

Moral Competence as a Key to Doctors' Professional Development –
Empirical and Experimental Evidence

Georg Lind & Marcia Schillinger¹

Abstract

Professionals in the educational and health services -- like teachers, psychologists, social workers, nurses, and medical doctors -- are especially prone to encounter moral dilemmas in their everyday decision-making, and thus depend especially on the development of their judgment competence. They should neither rigidly apply their standards and values without regard for particular needs, nor should they be swayed totally by their feeling of compassion without regard for the principles of fairness.

In this paper we will review correlational and experimental studies which show that the ability to make moral judgments is not confined to the balancing of principles and situational demands, but that it may be also facilitate responsibility, norm conformity, helping behavior, democratic engagement, academic learning, and making swift decisions under pressure. We will also summarize a) studies showing a low and sometimes even negative impact of medical education on students' moral development, and b) studies showing how the use of dilemma methods can effectively promote moral competencies and thus contribute to a progressive reform of medical education.

¹ Contact: Prof. Dr. Georg Lind, Department of Psychology, University of Konstanz, 78457 Konstanz, Germany. Email: georg.lind@uni-konstanz.de , <http://www.uni-konstanz.de/ag-moral/> . Marcia, Schillinger, M.A., doctoral candidate. Email: marcia.schillinger@gmx.de

Introduction

To act professionally means both upholding professional standards and human values, as well as making decisions which do justice to particular circumstances. Thus professionals must continuously make moral judgments, as Lawrence Kohlberg has described them, doing "justice both to what the self believes and yet meet the situation." (1958, p. 129). This is not an easy task. The solution of a moral dilemma, "is difficult in the sense ... of doing justice to all the values which the self believes are true and important," and anyone confronted with moral dilemmas needs high moral judgment competence to find a just solution.

Professionals in the educational and health services – like teachers, psychologists, social workers, nurses, and medical doctors – are especially prone to encounter moral dilemmas in their everyday decision-making, and thus depend especially on the development of their judgment competence. They should neither rigidly apply their standards and values without regard for particular needs, nor should they be swayed totally by their feeling of compassion without regard for the principles of fairness. More specifically, "high levels of moral reasoning serve to guard against poor clinical performance." (Baldwin et al., 1996, p. 481). "A high level of moral reasoning virtually excludes the possibility of being a poor performer, and, conversely, that a low level of moral reasoning virtually excludes the possibility of performing well." (Self et al., 1995, p. 151; Sheehan et al., 1980; Sheehan et al., 1985).

For some reason, many medical professionals seem to believe that either there are no moral dilemmas involved in their work, or that the solution of moral dilemmas is not their business, or even that moral dilemmas are already taken care of by ethical specialists and committees. These beliefs may be traced to various reasons, either, due to low moral judgment competence medical professionals do not see most of the dilemmas that others see, or they deny the existence of moral dilemmas because they feel that they could not cope with them if they would admit to be responsible for their solution.

Unfortunately, medical education does not seem to contribute to the development of moral competence but rather seems to undermines it. Already Becker and Geers (1958) have observed that during their study medical students loose their idealism. In several studies it has been shown that medical students lower their preference for postconventional moral reasoning (Husted, 1978; Sheehan et al., 1981; Self et al., 1988; 1991; 1993; 1996). Medical students even loose some of their moral judgment *competence* as has been shown in studies in

the United States (Self et al., 1994), Finland (Helkama, et al., 2003), Canada (Patenneude et al., 2003), Czech Republic (S , 1999) and in Germany (Lind, 2000). Lind (2002) reported data from a longitudinal study in the nineteen-eighties in which German students of medicine slightly regress in regard to moral judgment competence while all the other students make marked progress (see *Figure 1*). Recently, Schillinger (2006) found in her cross-sectional study in Germany and Brazil that medical students' moral competencies are still regressing.

Rego (2004) concluded from his study that students enter professional morality in an uncritical way. They stop behaving critically and adapt to what could be called the "professional conformity". This regression of moral development is very alarming because education and especially higher education is considered to be the most powerful factor fostering moral orientations and moral competencies (Rest 1988; Rest & Thoma, 1985; Lind, 2002).

Recent empirical studies into the learning environment of medical students linked moral regression to the design of medical education (Lind, 2000; Helkama et al., 2003; Schillinger, 2006). In Germany, seventy percent of young doctors report that they have had no ethical training (Sponholz et al., 1995). In their study of importance medical students give to various forms of moral reasoning, Self et al. (1996) conclude that "the experience of medical education appears to inhibit the increase of moral reasoning of medical students that otherwise would be expected of in young adults of that age and education level." (p. 446)² "Medical school provides an exceptionally deficient environment with regard to role-taking opportunities. [...] Medical education turns students into a 'rote-learning machine'" (Helkama et al., 2003; p. 10 - 11). Fox, Arnold and Brody report that "ethnographic observations of medical trainees have generated concerns about the 'dehumanizing' effects of medical education" (p. 762).

In Schillinger's (2006) study, students of medicine report low involvement with the role-taking and guided reflection activities. The fact that 76% of the Brazilian-Portuguese and German-speaking medical students report that teachers give priority to memorization and reproduction of the learning content adds more evidence to the fact that they are under the influence of a traditional curriculum, where they have mostly a passive role. In addition, only 16% of the medical undergraduates report that their teachers' methods foster communication, discussion and critical abilities" (Schillinger, 2006, p. 110). This type of teacher centered learning at medical schools has also been reported from Finland (Helkama et al., 2003) and

² One should note, however, that the initial SRM scores of the students (359 out of 400) were already very high and that the increase of only 11 SRM-points may be due to ceiling effect.

Brazil (Rego, 2004)

Self et al.'s (1993) found that the test scores in the MCAT correlates positively ($r = -0,30$) with a loss on a moral development scale score (the DIT). This finding may indicate that admission policies based on medical school entrance tests may also add to the regression of moral development. Those who pass the tests seem to be more prone to the regressive influence of medical education.

In this paper we will review correlational and experimental studies which show that the ability to make moral judgments is not confined to the balancing of principles and situational demands, but that it may also facilitate norm conformity, helping behavior, democratic engagement, even academic learning, and making swift decisions under pressure. Therefore, we conclude that medical education should no longer regard fostering moral judgment competence as an extravagant add-on to its general goals but as a key goal. If professionals are enabled to find sustainable solutions to daily dilemmas – rather than avoiding them or referring them to 'ethical specialists' – they also will become better professionals in regard to medical and civic standards.

Medical Professionals' Moral Dilemmas

At the beginning of her internship, Dr. Paul didn't need to be told that it was illegal to remove organs or tissues from a dead person without permission from the family. As a Christian it would also violate her faith. However, she soon learned that there was a great shortage of transplant tissues for persons suffering from third degree burns. Their life can only be saved if their skin is replaced by skin from cadavers.

One day her boss tells her that they have again run out of suitable skin for grafts and they were in immediate need. There was an emergency operation scheduled for that same day. He told her to go to the morgue and quietly collect skin to be used for grafts in the surgery later that day. She should not talk to anyone about this.

For while she did not know what to do. But then she decided to go and get the skin.

Why did she feel that “she did not know what to do”? Obviously, her conscience was developed enough to feel a dilemma and she hesitated and did not immediately do what her boss wanted her to do. We do not know what kind of dilemma she perceived. It could have been

that she remembered from her Christian faith which forbids her to take away something from a human cadaver, or that she worried about violating the law.

What do medical students say when they hear about this case?³ Suzanne⁴, a twenty-three year old female medical student, who said that she agrees with Dr. Paul's decision writes: *"In this instance the need for the skin grafts (personal property) to save a life was greater than the need to keep the legality of not removing them. There are a couple of obstacles: a) violating her faith is very serious, but within her own faith (which holds life as the highest of values in some instances for example abortion) there could be ways to justify her action. b) She did not voice concerns to her boss about the moral and legal obstacles, and gives the impression of yielding to authority and not acting of her own, according to her ethical judgement - could she be just 'passing' the buck?"* Joe, a male student who strongly opposes her decision writes: *"I do not believe she does have the right to remove organs, tissues, etc. without the consent of the Patient. (from before he/she died) nor his/her family members."* Brian, another student argues: *"She violates a law; she risked the reputation of both herself and the hospital; although one patient may benefit now, may others may suffer if the hospital is penalized for this action; she violated the rights of the family; she went against her religious beliefs."* Joshua brings up yet other arguments against Dr. Paul's decision: *"The violation of the cadaver is a big problem, prohibited by the fact that it wasn't her right to take the skin; I'm unsure, because the person needing surgery would benefit more from the skin than the cadaver; envelops the principle of not taking the skin the permission should be avoiding - respect for the rights of living and dead is necessary for a healthy functioning."*

The moral sensitivity of the young medical students is nicely exemplified by two other responses. Glenda, female student: *"She saved a life by taking the skin but went against her faith; she disobeyed the law; a person's body is their personal property should not be violated; she compromised her own beliefs; she violated the autonomy of the deceased individual to decide their fate: respect for the person's wishes; there is no guarantee for the graft taken to work without error."* Jim: *"She blindly consented to authority; she violated her own principles; she violated the individual's autonomy; she didn't look into other opinions."*

At the end of the discussion, one of the participants asked: *"Professor, did you make up this story for our discussion? I cannot believe that such things could really ever happen."*

³ The first author (Georg Lind) uses this case in classroom discussions with high school and university students. The following statements were recorded in a discussion led by him at *North Western University*, Chicago in March 1996 in the medical ethics class of Dr. Michael Gross.

⁴ We have changed the names.

Of course, things like this happen and they happen more often than outsiders might think. How do medical professionals cope with such dilemmas? Do they learn how to cope with them in the same way as the young medical students did in my course? Do they feel responsibly to find a good solution? Or do they refer to “ethical specialists” for a solution or, even more likely, do they deny the dilemma to exist?

If the latter is the case, that is, if medical professionals deny responsibility or even the existence of a dilemma, why is it? Several possible reasons come to mind: the time pressure in the every-day life of a medical doctor, the seductive service of ethical specialists, economic reasons, concern for one’s career, Hippocratic oath etc.

Moral dilemmas sometimes surface in spectacular instances as in the case of Dr. Paul and they happen continuously in every-day life decision-making as in the case of the doctor who bills an injection which he never gave the patient, or in medical research. Recent reports show that deceit and corruption in the medical services has become a huge problem affecting the health of many people and also the economy (Fischer, 1994; Polke-Majewski, 2006). Highly reputed medical researchers, who played down the dangers of passive smoking for many years and have such caused many thousands deaths, have received funding from the cigarette industry (Süddeutsche Zeitung, 1998; Bornhäuser et al., 2006).⁵ Although moral competence may only be one of many factors involved in corruption and deceit, the ubiquity of this phenomenon in the medical service may indicate that there is a widespread lack of moral competencies. As the dilemma is ‘in the eye of the beholder’ (and does not exist without a human mind perceiving it), for many people the scale of the problem may remain largely hidden.

Research on the Relationship Between Moral Judgment Competence and Behavior

Research on the relationship between moral judgment competence and behavior has brought about many new insights which may help us to understand the reasons why moral judgment competence is so important for the medical profession and why we should be concerned

⁵ “Probably the most important health authority allied with the tobacco industry from the 1980s onwards was Karl Überla, President of the German Federal Health Office until 1985 and simultaneously head of a private research institute, the GIS, in Munich. In 1982 the Verband contracted with Überla’s GIS for a study on ‘passive smoking and lung cancer.’ “ (Bornhäuser et al., 2006).

about the much observed stagnation or even regression of this competence during medical education.

However, this relationship has been blurred by conceptual confusion and inappropriate ways to depict this relationship. Some of the confusion has been created by confounding moral orientations and moral (judgment) competencies. Both aspects of moral behavior can be clearly distinguished though they cannot be separated like components.⁶ In studies assessing moral orientations (like the preference for principled moral reasoning, or the importance of other stage reasoning), only low or zero correlations were found between moral orientations and behavior. Secondly, confusion has also been created by the use of intentions to behave or of self-reports on one's behavior as indicators for real behavior. As the experimental study by McNamee (1977) on helping behavior shows, actual behavior can be more closely related to moral competencies than behavioral intentions. Thirdly, confusion has been created by using only tests of statistical significance and correlational coefficients as indicators for the relationship between moral competence and behavior. Statistical significance is not a measure of association but of precision, and correlational coefficients are inappropriate to model uni-directional relationships (especially if the dependent variable is categorical rather than continuous). In his review of the research literature, Blasi (1980) reports a moderate correlation of moral judgment with behavior (especially with criminal behavior). Yet the relationship seems to be much bigger if one looks at the percentage of transgressors on various levels of moral development (see below).

To clarify some of the conceptual confusion, our paper is strictly based on Kohlberg's (1964) original definition of *moral judgment competence* as "the capacity to make decisions and judgments which are moral (i.e., based on internal principles) and to act in accordance with such judgments" (p. 425). This construct is measured by the *Moral Judgment Interview* (MJI, Colby, Kohlberg et al., 1987) and the *Moral Judgment Test* (MJT) by Lind (1989; in press). While the MJI is a mixed measure of moral competencies – including also moral orientation, Lind's MJT provides a pure measure of moral judgment competence, the so-called *C-score*. Most other instruments measure only moral attitudes or orientations like the preference for principled moral reasoning or the subjective importance of Stage 1 to 4 moral reasoning.⁷ The distinction between competencies and attitudes is important and can be easily

⁶ See Lind (2002) for a discussion of the difference between aspects and components.

⁷ For a more detailed discussion on these methodological issues see Pittel and Mendelsohn (1966) and Lind (1989; in press).

made. While competencies cannot be faked upward, attitudes can usually be simulated in any direction.

This paper reviews only studies which focus on moral competencies, that is, which use either Kohlberg's MJI or Lind's MJT for assessing a participant's level of moral-cognitive development. Only studies are included which report observed behavior (rather than self-reported or intended behavior). To illustrate the relevance of moral competence for the decision-making behavior of medical professionals and medical personnel, we will review studies on four areas: ascribing responsibility, rule transgression, pro-social behavior, decision-making competence, and learning competence.

Unfortunately, we did not find any experimental studies which include medical students or medical personnel. Yet if we can presume that people follow similar psychological laws regardless of their professional career, we can safely generalize these studies to medical professionals.

Ascribing responsibility

Ascribing responsibility seems to depend to a large degree on people's moral judgment competence. This hypothesis is supported by a study by Helkama (1981), who interviewed students of psychology about Kohlberg's (1958) famous Heinz-story to assess their level of moral-cognitive development. The story is constructed in such a way that only Heinz can save her by stealing an expensive drug. Heinz' wife suffers from cancer and he is the only one who can help her by getting that drug. Because this drug was very expensive and his health insurance would not cover the costs, he has to steal it. When Helkama (1981) asked the subjects whether Heinz was *responsible* for saving his wife, 77% of the respondents with low moral judgment competence (Stage 3) said 'No'. Only when respondents had a high level of moral judgment competence, a majority said 'Yes' (see *Figure 2*). So it seems that moral judgment competence is a prerequisite for perceiving the responsibility of the actor in this hypothetical story. We believe that we can transfer this finding to medical professionals. Doctors with low moral judgment competence may not be aware of their own responsibility when they should be.

Temptation to transgress social rules

If tempted to transgress a social rule, most people seem to not hesitate to do so. Yet, not all people do so and again it seems to be the level of moral judgment competence which makes the difference. Of the participants scored at Stage 1 to 3 on Kohlberg's Moral Stage scale, 60 % to 80% cheat on tests, behave dishonestly, fail to send back a questionnaire or remain quiet in a situation in which they should blow the whistle (see *Figure 3*). People on Stage 4 (keeping law and order) a smaller percentage of people, but still many break the rules. Only among people on the level of principled moral judgment competence, a minority, if any, break the rules if not policed by an authority. Viewing *Figure 3*, it is very impressive how big the differences are. They are bigger than a coefficient of correlation of about $r = 0,30$ would indicate.

Pro-social and pro-constitutional behavior

How important moral judgment competence seems to be for pro-social and pro-constitutional behavior, is shown in *Figure 4*. In the helping experiment by McNamee (1977; cited by Sprinthall et al., 1994, p. 192), undergraduate students who agreed to be interviewed by a research psychologist were led to a testing room. As they were entering the room they were observing another participant seeking help from the experimenter because he had just taken drugs and was having a bad time. The experimenter denied to help him because she had no experience with drugs. The drug-user slowly left the room. The subject was faced with the choice of whether to remain uninvolved or whether to intervene. The findings show that there was a linear relationship between helping and moral judgment competence. On the lowest level only 9% helped, on the highest three quarters helped (*Figure 4*). Interestingly, most others also thought they *should* help but failed to do so. The lower the level of moral judgment competence the bigger was the discrepancy between the personal feelings of obligation and the actual performance. The study on arrested civil protesters makes clear that almost only people with high moral judgment competence take action to defend the constitution, in this case the right to express one's opinion in the public. Finally, Kohlberg's experiment with subjects who agreed to participate in a so-called Milgram-experiment shows that resistance to immoral authority is not just a matter of will but of moral judgment competence. While

among lower stage subjects (on Stages 1 to 4) only 13 % refused to give other subjects electric shocks in an alleged learning experiment, among Stage 5-subjects 75 % broke up the experiment before it was completed. None of the subjects had to fear any personal disadvantages but were only told that completion of the task (giving electric shocks to a subject for his mistakes in the learning experiment) was of high importance for scientific research. It can be easily imagined, how often medical doctors get into similar situations, in which they witness people in distress or take the orders of some medical authority without knowing how to act responsibly.

The ability to reach a decision

We would think that people who have a high moral judgment competence are not only able to find a good solution to a socio-moral problem but they also do so in a faster way. In other words, we hypothesize that moral judgment competence is related with decision-making capability and that it is a more important factor than, lets say, any motivation variable, because if we do not know how to solve a problem we cannot substitute this lack of knowledge by trying harder or being more optimistic. In fact, in Mansbart's (2001) experiment this hypothesis was tested and well-supported (*Figure 5*). While none of the assessed motivation variables correlated higher than $r = 0,10$ with the speed of decision-making in moral dilemma situations, moral judgment competence correlated $r = 0,36$ with the speed of the subject's decision.

Learning behavior

New experimental studies suggest that moral judgment competence also has a great impact on learning behavior in general, not only in the moral domain. It seems that people who lack the capacity to solve socio-moral conflicts efficiently are so absorbed from struggling with the conflicts that they have little processing capacity left for solving academic tasks. First support for this hypothesis was found in a learning experiment by Heidbrink (1985). He showed 9th graders a short video on organ transplantation and gave them a before and after video test to see how much they knew already before the video and how much knowledge about the topic

they learned from the film. When he correlated the gained knowledge with the participants' moral judgment competence, he found a quite remarkable correlation of $r = 0,22$ between the two variables. In a study by Lind (2003) with 15 teachers who participated in a continuing education program, this correlation was supported: Participants with high moral judgment competence got more out of the course, and reported they applied pedagogical knowledge to their classroom practice more often. It seems that teachers who lacked judgment competence felt this disadvantage and were afraid that applying new methods of teaching would trigger dilemmas which they would not be able to cope with. So, as a consequence, they remained content with the traditional teaching methods that they knew well.

Analogously, medical students may learn more effectively and apply what they have learned more frequently if they have acquired high moral judgment competence.

Conclusion: What can be done?

Lind (2000) concluded that “there is no doubt anymore that present medical education fails to foster, or even obstructs, the development of moral competencies that medical doctors will need [in order] to become good physicians.” (p. 30). As our review of research literature shows, this still seems to be true although there are now many attempts to reform medical education. Our review of research also reinforces the significance of moral competencies for upholding legal and professional rules, for exhibiting pro-social and pro-constitutional behavior, for swift decision-making, and for effective learning and putting new knowledge to practice. What can and should be done to make medical education respond to this finding?

As far as we know, four proposals have been made and have also partly been tried out already: establishing ethics committees, offering lectures on medical ethics, convening seminars in which ethical cases can be presented and discussed, and moral dilemma discussions as part of the general medical curriculum. We will briefly discuss these proposals in turn.

Ethics committees

Ethics committees can support medical doctors in providing general guidelines for ethical decision-making but they cannot solve all the problems which medical personnel encounters

on a day-by-day basis. Sometimes, even they are overwhelmed by the intricacy of the moral dilemmas or by the task of reaching a consensus on a highly controversial matter. Consequently, it seems, "ethics committee meetings routinely degenerate into unfocused debates. ... As a result, participants often speak to hear their own voice rather than confront the arguments raised by others. No effort is made to critically evaluate competing arguments and reach substantive conclusions. ... [Students] are often left to see that ethics can justify anything (or nothing)" (Gross, 2001, p. 390).

Lectures on ethics

One of the most frequent recommendations seems to be to add lectures on general and medical ethics to the curriculum of medical education (Wissenschaftsrat, 1992; Roebert-Bosch-Stiftung, 1995). We have not seen any numbers, but it seems that this is the most widely practiced reform measure. Unfortunately, research studies do not support this. From a study in Israel, Gross (1999) concludes: "Moral development was not affected by formal moral education" (p. 336). In the United States, Self et al. (1989) even found a slight regression when comparing pretest and posttest scores of students who attended an ethics lecture. Self et al. (1994) found increases of moral development scores after a whole year of ethics courses but they were very small (see *Table 2*).

Case studies and discussions

Case-study seminars are another attempt to foster moral competencies in medical education. In these seminars real ethical dilemmas encountered in medical practice are discussed in order to find a solution. Thus, these seminars require the participants to apply existing moral knowledge rather than to 'invent' new moral knowledge from the participants' point of view. This may be the reason why Self et al. (1989) found only small increase in moral development as measured by an moral attitude test (*Table 2*). Gommel and Kessler (personal communication; see also 2006) made a similar experience with case-study seminars in a German medical school assessing moral development with the MJT, a competence test.

Moral dilemma discussions

Derek Bok (1976), the former president of Harvard University, wrote already some time ago: "If other sources of ethical values have declined in influence, educators have a responsibility to contribute in any way they can to the moral development of their students. [...] More attention needs to be given to problem-oriented courses in ethics. These classes are built around a series of contemporary moral dilemmas. [...] They will less be concerned with presenting solutions than with carrying on effort to encourage students to perceive ethical issues, wrestle with the competing arguments, discover the weaknesses in their own position, and ultimately reach thoughtfully reasoned conclusions. [...] Many individuals who are disposed to act morally will often fail to do so because they are simply unaware of the ethical problems that lie hidden in the situation they confront. [...] Moral issues can be discussed as rigorously as many other problems considered in the classroom. [...] Students will benefit from the opportunity to grapple with moral issues in a setting where no serious personal consequences are at stake." (p. 26-28).

With the Konstanz Method of Dilemma Discussion (KMDD), a method is now at available to effectively foster moral judgment competencies. A Thai group of researchers, Lerkiatbundit et al. (in press) have tested the method in a randomized experiment with nursing students and students of pharmacy technology. Their findings show that the KMDD is highly effective (*Table 2; Figure 6*). The moral judgment competence of students in the treatment group increased by 14 points within a six-week-period while the control group remained unchanged. Moreover, the gains of the treatment group were sustained over a period of six months. This study supported prior findings by the first author with psychology students and student teacher who also gained very much from the KMDD and from seminars using modified methods based on the same didactical principles as the KMDD (called here "similar method"; see *Table 2; Figure 7*). In terms of relative effect size, the KMDD now reaches effect size levels above $r = 0.70$, which is far above the effect size typically found in applied sciences such as education, medicine, psychotherapy or workplace improvement (see *Figure 9*). It is also significantly higher than the effect sizes of the Blatt-Kohlberg method of dilemma discussion (Lind, 2002).

As one of the first medical schools, the *Instituto Tecnológico y Educación Superior de Monterrey* (ITESM) has provided training for their professors in the KMDD and successfully adopted it to medical education (Hernandez & Medina, 2005). It should be noted, however,

that the method of dilemma discussion, if it is to be effective, must be led by well-trained teachers. Self-training is possible as the case Lerkiatbundit et al. (in press) shows. Yet, as a rule, about 100 hours of integrated practical and theoretical training by an experienced instructor seems necessary (Lind, 2003; see also the KMDD web-site: <http://www.uni-konstanz.de/ag-moral/>).

However, as we have seen, the investment into good quality education pays well. The research studies reviewed in this paper show that moral competence seems to be a key ability not only for ethical decisions but also for medical learning and practice in general. We believe that the introduction of methods like dilemma discussion will make the study of medicine more effective and less expensive, and will also enhance the medical profession as a whole by reducing malpractice and corruption.

No	Author(s)	Year of publ.	Country	N	Instrument	Years of ed.	Initial score	Final score	Change per year ⁸
Change of Moral Orientations									
1.	Husted	1978	US	488	DIT /P-score	2	50,2	50,6	0,3
2.	Sheehan et al.,	1981	US	52	DIT /P-score	3	63,0	66,2	1,1
3.	Self et al.	1993	US		DIT /P-score	3	45,1	45,3	0,1
	<i>Rest & Thoma [all students] Longitudinal</i>	1985	US	56	DIT /P-score	4	37	50	3,2
Change of Moral Orientation & Competence									
4.	Self et al. <i>Longitudinal</i>	1993	US		SRM	3	378	397	30
5.	Self et al.	1996	US	30(36)	SRM	3	359	370	1,1
6.	Self et al.	1989	US	36	SRM	0	344	323	-10,2
Change of Moral Orientation & Competence									
7.	Pateneude et al. <i>Longitudinal</i>	2003	Can	54(92)	MJI / WAS	3	348	330	-1,0
8.	Self, Schrader et al.	1993	US	20	MJI / WAS	4	378	397	6,5
9.	Self, Pierce & Shaddock	1994	US	20	MJI / WAS	3			4,1
10.	Helkama et al. <i>Longitudinal</i>	2003	Finnl.	43	MJI / WAS	2	362	342	-10
	<i>Colby, Kohlberg, et al. [all students] Longitudinal</i>	1987	US	40	MJI / WAS	6	331	423	25
Change of Moral Competence									
11.	Lind <i>Longitudinal</i>	2000	Ger	104	MJT /C-score	6	46,4	44,6	-0,3
	<i>Lind [all students w/o Med] Long.</i>					6	41,6	47	0,9
12.	Schillinger	2006	Brazil	99	MJT /C-score	3	27,8	15,7	-4,0
13.	Schillinger	2006	Ger	253	MJT /C-score	3	29,5	24,7	-1,6
	<i>Schillinger [Psychology students]</i>	2006	Ger	71	MJT /C-score	3	36,8	38,4	0,5

Table 1. Change of Scores of Medical Students (grey fields = non-medical comparison groups)

⁸ MJI-scores (ranging from 100 to 400) and SRM-scores (100 - 400) have been re-scaled to range from 0 to 100 by multiplying both score by 6/10 as both scales refer to a theoretical scale of six stages even though the scales often do not report Stage 6 (MJI) or Stage 5 and 6 moral reasoning (SRM) because of lack of subjects with such scores (MJI) or due to theoretical critique (SRM).

Longitudinal Change of Moral Judgment Competence

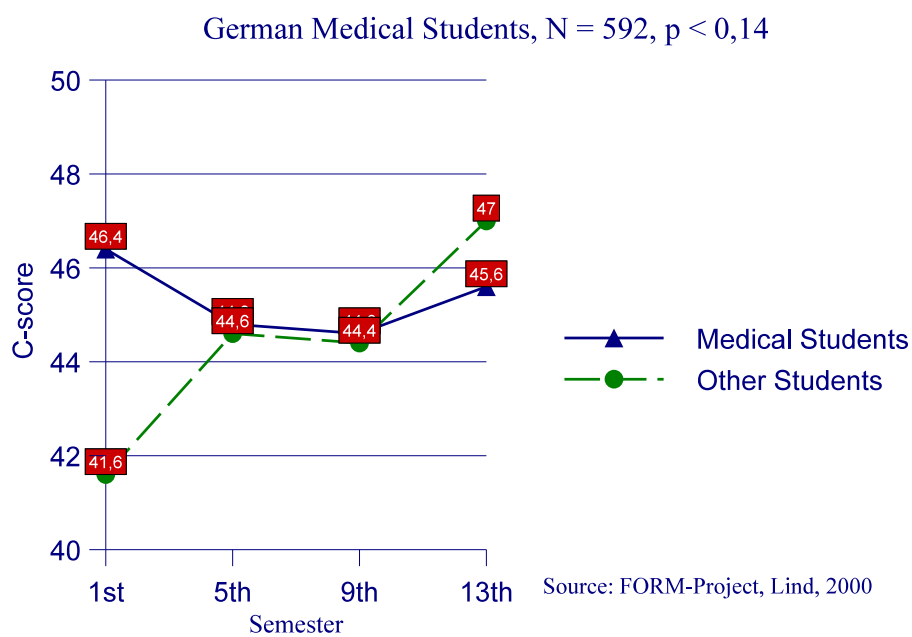


Figure 1

Medical Education and Moral Judgment Competence In the Czech Republic

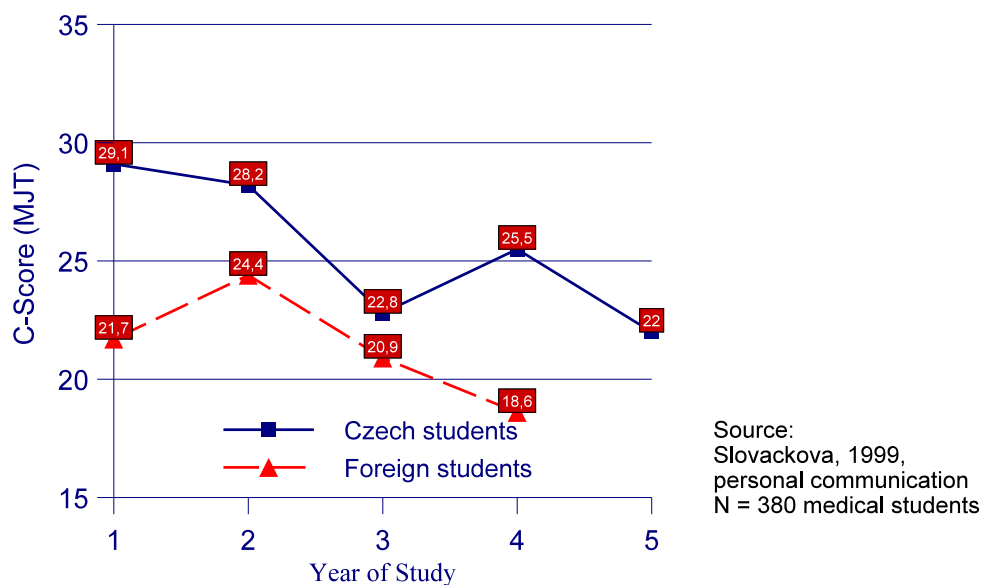


Figure 2

Moral Judgment Competence and the Ascription of Responsibility

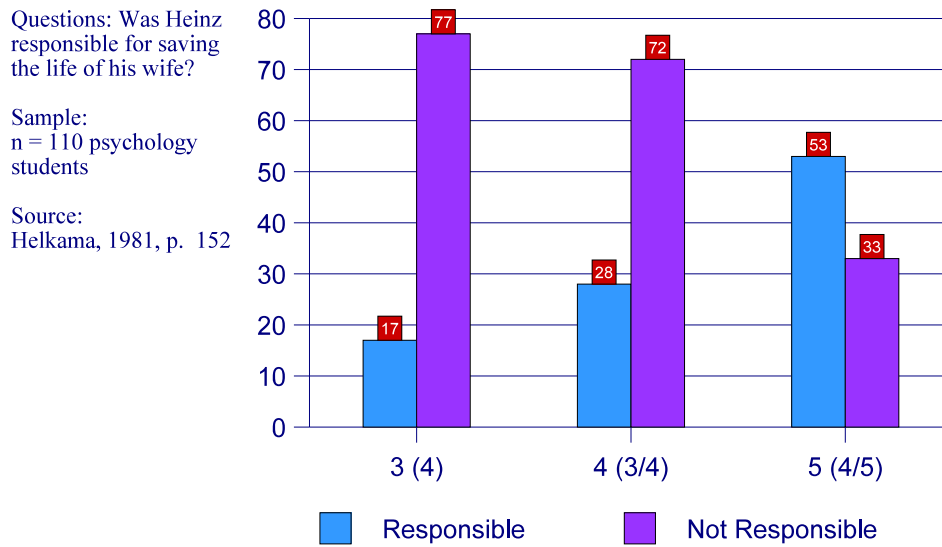
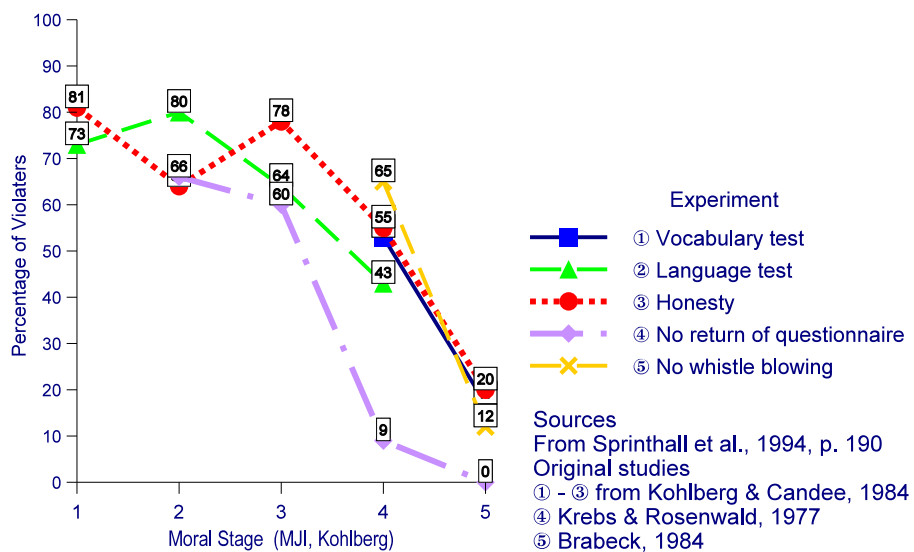
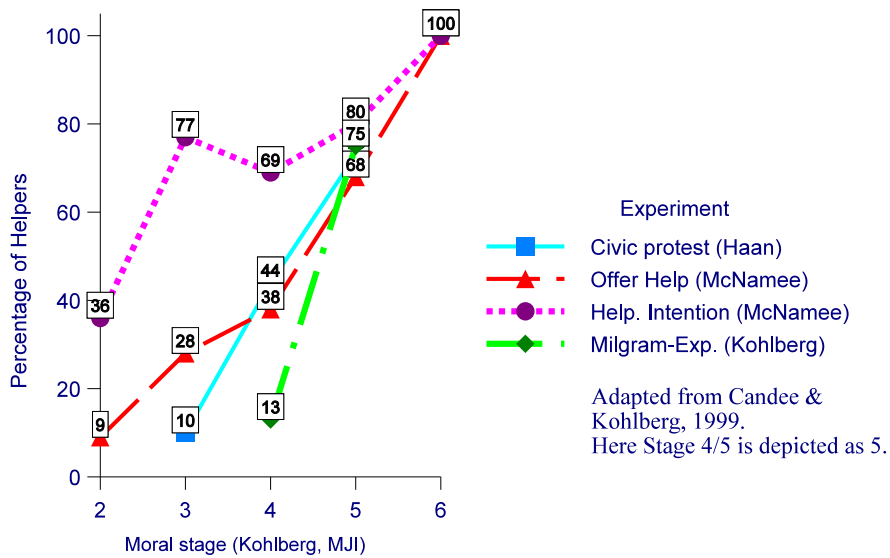


Figure 3

Resisting the Temptation to Violate a Social Rule



Helping Behavior and Civic Protest



Decision-making Process

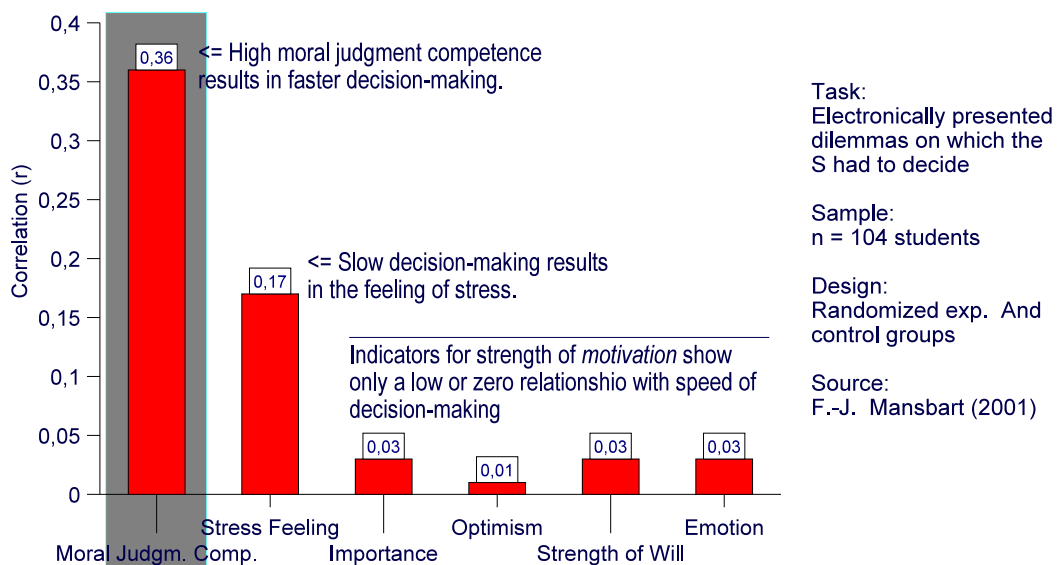


Figure 6

Ability to Learn

Intervention: A 15-minute video on organ transplantation.

Measurement: Knowledge test about organ transplantation before and after the video.

Moderator variable: Moral judgment competence (MJT, C-score).

Participants: 9th graders

Finding: Correlation between moral judgment competence and ability to learn (knowledge gain)
 $r = 0,22$

Source: Heidbrink, 1985

Figure 7

The Effect Size of the KMDD and Similar Methods

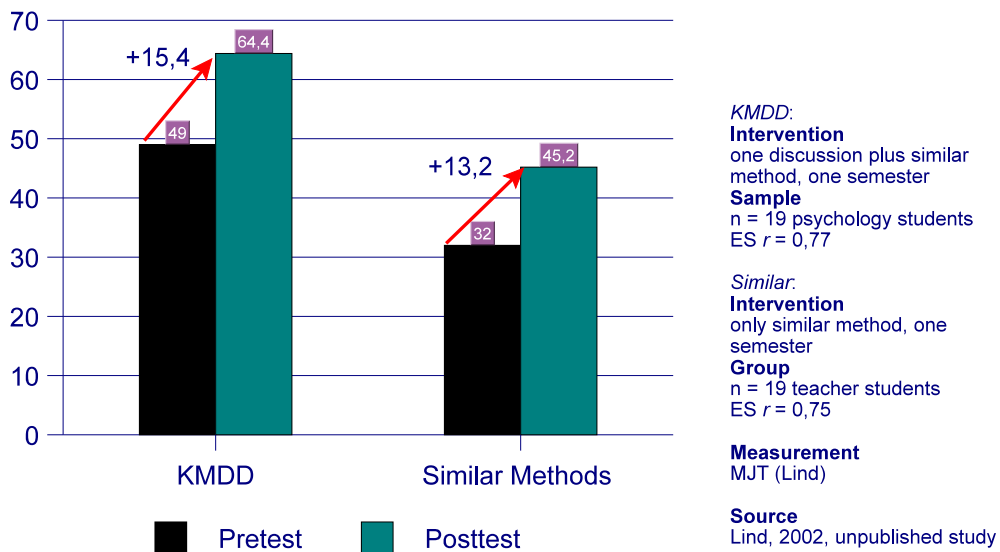


Figure 8

The Effect Size of the KMDD

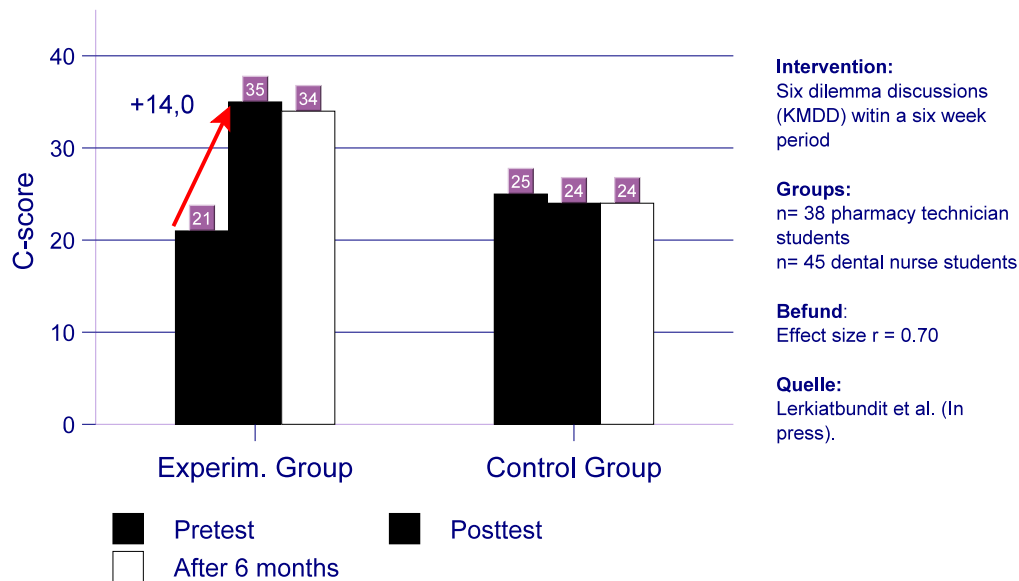


Figure 9

Source of effect size studies

- ① The effects of the Konstanz-method on moral judgment competence (Moral Judgment Test, MJT): Unpublished analyses of pretest-posttest intervention study by Lind; N = 42.
- ② The effects of the Blatt-Kohlberg-method on stage of moral reasoning (Moral Judgment Interview, MJII): Re-analysis by Lind, G. (2002). Can morality be taught (in German).
- ③ The effects of the Blatt-Kohlberg-method on moral preferences (Defining-Issues-Test, DIT): Schläfli, A., Rest, J.R. & Thoma, S.J. (1985). Does moral education improve moral judgment? A meta-analysis of intervention studies using the Defining Issues Test. *Review of Educational Research*, 55, 319-352.
- ④ The effects of medical, psychological, educational & vocational interventions (to the right of the line): Lipsey, M.W. & Wilson, D. B. (1993). The efficacy of psychological, educational and behavioral treatment. Confirmation from meta-analysis. *American Psychologist*, 48, 1181-09.

Figure 10

The Effect size r of the KMDD in Comparison to Other Methods and Other Fields

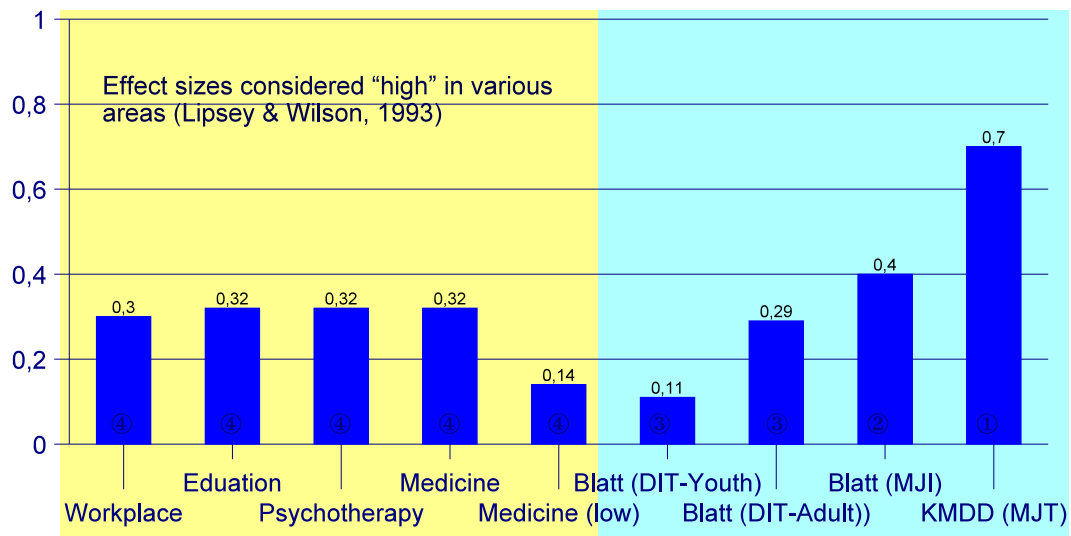


Figure 11

No	Author(s) Intervention	Year of publ.	N	Instrument	Years	Initial score	Final score	Change per year ⁹
Change of Moral Orientation								
1.	Self, Olivarez & Baldwin One year of ethics course	1994	20	DIT / P-score	1	42,2	42,7	0,5
2.	Self et al. Lecture on medical ethics	1989	37	SRM	0	349	346	-1,6
3.	Self et al. Lecture & case studies	1989	46	SRM	0	353	357	2,0
Change of Moral Competence								
4.	Lerkiatbundit et al. ¹⁰ Konstanz Method of Dilemma Discussion	in press	42	MJT	0,1	21	35	14
5.	Lind ¹¹ Konstanz Method of Dilemma Discussion (2002)	unpubl.	38	MJT	0,3	49	64,4	15,4

Table 2. Intervention Studies

⁹ For better comparison, changes have been standardized on one year. In addition, MJI-scores (ranging from 100 to 400) and SRM-scores (100 - 400) have been re-scaled to range from 0 to 100 by multiplying both score by 6/10 as both scales refer to a theoretical scale of six stages even though the scales often do not report Stage 6 (MJI) or Stage 5 and 6 moral reasoning (SRM) because of lack of subjects with such scores (MJI) or due to theoretical critique (SRM).

¹⁰ This gain was NOT standardized but is based on six weeks of intervention. Standardization would lead to a gross overestimation of the gains.

¹¹ Unpublished study. This gain was NOT standardized but is based on one dilemma discussion and a one semester course with similar didactic methods (Lind, 2003; 2005). See footnote 9.

References

- Baldwin, D.C., Adamsson, T.E., Self, D.J., Sheehan, T.J., & Oppenberg, A.A. (1996). Moral reasoning and malpractice. A pilot study of orthopedic surgeons. *The American Journal of Orthopedics*, July 1966, pp. 481-484.
- Becker, H. & Geer, B. (1958). The fate of idealism in medical school. *American Sociological Review*, 23, 50-56.
- Bok, D. (1976). Can ethics be taught? *Change*, 26-30.
- Bornhäuser, A., McCarthy, J., & Glantz, S.A. (2006). German Tobacco Industry's Successful Efforts to Maintain Scientific and Political Respectability to Prevent Regulation of Secondhand Smoke. *Center for Tobacco Control Research and Education University of California, San Francisco CA* 94143-1390. http://www.tabakkontrolle.de/pdf/German_Tobacco_Indust_Report_03_06.pdf (2.6.2006)
- Fischer, W. (1994). Der heiße Tip kam von einem Chirurgen. *Südkurier* 1994, Nr. 123, 31.5.94
- Fox, E., Arnold, R.M., & Brody, B. (1995). Medical ethics education: past, present, and future. *Academic Medicine*, 70, 761-769.
- Gommel, & Kessler (2006). *Medical Ethics Seminars, Moral Judgement Competence and Authoritarianism*. Paper prepared for the meeting of the Association for Moral Education, Fribourg, Switzerland, July 2006.
- Gross, M.L. (1999). Ethics education and physician morality. *Social Science & Medicine*, 49, 329-342
- Gross, M.L. (2001). Medical ethics education: to what ends? *Journal of Education in Clinical Practice*, 7(4), 387-397.
- Helkama, K. (1981). *Toward a cognitive-developmental theory of attribution of responsibility*. Helsinki: Suomalainen Tiedeakatemia.
- Heidbrink, H. (1985). Moral judgment competence and political learning. In G. Lind, H.A. Hartmann & R. Wakenhut, eds., *Moral Development and the Social Environment. Studies in the Philosophy and Psychology of Moral Judgment and Education*, pp. 259-271 Chicago: Precedent Publishing Inc.
- Helkama, K., Uutela, A., Pohjanheimo, E., Salminen, S., Koponen, A., & Rantanen-Vantsi, L. (2003). Moral reasoning and values in medical school: a longitudinal study in Finland. *Scandinavian Journal of Educational Research*, 47, 4, 399-411.
- Hernandez, C. & Medina, G. (2005). *Ethics and professionalism in medicine. Cross-curricular integration of ethical basis for medical students. Escuela de Medicina de Monterrey*. Presentation at the meeting of the Association for Moral Education, Cambridge, MA, Nov. 2005.
- Husted, S.D. (1978). Assessment of moral reasoning in pediatric faculty, house officers and medical students. *Proceedings of the 17th Annual Conference in Medical Education*, 17, 439-441.
- Kohlberg, L. (1958). The development of modes of moral thinking and choice in the years 10 to 16. University of Chicago, unpublished doctoral dissertation.
- Kohlberg, L. (1964). Development of moral character and moral ideology. In M.L. Hoffman & L.W. Hoffman, eds., *Review of Child Development Research*, Vol. I, pp. 381-431 New York: Russell Sage Foundation.
- Kohlberg, L. & Candee, D. (1984). The relationship of moral judgment to moral action. In: L.

- Kohlberg, Essays on moral development, Vol. II, The psychology of moral development, pp. 498-582 San Francisco Harper & Row.
- Lerkiatbundit, S., Utaipan, P., Laohawiriyanon, C., & Teo, A. (in press). Randomized controlled study of the impact of the Konstanz method of dilemma discussion on moral judgement. *Journal of Allied Health*.
- Lind, G. (1989). Measuring moral judgment: A review of 'The Measurement of Moral Judgment' by Anne Colby and Lawrence Kohlberg. *Human Development*, 32, 388-397.
- Lind, G. (2000). Moral regression in medical students and their learning environment. *Revista Brasileira de Educacao Médica*, 24(3), 24-33.
- Lind, G. (2002). *Ist Moral lehrbar? Ergebnisse der modernen moralpsychologischen Forschung*. [Can Morality be Taught? Research Findings from Modern Moral Psychology]. Second Edition. Berlin: Logos-Verlag.
- Lind, G. (2003). *Moral ist lehrbar. Ein Handbuch zur moralischen und demokratischen Bildung*. [Morality can be taught. A Handbook for Moral and Democratic Education.] München: Oldenbourg
- Lind, G. (2005). Moral Dilemma Discussion Revisited - The Konstanz Method. *European Journal of Psychology*, February 2005 <http://www.ejop.org>.
- Lind, G. (in press). The meaning and measurement of moral judgment competence revisited - A dual-aspect model. In: D. Fasko & W. Willis, Eds., *Contemporary Philosophical and Psychological Perspectives on Moral Development and Education*. Cresskill, NJ: Hampton Press.
- Mansbart, F.-J. (2001). *Motivationaler Einflüsse der moralischen Urteilsfähigkeit auf die Bildung von Vorsätzen*. Unpublished diploma thesis, University of Konstanz, Deptment of Psychology.
- McNamee, S. (1977). Moral behavior, moral development and motivation. *Journal of Moral Education*, 7(1), 27-31.
- Pateneude, J., Niyonsenga, T., & Fafard, D. (2003). Changes in students' moral development during medical school: a cohort study. *Canadian Medical Education Journal*, 168 (7), 840-844.
- Pittel, S.M. & Mendelsohn, G.A. (1966). Measurement of moral values: a review and critique. *Psychological Bulletin*, 66, 22-35.
- Polke-Majewski, K. (2006). Betrug mit gespendeter Arznei. Wie kommt man der Korruption im Gesundheitswesen bei? Transparency International rechnet mit Milliardenverlusten durch die illegalen Praktiken. [Deceit in donating drugs. How does one cope with corruption? Transparency International estimates billions of losses through illegal practices.] Die Zeit, 16.5.2006.
- Rego, S. (1994). *A prática na formação médica: o estágio extracurricular em questão*. [Practice in medical education]. Unpublished master's thesis, Instituto de Medicina Social. Universidade do Estado do Rio de Janeiro.
- Rest, J. (1988). Why does college promote development in moral judgment? *Journal of Moral Education*, 17, 183-194.
- Rest, J.R. & Thoma, S.J. (1985). Relation of moral judgment development to formal education. *Developmental Psychology*, 21, 709-714.
- Robert-Bosch-Stiftung (1995). *Das Arztbild der Zukunft*. Gerlingen: Bleicher.
- Schillinger, M. (2006). *Learning environments and moral development: How university education fosters moral judgment competence in Brazil and two German-speaking countries*. Unpublished Dissertation, University of Konstanz.

- Self, D.J., Wolinsky, F.D. & Baldwin, D.C. (1989). The effect of teaching medical ethics on medical students' moral reasoning. *Academic Medicine*, 64, 755-759.
- Self, D.J., Schrader, E., Baldwin, D.C., Wolinsky, F.D. (1993). The moral development of medical students: a pilot study of the possible influence of medical education. *Medical Education*, 27, 6-34.
- Self, D.J., Olivarez, M., & Baldwin, D.C. (1994 a). Moral reasoning in veterinary medicine. In: J.R. Rest & D.F. Narvaez, Eds., *Moral development in the professions: Psychology and applied research*, pp. 163-172 Hillsdale, NJ L. Erlbaum Associates, Inc.
- Self, D.J., Pierce, A., & Shaddock, J.A. (1994 b). A survey of the teaching of ethics in veterinary education. *Journal of the American Veterinary Medical Association*, 204(6), 944-945.
- Self, D.J. & Baldwin, D.C. (1994 c). Moral reasoning in medicine. In: J.R. Rest & D.F. Narvaez, Eds., *Moral development in the professions: Psychology and applied ethics*, pp. 147-163 Hillsdale, NJ L. Erlbaum.
- Self, D.J., Baldwin, D.C., & Wolinsky, F.D. (1996). Further exploration of the relationship between medical education and moral development. *Cambridge Quarterly of Healthcare Ethics*, 1996, 444-449.
- Sheehan, T.J., Husted, S. D. R., Candee, D., Cook, C. D., & Bargen, M. (1980). Moral judgment as a predictor of clinical performance. *Evaluation and the Health Professions*, 3(4), 393-404.
- Sheehan, T.J., Husted, S.D., & Candee, D. (1981). *The development of moral judgment over three years in a group of medical students*. Paper presented at the annual meeting of the American Educational Research Association, 1981.
- Sheehan, T.J., Candee, D., Donnelly, J., & Husted, S.D. (1985). Structural equation models of moral reasoning and physicians performance. *Evaluation and the Health Profession*, 3, 379-400.
- Simeaner, H., Röhl, T., & Bargel, T. (2004). *Datenalmanach zum Studierendensurvey 1983 - 2004. Studiensituation und Studierende an Universitäten und Fachhochschulen* (No. 43). Arbeitsgruppe Hochschulforschung, Universität Konstanz.
- Sponholz, G., Kohler, E., Ströbler, M., Gommel, M., & Baitsch, H. (1995). Ethik in der Medizin in der neuen ÄAppO - was Studierende der Medizin wünschen. *Zeitschrift für Medizinische Ethik*, 41, 236-241.
- Sprinthall, N.A., Sprinthall, R.C. & Oja, S.N. (1994). *Educational Psychology. A Developmental Approach*. Sixth Edition. New York: McGraw-Hill.
- Süddeutsche Zeitung (1998). Tabakindustrie zahlte Fachbeiträge. *Süddeutsche Zeitung vom 1.9.98*, München.
- Wissenschaftsrat (1992). *Leitlinien zur Reform des Medizinstudiums*. Köln: Wissenschaftsrat.