedures

Whereas criminal procedure is inquisitorial in many continental systems, civil procedure is adversarial. Compared to criminal procedure, civil procedure places less stress on fact finding. One major reason for this is that the goal of a civil suit is not to determine what has happened, but merely to determine which of the two parties is most right. Therefore, both litigating parties can make claims and provide evidence to support these claims. The judge has to evaluate the claims and the evidence. In order for the civil procedure to be fair, it is important that both parties have equal access to judicial means. Hence, equality of arms is the guiding principle in civil procedure. Meanwhile, the judge will not waste time on judging information that was not included in

any claim of either party. This implies that a lot of factual information will not be subjected to evaluation, merely because it is not crucial to claims made in the procedure. Put extremely, if both parties agree that the grass is blue, the judge will take this premise as an undisputed fact. In conclusion, the legal facts in a civil verdict can be remote from the factual truth.

Civil law does hardly or not rule out any information as evidence. Obviously, experts play an important role in civil procedures. Just as in criminal law, experts in civil law are bound by quality standards, laid down in a Code of conduct (Gedragscode voor gerechtelijk deskundigen in civielrechtelijke en bestuursrechtelijke zaken). This code dictates that the expert works impartially, independently, and with integrity. Nonetheless, as hypothesised by Murrie et al. (2013), being hired directly by a commissioning party may place some psychological pressure on the expert to produce a report that is favourable to the party that literally pays for it.

In conclusion, while many legal psychologists focus on application of psychological knowledge to criminal cases, there is reason to argue that civil cases may benefit at least to similar extent from psychological insights.

2. PSYCHOLOGICAL SCIENCE

Within psychology, there are actually four concurrent approaches, namely psychodynamics, behaviourism, cognitivism, and neuroscience. These four approaches may well analyse a psychological phenomenon in competing manners. The four psychological schools will be discussed briefly below. Psychodynamics is generally associated with Sigmund Freud (1856-1939) who was actually a psychiatrist, but is considered a founding father of contemporary psychology. Freud has published a lot, in many different outlets such as (initially unpublished) letters to colleagues, books, and essays. There are at least three consistent themes in his work (e.g., Freud, 1910). First, Freud believed that all individuals have to go through five predetermined developmental stages in order to reach a sane mature mental state: The oral (age 0-1), anal (1-3), phallic (3-6), latent (7-11), and genital (11 <) phase. In all stages, the mental energy (*Libido*) is remarkably consistently directed at the pertinent body parts. Going through all stages successfully is not always easy. For example, one can get stuck in a stage and the development arrests (fixation), or one can even fall back to a previously completed stage (regression).

A second recurring theme is that in Freud's vision, the human mental system can actually be subdivided in two different ways. The first division is based on the guiding principles. The *Ich* is guided by the reality principle, the *Überich* is guided by morality, and the *Es* is guided by pleasure. These three systems are likely to get into conflict, because pleasure and morality do not always go hand in hand. The second division is between conscious and unconscious processing (and in some publications even a subconscious that functions in between). The two divisions are tied asymmetrically in that *Überich* and *Es* are almost completely unconscious, while *Ich* is partly conscious. In fact, Freud argued that most mental activity occurs outside our conscious awareness.

The third recurring theme is that of the defence mechanisms. *Ich*, having a fulltime job reconciling conflicting input from *Überich* and *Es*, meanwhile trying to adapt to external reality, has numerous defence mechanisms at its disposal to keep up appearances. Notably, these defences are oftentimes unconscious. Best known are displacement, dictating that we can inhibit unwanted emotional reactions and transfer them onto another target later on (e.g., being furious at one's boss, but not telling him, while later being unkind to one's housemates), and projection (i.e., attributing some of one's own unwanted emotions to someone else). Given that all defences have in common that some part of reality is distorted or pushed outside of

consciousness, repression (i.e., the motivated removal of unwanted impulses and memories from consciousness) is considered to be the mother of all defences.

It should be noted that Freud, being a psychiatrist, based his insights into the human psyche largely on his encounters with psychiatric patients. Given that individuals are, in the psychodynamic vision, expected to not have good self-insight, because most of the psychological processes occur outside conscious awareness, psychotherapists need to employ ingenious instruments to discover the underlying causes of current psychiatric symptoms. Hence, dream interpretation, free association, and hypnosis are some of the techniques used by psycho-analytic therapists. These techniques try to evade conscious reactions in order to reach the unconscious. Therefore these techniques are referred to as indirect or projective techniques.

Looking back at Freud's work from a contemporary viewpoint, several critiques are in place. First, it is depressing that in the psychodynamic approach, all individuals are bound to get into psychological problems, if not because of flawed personality development, then because of conflicts between mature personality structures. Second, in the psychodynamic view, the majority of important mental activity occurs unconsciously. Thus, our conscious perception of ourselves and our environment is not much more than a superfluous side effect of the truly important processes occurring unconsciously. Third, Freud was a productive writer, but he sometimes contradicts his own prior work. For example in *The etiology of hysteria* (1896), Freud explains his trauma and repression hypothesis which was based on his treatment of 18 female patients. These women subjected themselves to his treatment because of various hysterical complaints (i.e., anxieties). While they initially did not mention this, Freud discovered through projective techniques that they had had premature sexual encounters. The women did not remember such abuse consciously, but Freud derived the occurrences from his diagnostic processes. Apparently, the abuse had been repressed into unconsciousness. Freud concluded that the "hysterical symptoms are derivatives of memories operating unconsciously". Strikingly, nine years later in *My views on the part played by sexuality in the etiology of the neurosis* (1905) he withdraws his trauma and repression hypothesis and replaces it with a conflict theory. He now claims that the women had not been abused, but their memories of the abuse were the result of internal conflict. Thus, the women had developed false memories. In his words: "I overestimated the frequency of these occurrences ... I was not able to discriminate between the deceptive memories and actual happenings". This turn is remarkable. While the female patients had not mentioned the abuse but were informed about it

by Freud himself, Freud later “accused” them of having deceptive memories. Notably, many contemporary psychodynamic psychologists refuse to accept that Freud retracted his trauma and repression hypothesis. They believe that Freud published his 1905 paper merely for social-political reasons. It is believed that the (rich and influential) parents of the 18 female patients, confronted Freud with the curious outcome of his therapeutic experimentation (being that their daughters now falsely accused them of abuse), in reaction to which Freud retracted this theory just to remain at good terms with his cohabitants in Vienna (see Bowers & Farvolden, 1996, for this and other fascinating Freudian slips, i.e., mistakes betraying our unconscious motives).

A fourth remark concerning Freud’s work, is actually not a critique. The original German texts by Freud are interesting, if not as a source of psychological theory, then as a souvenir of a past era. The work is also flooded with humour. Unfortunately, the English translations of Freud’s work are at some points not completely adequate. For example, some of the typical German expressions (e.g., Ich, Überich, Es, Lebenstrieb, and Todestrieb) have been translated with Greek and Latin phrases (ego, superego, id, libido, and Thanatos) that sound much more serious. Much of the humour in Freud’s original German writings is completely lacking from the English translations.

A final remark is that Freud’s way of developing theory is inadequate when judged by standards that have by now become virtually generally accepted in academic psychology. These standards will be discussed further on in this chapter.

The second, influential psychological school is behaviourism. Even though, chronologically, behaviourism developed at the same time as psychodynamic theory, it can be seen as an antithesis to that theory. The behaviouristic movement leaned heavily on a handful of assumptions that were at that time (say around 1900) quite novel (e.g., Watson, 1913). First, behaviourists limited the scope of their research to overt, measurable behaviour. Note that this is in contrast with the psychodynamic approach that focusses on motives deeply buried in the unconscious soul. Second, behaviourists were inspired by the methodology of science. This implies that hypotheses need to be tested in experiments, and the results of experiments are published in peer-reviewed journals. The crux of such journals is that not all manuscripts that are submitted for publication will actually be accepted and published. The decision to accept or reject a pertinent manuscript is made by the editor, but he will consult scientists who are experts on the topic of the manuscript. These reviewers (who are peers to the author of the manuscript) are invited to give harsh comments on the manuscript. They will remain anonymous to the author, which prevents personal conflicts between authors

and reviewers (authors simply do not know who the reviewers are). Ideally, nowadays, the review process is double blind: The author does not know who reviewed his manuscript, and the reviewer does not know who wrote the manuscript he is reviewing. This peer-review system is considered a crucial part of serious science because it serves as a quality filter on the scientific literature.

Behaviourists further favour the most parsimonious interpretation of observations. If it looks like a duck, walks like a duck, and sounds like a duck, the behaviourist will conclude that it probably is a duck. Likewise, regardless of the complex explanations individuals sometimes conjure up to explain their own strange behaviour, behaviourists will want to explain behaviour by simple generally applicable predictive rules, relying on as little assumptions as possible. This approach is sometimes referred to as Ockham's razor. This approach makes it possible to discover psychological rules that govern human behaviour, by studying the behaviour of animals. That is, in the behaviouristic view, many human behaviours are governed by simple rules residing in the lower (non-cortex) brain regions that we share with animals. In other words: Human behaviour can be modelled by looking at the behaviour of rats and pigeons. Thus, the behaviouristic approach leans on the (in that time novel) views of Charles Darwin (1809-1882), implying common ground between different species.

Finally, and crucial to the content of behaviouristic psychology, it is assumed that individuals are virtually born equally. That is, given normal health, all humans have from birth, similar developmental possibilities. Humans are born with what John Locke (1632-1704) called a *tabula rasa*, a clean sheet. All that humans have become when reaching adulthood, all their individual differences, are caused by their specific learning history. In the ongoing nature-nurture debate (i.e., the question of whether we are who we are as result of predetermined, sometimes inherited, biological processes, or because of environmental influences we undergo during growing up), the behaviourists fully choose the side of the nurture view.

Well-known behaviourists are Ivan Pavlov (1849-1936) and Burrhus Skinner (1904-1990). Pavlov, who was actually a physiologist, is known for discovering conditional reflexes. As a starting point, Pavlov took the well-known phenomenon that dogs start producing saliva to extreme extent when exposed to food. This dribbling serves a natural purpose, namely to prepare for food intake. It occurs automatically, without conscious control. This reflex can be called a natural response to a natural stimulus (food). Pavlov exposed dogs to a sound (of a metronome) immediately before presenting food. He found out that the dogs learned quite rapidly, after a handful of trials, that the

sound predicted the deliverance of food. Hence, they started to dribble upon hearing the metronome. Pavlov discovered that the dogs had learned an association between the sound and food. They were now conditioned. Dribbling in response to a sound is called a conditioned response to a conditional stimulus. The dogs perseverated in their learned response. Even if they were untrained by exposure to the sound without subsequent reception of food, they would still dribble upon hearing the metronome. In fact, it turned out to be very difficult to unlearn the conditioned response. It took multiple trials to unlearn the response. And even then the conditioned response was extremely rapidly reinstalled by one pairing of sound and food. Note that the conditioned, unnatural response occurs without conscious intervention. It is an automated response (Yerkes & Morgulis, 1909).

Pavlov's finding is now referred to as an example of classical condition, in which a learning organism learns a predictive association between two external stimuli. We now believe that classical conditioning plays a major role in the determination of human behaviour. Twitmyer (1974), for example, discovered in 1902, that the human knee jerk reflex is also susceptible to classical condition. Watson and Rayner (1920) succeeded in making a baby extremely anxious for furry animals, by repeatedly exposing the child to an unpleasant loud noise after seeing a rabbit. Note that what they did to little Albert did not make them popular, and would nowadays be considered unethical (Harris, 1979). Nonetheless, by now, classical conditioning is considered a major cause of psychopathological symptoms such as anxiety and mood disorders. Likewise, behaviour therapy is one of the major therapeutic interventions for various psychopathological complaints. In such therapy, unlearning of maladaptive associations is crucial, for example, by exposing patients to their anxiety-provoking stimulus, and preventing them from engaging in avoidance. Consequently, the patient will discover that the feared object is not a predictor of harm, and fear will extinct (Eysenck, 1994). Exposure can be imposed gradually, or by instantaneous flooding. The idea that exposure to a feared stimulus decreases anxiety and discomfort goes back to a classic study by Zajonc (1968). In his research, Zajonc asked participants to rate the goodness of several stimuli with which they were hardly or not familiar. For example, participants were given the non-existing words Iktitaf, Enanwal, Zabulon, or Lokanta. The number of exposures to these words, before rating their goodness varied between one and 25. Zajonc found that the goodness increased from 2.6 (after one exposure) to 3.7 (after 25 exposures). Zajonc found similar results when exposing participants to stimuli like the ones presented in Figure 1. His findings indicate that the emotional appraisal of stimuli gets more positive after

repeated exposure. Zajonc (1968, p. 23) concluded: "The balance of the experimental results reviewed and reported in this paper is in favor of the hypothesis that mere repeated exposure of an individual to a stimulus object enhances his attitude toward it".

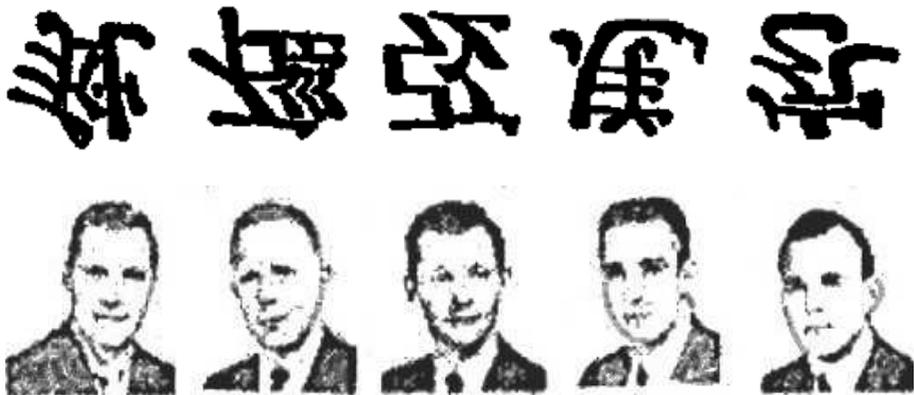


Figure 1. Examples of Chinese characters and male faces from the *mere exposure*-study Zajonc (1968).

Skinner, another renowned behaviourist, conducted various experiments that were slightly different from Pavlov's classical conditioning experiments. Whereas classical conditioning revolves around learning an association between two external stimuli, Skinner's operant or instrumental conditioning is about learning associations between one's own behaviour and external consequences. Typically, he would place an undernourished lab animal in a cage (nowadays referred to as Skinnerbox). This animal (oftentimes a rat or pigeon) will by nature display overt behaviour, out of curiosity or hunger. In one of his experiments, Skinner (1948) gave a handful of pigeons at a random moment something to eat. He discovered that all animals started to repeat the behaviour that they had carried out just before receiving food. They had "learned" that that behaviour was followed by receiving food (*post hoc ergo propter hoc*). Thus, they learned that they could manipulate their environment by acting in a particular way. Using selective reinforcement (shaping), Skinner even succeeded in teaching pigeons to play ping-pong. Operant condition is, just like classical conditioning, quite tenacious. Skinner found, for example, that learned behaviour remained long after reinforcement trials were concluded. It would typically take 10,000 non-

reinforced behaviours to unlearn the association and for the behaviour to go extinct.

Rules of operant conditioning dictate that while reinforcement increases the occurrence of behaviour, punishment will reduce its occurrence. In theory, the combination of stimulus valence and positive versus negative contingency delivers four behaviouristic interventions.

Table 1. Contingency and stimulus valence.

	Pleasant stimulus	Adverse stimulus
Positive contingency	positive reinforcement	punishment
Negative contingency	omission	negative reinforcement

As implied in Table 1, behaviour can be promoted by reinforcing it with positive reward, but also by taking away something unpleasant. The latter is the case if prisoners are promised sentence reduction upon proper behaviour. On the other hand, (unwanted) behaviour can be suppressed either by adding unpleasant punishment, or by taking away something pleasant (e.g., taking away the suspect's driver's license because of traffic violation). The idea that behaviour can be shaped with reward and punishment is oftentimes referred to as Thorndike's law of effect.

Just like classical conditioning, operant conditioning is considered to go quite far in successfully explaining human behaviour. Notably, behaviourism has been very influential in psychology. Indeed, psychology is nowadays still referred to as a, if not the, behavioural science. Strikingly, rules of operant conditioning also have direct relevance for criminal law. To appreciate this, it is important to differentiate between various penal objectives. Ultimately, the implicit basic reason to have laws is to promote societal cohesion. Within this framework, several reasons to punish criminals can be defined (see De Keijser, Van der Leeden, & Jackson, 2002). First, there is retribution, that is, the infliction of harm to the perpetrator by the government, to relieve feelings of vengeance on the part of the victim. Second, there is deterrence. The perpetrator must understand that committing crimes is not only forbidden, but also disadvantageous, because it results in punishment. In fact, the perpetrator must unlearn committing crimes. The idea behind this punishment goal is obviously rooted in behavioural principles. Besides this specific prevention, there is also general prevention, that is, other individuals than the convicted perpetrator will also refrain from future crime, because they witness that crime results in punishment. Note that there is behavioural research confirming that learning by observing others works well.

For example, Albert Bandura is known for his experiments on what has been dubbed vicarious learning, or modelling. Bandura, Ross, and Ross (1961) found out that children readily copy (aggressive) behaviour of adult human models but also cartoon figures. A third punishment goal is incapacitation or protection. By sentencing a perpetrator to imprisonment, he is incapacitated temporarily to commit further crimes. Thus, society is protected against this criminal. Fourth, by undergoing punishment, the perpetrator can shake off his bad reputation, and start new freshly. After completing his sentence, the perpetrator is fit for return to society, and society is ready to embrace him. Thus, punishment serves to rehabilitate ex-criminals. Fifth, punishment restores the relation between perpetrator and victim. This is necessary, even if the victim holds no grudge. Finally, even if the perpetrator committed a crime by which no-one is victimized directly, punishment can restore moral balance. In this view, the crime has disturbed a general, fictive societal moral balance that can be restored by undergoing punishment.

It remains to be seen to what extent the different punishment goals are fulfilled in practice. For example, it is largely unknown whether retribution really takes away feelings of vengeance in victims. Considering the punishment goal of specific prevention, it must be acknowledged that punishment does not work well: Many ex-convicts fall back to their old pattern of criminal behaviour. In fact, past crime is considered one of the best predictors of future crime (e.g., Hare, Harpur, Hakstian, Forth, Hart, & Newman, 1990; Webster, Douglas, Eaves, & Hart, 1997). Given that, and in general, crimes keep on being committed, by ex-convicts, but also by first timers, the goal of general prevention also at least partly fails. Incapacitation is a slightly different story. While incarcerated, convicts can do no or little harm to society. However, a financial fee will generally not suffice to incapacitate a wealthy white-collar criminal. The efficacy of rehabilitation is ill-studied, and results are not promising. Pratt, Piper, Appleby, Webb, and Shaw (2006) found out that ex-convicts commit suicide 14 times as often as people in the general community. This suggests that rehabilitation may not work properly. Finally, while restorative justice is valued much in legal theory, its effects are largely unknown.

There is reason to argue that the failure of criminal punishment to accomplish various goals is not due to flawed theory, but to invalid application. In particular, the failure to suppress recidivism does not reflect a shortcoming of behavioural theory, but is rather caused by invalid application of conditioning principles. Fruitful execution of the law of effect, requires many optimal circumstances. In some respects, the law of effect requires the test subject to perceive a causal relation between behaviour and consequence.

Einhorn and Hogarth (1986) describe five circumstances that make such perception likely: Covariation, chronology, contiguity, similarity, and absence of alternative causes. Covariation refers to togetherness of cause and effect: If the cause is present, so must the effect be, and vice versa. Chronology simply dictates that cause precedes effect. Contiguity means that effect must follow rapidly after the cause. If there is too long a delay, it will become more difficult to perceive a relation between cause and effect. Similarity refers to equality of cause and effect.

Applied to the preventive power of punishment, these criteria first imply that each unwanted behaviour has to be punished. Note that in practice of criminal justice, this is far from actual. The likelihood of being caught and sentenced differs per crime, but it is safe to assume that only a small fraction of all criminal behaviour results in punishment. Not only is a one on one relation between crime and punishment necessary, the punishment has to follow rapidly. To illustrate, in classical conditioning, the effect of delay on learning has been studied thoroughly. As can be seen in Figure 2, there are ample chronological options. It has been documented that short delayed conditioning works best to learn associations (see Domjan, 2003). There is reason to argue that in operant conditioning, delay plays an equally important role in the success of learning (e.g., Dickinson, Watt, & Griffiths, 1992). Hence, it is safe to conclude that a prison sentence carried out one year after committing a crime will unlikely prevent future crimes.

As to similarity, it is important that the punishment is proportional. Punishment should be harsh, at least perceived as punishment, but it should not be in excess. In animals, excess punishment may lead to learned helplessness (i.e., giving up attempts to react to environmental cues, because such attempts do not lead to the expected effects; see Seligman, 1975), and in humans additionally to feelings of injustice.

Finally, punishment is likelier to prevent future crime, if the perpetrator has alternative behavioural options. In a classic study, Herman and Azrin (1964) placed participants in a game in which they could earn cigarettes by oftentimes pressing a certain button in a display. Not each button press was rewarded with a cigarette. There was a variable interval schedule, that is, every once in an uncertain while, a button press would deliver a cigarette. Once participants had uncovered the idea, phase two began in which repeatedly pressing the button not only resulted in occasionally winning a cigarette, but also in the occasional administration of a loud irritating noise. For some participants, there was simply no other way to win cigarettes than to keep on pressing the button and trading the gains off with an occasional loud noise. For other participants, selecting and pressing another button on

the display offered the opportunity to keep winning cigarettes while the loud noise was evaded. Herman and Azrin found that if there was an alternative button, participants would stop pressing the initial button, and start pressing the alternative one. However, those participants who had no alternative button, kept on pressing the original button at the cost of undergoing punishment by noise. Apparently, people can choose to take some punishment, if the pertinent behaviour also has benefits. Note that in real life, prison sentence virtually takes away all alternatives to make a living in a non-criminal manner.

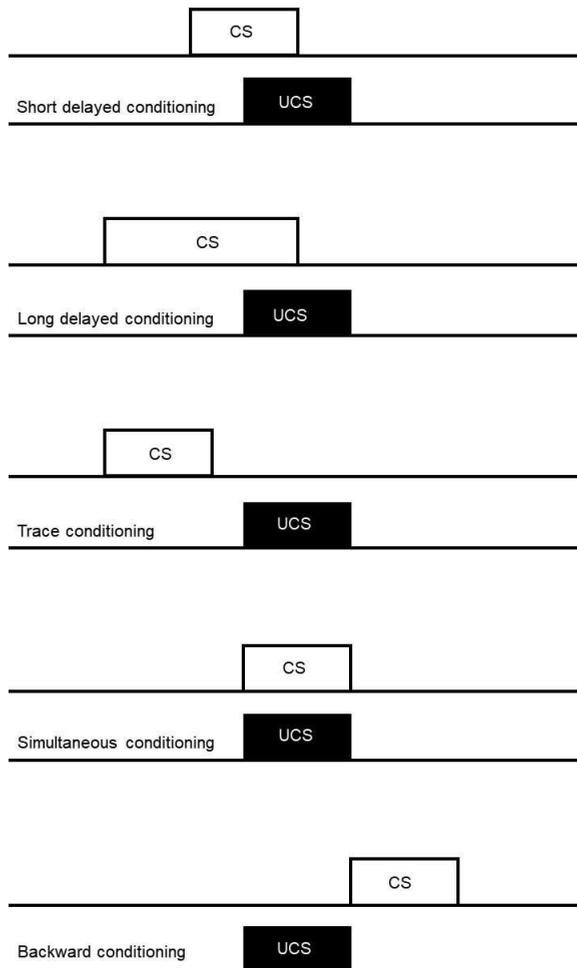


Figure 2. US-UCS-chronology in classical conditioning.