

**The Mediating Role of Gender & Kind of Crime in
Differences among Delinquent and Non-delinquent
Groups at Meta-Cognitive Skills**

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الدور المعدل للنوع والجريمة في الفروق بين الجانحين وغير الجانحين
في مهارات الوعي بالمعرفة
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ملخص:

تسعى الدراسة الراهنة إلى اختبار الكفاءة ال سيكومترية لمقياس الوعي بالمفردة الذي أعده **O'Neil & Abedi** (1996) في فحص تأثير مهارات الوعي بالمعرفة في الجنوح والتي أي مدى يعدل هذا التأثير نوع الجانح ونمط جريمته بشد ملت الدراسة 119 جانح وجانحة من المودعين مؤسستي قويسنا والمرج؛ متوسط أعمارهم **16,69** بانحراف معياري سنتان. و 49 من المناظرين لهم غير الجانحين (27 منهم من أطفال الشوارع المقيمين بمؤسسة قوسينا أيضا) من متعدي الدراسة والذين التحقوا بالتكوين المهني بشبين الكوم).

تكشف النتائج عن:

غياب الفروق ذات الدلالة بين الجانحين والجانحات في مهارات الوعي بالمعرفة.

2- لا توجد فروق دالّة في الجانحين والجانحات في مهارات الوعي بالمعرفة.

3- هناك اقتران – دال إحصائيا – بين تكرار ارتكاب الجريمة وكل من التخطيط والاستراتيجية المعرفية كمهارات نوعية للوعي بالمعرفة.

4- تتمتع الصورة العربية لمقياس الوعي بالمعرفة بتقديرات ثبات وصدق مقبولة. وتمت مناقشة هذه النتائج في ضوء ما أسفرت عنه الدراسة السابقة بالمجال.

Abstract

The current study aimed to evaluate the psychometric efficiency of the Arabic version of State Meta-cognitive Inventory (S.M.I.) (O'Neil & Abedi, 1996), in addition to investigate the role of meta-cognitive skills in influencing delinquency, and how they differ depending on the gender and the kind of crime. The sample consisted of 119 male and female offenders who were residing in the Kewsna Juvenile Welfare (Menoufia), and Ain Shams Juvenile Welfare (Cairo), Egypt. In addition to 49 participants used as a control group. The results showed that: 1. There is no significant differences between offender female and offender male in meta-cognitive skills, 2. There is no significant differences among delinquent groups in meta-cognitive skills, 3. there is a significant positive correlation between frequency of arrest and both the planning and cognitive strategy, and 4. the results also showed that the Arabic version of S.M.I has a reliable validity and reliability. The results discussed in light of the previous studies.

Introduction

Different statistics show an increase in the rate of delinquency among adolescents.. In Egypt, for example, Department of Public Security; Egyptian Ministry of the Interior data indicate the increase of the proportion of crimes committed by the young in the last decade, as a result of exposure to various sources of delinquency, including: dealing with suspects, begging, homelessness, escape from school, gambling, and the rely on illegal means to live (Shehata, 2004: 70). In Turkey, as another example, according to the police records, 137,334 persons (females 6.4%, males 93.6%) were arrested within the year 2000. Three percent of those persons arrested by police were under the age of 15, while 11.7% were between the ages of 15 and 17; The police records in Turkey show an increase of the proportion of crimes committed by adolescents, The rate of accused adolescents was approximately 650 per 100,000 in the 11 to 17 year old population for the year 1995. It increased to 869 per 100,000 for the year 2000 (Ozen; Ece; Oto; Tirasci & Goren,2005).

American statistics as a third example of the growing crime rate among the young; indicate that: for the period 1980-1997, a total of 88% of juvenile perpetrators were 15 years or older, 93% were male and 56% were black. Over 90% of juvenile murders kill someone of the same race. Males are much more likely to kill an acquaintance (54%) or a stranger (37%), while females are more likely to use a knif (32%) or other violent means to kill than use a gun (4%) (Flannery, Hussey& Jefferis, 2005: 415). In 2000,12% of those who were arrested were adolescents, and females represent a quarter of this ratio (Ihekwoaba, 2004).

In Trying to explain the delinquent behavior Crick and Dodge, 1994 As cited in: Losel (2003: 254- 255) proposed that aggressive youngsters show specific tendencies in the: (a) encoding of cues, (b) interpretation of cues, (c) clarification of goals, (d) response access and construction, (e) response decision and evaluation and (f) behavior enactment. For example, they perceive more aggressive stimuli in social situation, interpret the intentions of others more frequently as being hostile, set more egocentric goals for actions, retrieve more aggressive reaction patterns from their memory, evaluate the consequences of aggressive actions more positively, and possess fewer non- aggressive interaction skills. Such modes of information processing make aggression a subjectively adequate reaction in social interactions. They are important mediators between long-term social influence, personality factors, and situational conditions of delinquent behavior.

The personality dispositions may also have a different impact on various delinquent pathways. Frick, 1998 As cited in: Losel (2003: 253) distinguished between two causal pathways of antisocial development. The first results primarily from poor parental socialization and low intelligence. The second is due to callous, unemotional, and other traits of psychopathy.

Another explanation of delinquent behavior indicated that aggression can be taught by parents through models of behavior, reinforcement, and home conditions that frustrate or victimize the child (Flannery et al., 2005: 421).

In Egypt, research interest in juvenile delinquency began since 1920s. It extended to include different areas; law studies was interested in examining the punitive measures for offenders, social

studies was interested in examining the different kinds of delinquency among children, their general behavior, and social factors which result in delinquency. These studies were conducted either by individuals or organizations and research centers (Abdul Nabi, Abdul Gawad, Goma, & Abdul Aziz, 1994). Also there were a lot of psychological studies which are interested in delinquents and those prone to delinquency. These studies have focused on specific variables which were believed to be the direct cause of juvenile delinquency such as the social and psychological maladjustment, delinquents' traits, the psycho - social context which result in delinquency, the interaction between parents and their children, the cognitive variables, (respectively), and few studies were interested in how to predict delinquency (Nasr, 1994).

The present study aims to:

- 1- Examine the differences between delinquents and non-delinquents in the meta-cognitive skills and the moderator role of both gender and the kind of crime in these differences. This is in light of the results of research summarized by Blazei; et al.(2006) which indicate that poor academic performance; low IQ; hyperactivity; inattention; impulsivity and risk taking behaviors have been identified as correlates of antisociality (delinquency is one of its phenotypic expressions). At the same time, the relationship between the academic performance and meta-cognitive skills is a positive straight linear relationship, where, Meta-cognition, or thinking about thinking, has been shown to predict academic performance. Maqsud (1997) showed that meta-cognitive skills have significant positive association with academic achievement. Zhicheng & Stephen (1999) study provided evidence for the proposed connection between meta-cognitive development

and academic achievement, meta-cognitive development was found to vary with academic achievement. Also Hall (2001) study indicated that meta-cognitive skills play an important role in academic achievement. O.Neil & Abedi (1996) summarized results of studies which indicate that meta-cognition was influencing achievement and not vice-versa. Lin- Agler, Moore& Zabrucky (2004) study revealed that competitive students gave higher meta-cognitive self-assessments than less competitive students.

The previous indicators make it easy to conclude that the relationship between delinquency and meta-cognitive skills is a negative straight linear relationship. This means that meta-cognitive skills are marker factor for non- delinquents; in other words delinquents are low in the degree of these skills.

This is consistent with the previous results (for review: Shehata, 2004: 70; 141-145; Arfa, 2005: 53-80), which indicated a positive relationship between the academic failure and delinquency, persons with low scores on cognitive abilities are prone to academic failure which make them hate their study, and looking for alternative activities such as watching violence movies, squabbling with colleagues, escape from school, these behaviors reinforce delinquency and increase school failure.

2-Another aim of the present study is to contribute to the literature by identifying meta-cognitive skills differences within offender populations according to the kind of crime, and determining the predictive ability of these skills as indicators of criminal risk. There are numerous theories that explain the origins of delinquent behavior. Depending on their background, from biology, psychology, sociology, economy, or other disciplines,

these theories emphasize different core constructs, and levels of explanation (Losel, 2003: 245).

The present authors try to advance a metacognitive model of delinquent behavior based on Clirck and Dodge, 1994 social information processing model of delinquent behavior and Sternberg, 1980 discussion of metacognitive skills. In this context we will first clarify the metacognitive construct and its components, hence, introduce the suggested model.

“Metacognition” essentially means cognition about cognition; that is, it refers to second order cognitions: thoughts about thoughts, knowledge about knowledge or reflections about actions. So if cognition involves perceiving, understanding, remembering, and so forth, then metacognition involves thinking about one's own perceiving, understanding, remembering, etc. These various cognitions about cognitions can be labeled “metaperception”, “metacomprehension” and “metamemory”(refers to knowledge about memory [perception. so on] processes and contents) with “metacognition” remaining the superordinate term (Louca, 2008:2; Schneider & Lockl,2004).

The literature in the area of metacognition identifies two distinct aspects of metacognition: knowledge about cognition and the regulation of cognition (Vrugt& Oort, 2008), knowledge about cognition refers to knowledge or beliefs about what factors or variables interact in what ways to affect the course and outcomes of cognitive enterprises (Vrugt& Oort, 2008). Flavell and Wellman, 1977 As cited in: Schmitt (2003) distinguished metacognitive knowledge concerning the self (e.g., I know about this topic), the task (e.g., I know that reading is a left to right activity), and the strategy (e.g., I know that rereading might help me figure this out).

According to the work of Flavell, 1976; Garner, 1987; Schmitt, 1986; Paris et al., 1983 As cited in: Schmitt (2003) metacognitive knowledge can be declarative (knowing that or what a bout something), procedural (knowing how to proceed), and conditional (knowing when to use a strategy and why it is relevant). Many theorists believe that metacognitive knowledge appears early and continues to develop at least through out adolescence (Schraw& Moshman, 1995).

The regulation of cognition refers to the activities a person can perform

in order to guide the learning and problem solving process.

Regulation

of cognition is often split up in two essential processes: monitoring and control, The monitoring process refers to the ongoing assessment of learning and problem solving behavior, whereas the control process refers to the adaptation and change of cognition or behavior (Christoph, 2006:9), Monitoring refers to one's on-line awareness of task performance. Research indicates that monitoring ability develops slowly and is quite poor in children and even adults. Control activities are: Planning and evaluation, Planning involves the selection of appropriate strategies and the allocation of resources that affect performance. Evaluation refers to appraising the products and regulatory processes of one's learning (Schraw & Moshman, 1995), ,In other words, awareness of self-regulation and competent metacognitive control seems to be the important factor when attempting to improve learning performance.(Son & Schwartz,2004).

In Sternberg (1980, 575:576) model of human intelligence, He identified three information processing components: meta-components, performance components and knowledge acquisition components. The meta-components are higher-order control processes used for executive planning and decision making in problem solving. Meta-components include: Deciding what is the problem which needs to be solved, selecting a set of lower- order components (performance, acquisition, retention, or transfer) to use in the solution of the problem, selecting a mental representation of information, selecting a strategy for combining lower- order components, decision regarding speed- accuracy trade off, and solution monitoring. As Christoph (2006) indicated these can all be seen as metacognitive skills.

The Metacognitive model of delinquent behavior

The metacognitive model of delinquent behavior holds that:

1- Delinquents differ from non delinquents in:

- a) Defining the nature of the problem, delinquents can not figure out the nature of the problem and misinterpret it.
- b) Selection of lower- order components, an individual must select a set of lower- order components in order to use it in solution of the problem (Sternberg, 1980: 575).delinquents

select a non optimal components which result in incorrect or inefficient solution.

c) Regulation of cognition or metacognitive skills that help control one's thinking, three essential skills are included:

i.Planning: involves the selection of appropriate strategies and the allocation of resources that affect performance. The ability to plan, and knowledge about this process develops through out childhood and adolescence, improving between the ages of 10 and 14. older, more experienced persons or learners possess more knowledge about cognition and use that knowledge to regulate their thinking before they undertake a task or solve the problem (Schraw& Moshman, 1995: 354). so, it could be concluded that between the ages of 10 and 14 delinquents are as the same as the nondelinquents at the ability to plan, on the other hand, as delinquency progresses, delinquents possess more knowledge about cognition and use and use it to regulate their steps before they committe their crimes.

ii.Monitoring: as individuals proceed through a problem, they must keep track of what they have already done, what they are currently doing, and what they still need to do. The relative importance of these three items of information differs across problems. If things are not progressing as expected, an accountings of one's maybe needed, and one may even have to consider the possibility of changing goals, and new, more realistic goals need to be formulated as a person relizes that the old goals can't be reached (Sternberg, 1980: 576). Delinquents set more egocentric goals for actions (Losel, 2003). They can't easily change their goals to more realistic one.

iii.Evaluation: refers to ones goals and conclusions (Schraw& Moshman, 1995: 354). Delinquents evaluate their goals, consequences of their actions more positively.

2- Meta-cognitive skills differences within offender populations.

Method

Participants:

The sample consisted of 119 male and female offenders who were residing in the Kewsna Juvenile Welfare (Menoufia), and Ain Shams Juvenile Welfare (Cairo), Egypt. The most frequently committed crimes were theft crimes (36,9%), violence crimes (21,4%), and drugs and sexual crimes (12,5%). In addition to 49 participants used as control groups (control group 1 consists of 27 participants who were residing in Ain Shams Juvenile Welfare because they have no family (homeless) and control group 2 consisted of 22 participants who were enrolled in vocational training in Shebeen El-Koom)..The whole sample aged between 11 – 22 years, with mean =16,69 and SD = 2,05 .

Measures:

Meta-Cognitive Skills: Meta-cognitive skills were assessed by State Meta-cognitive Inventory (S.M.I.) (O'Neil & Abedi, 1996), the Arabic version which was translated by the present authors. S. M. I. consists of 20 items, two items (3;16) have been deleted because of its repetition . The remaining items were formulated with Egyptian colloquial to be comprehensible to the subjects, and also to help collecting data situation to be neutral according to Dexter, one of the means to achieve neutrality as perceived by the subjects is to talk as they do (Soueif et al., 1980:12). The S. M. I. then, was administered in 10 offenders to ensure the subjects understanding of the items, and the items which were not understood by the subjects, were reworded. Except for this, the

meaning of the translated items was generally very close to that of the original items..

O'Neil & Abedi (1996) define state meta-cognition as a transitory state of people in intellectual situations which varies in intensity, changes over time, and is characterized by planning, monitoring or self-checking, cognitive/affective strategies, and self-awareness. The following items are examples of state meta-cognitive items. Planning: "I tried to understand the task before I attempted to solve it"; Self-checking: "I checked my work while I was doing it"; Cognitive strategy: "I used multiple thinking techniques or strategies to solve the task"; Awareness: "I was aware of my ongoing thinking processes".

The Arabic version of S.M.I. has satisfactory psychometric properties: the internal consistency of S. M. I. came from Cronbach's alpha reliability coefficients, which were conducted for each subscale in the present study , see table (1)

Table (1)
Cronbach's Alpha Reliability for S. M. I. Subscales

Scales	Cronbach's Alpha
Awareness	0.55
Cognitive Strategy	0.35
Planning	0.56
Self-Checking	0.73

The reliability levels were acceptable specially for self checking subscale, but it is very low for cognitive strategy. Another indicator for scale's reliability is the communalities which range between 0.379 (for item 8) and 0.820 (for item 14)(see table 2).

S. M. I. s Validity had been estimated by principal component analysis with varimax rotation (the acceptable loading is 0.4 at least, and the highest if an item has more than one loading), table (2) shows that the factor structure of the original S. M. I. (O'Neil & Abedi ,1996) four components has partly replicated, and this is validity indicator.

Table (2)
Component Matrix for S.M.I

	Components			
	1	2	3	4
3	0.79			
17	0.61			
12	0.60			
15	0.58			
16	0.58			
7	0.46			
2	0.43			
10	0.43			
5		0.80		
11		0.58		
8		0.50		
1		0.48		
4		0.46		
13			0.73	
6			0.66	
18			0.56	
9				0.44
14				0.89

Results:

Correlational Data:

Table (4) shows the Pearson correlation among meta-cognitive skills, and frequent of arrest. Frequency of arrest was positively related to meta-cognitive skills : cognitive strategy ($r = 0.30$, $P < 0.01$), and planning ($r = 0.19$, $P < 0.05$).

Table (4)
Pearson correlation among meta-cognitive skills, and frequency of arrest

	Frequency of arrest
<u>Meta-cognitive skills</u>	
Awareness	--0.05
Cognitive strategy	0.30 **
Planning	0.192 *
Self checking	0.02

Note: * $P < ,05$. ** $P < ,01$.

Differences Data :

Table (5) shows the results of t- test which used to assess gender differences in meta-cognitive skills. The results shows that there is no gender difference in meta-cognitive skills.

Table (5)
Gender differences in Meta-cognitive skills

Meta-cognitive skills	Male (n= 111)		Female (n=57)		t	Sig.
	M	SD	M	SD		
Awareness	9,19	4,96	8,40	3,66	1,06	-
Cognitive Strategy	6,22	3,43	5,63	2,85	1,12	-
Planning	8,17	3,68	7,56	3,39	1,04	-
Self-Checking	9,42	3,83	9,42	3,99	0,01	-

Table (6) shows the results of ANOVA comparing the delinquent groups on each of meta-cognitive skills. The results indicated that there were no differences on meta-cognitive skills among delinquent groups.

Table (7) shows the results of ANOVA comparing the control groups and delinquent group on each of meta-cognitive skills.

The results indicated that there were significant differences on meta-cognitive skills (awareness and planning) among the three groups. So post-hoc test was conducted (Scheffe method) on these results(table 8) .

Table (6)**comparing the delinquent groups on meta-cognitive skills**

		Sum of Squares	df	Mean Square	f	sig
Awareness	Between Groups	76.802	3	25.601	1.232	-
	Within Groups	3408.34	164	20.783		
	Total	3485.14	167			
Cognitive strategy	Between Groups	12.86	3	4.28	0.40	-
	Within Groups	1753.04	164	10.68		
	Total	1765.90	167			
Planning	Between Groups	27.41	3	9.13	0.70	-
	Within Groups	2122.36	164	12.94		
	Total	2149.78	167			
Self checking	Between Groups	11.55	3	3.85	0.25	-
	Within Groups	2483.25	164	15.23		
	Total	2494.81	167			

Table (7)

comparing the control groups and delinquent group on meta-cognitive skills

		Sum of Square	df	Mean Square	f	sig
Awareness	Between Groups	187.82	2	93.91	4.96	0.01
	Within Groups	3297.31	165	19.98		
	Total	3485.14	167			
Cognitive strategy	Between Groups	35.05	2	17.52	1.67	-
	Within Groups	1730.85	165	10.49		
	Total	1765.90	167			
Planning	Between Groups	64.01	2	32.008	2.53	0.08
	Within Groups	2083.76	165	12.64		
	Total	2149.78	167			
Self checking	Between Groups	14.77	2	7.38	0.48	-
	Within Groups	2480.03	165	15.12		
	Total	2494.81	167			

Table (8)
Multiple Comparisons by using Scheffe method

Dependent V.	(i) group	(j) group	Mean differences (i-j)	Sig.
Awareness	Control 1	experimental	-1.838	-
		Control 2	-3.934*	0.01
	Experimental	control 1	1.83	-
		Control 2	-2.09	-
	Control 2	control 1	3.93*	0.01
		experimental	2.09	-
planning	Control 1	experimental	-1.49	-
		Control 2	-2.09	-
	Experimental	control 1	1.4	-
		Control 2	-0.60	-
	Control 2	control 1	2.09	-
		experimental	0.60	-

Discussion:

This study tries to investigate :-

1- Testing the psychometric efficiency of the Arabic version of S.M.I., and this is somewhat achieved.

2- Role of meta-cognitive skills in influencing delinquency, and how they differ depending on the gender and the kind of crime:-.

2-1- There is no significant differences between offender female and offender male. This finding was consistent with Giordano; Cemkovich, and Lowery study about the increasing prevalence of severe adolescent female sexual offenders, whereas they note that contributors to delinquency are similar among boys and girls (Lantos, 2006). The finding of our study supports also the

similarities hypothesis which states that the most psychological gender differences (which are found in 30% of gender differences studies) are in the cross-to-zero (effect size less than 0.1) or small (as 48% of studies were found) (effect size range from 0.11 to 0.35), a few (15%) are in the moderate range (from 0.36 to 0.65) and very few are a large or very large (6%, 2% respectively) (Hyde, 2005).

2-2- There is no significant differences among delinquent groups in meta-cognitive skills, maybe because the poor intellectual functioning which determine the absence of significant differences between delinquent and non-delinquent groups.

Supporting this the significant differences between non-delinquent (control group 1 or homeless) and a vocational training (control group 2) in both the planning and cognitive strategy, where the homeless participants are low significantly in these skills. The finding is consistent with results reported by Ismaeil (2000) using data from a sample of beggars of the same age. We can explain this finding by the maltreatment background for both delinquents and the homeless. Another explanation is the effect of housing context, whereas the control group 1 live with delinquents at the same context, and numerous studies reported negative influence of delinquents friendship (neighborhood) on non-delinquents through deviancy training (Lansford; et al., 2003; Grotevant; et al., 2006).

2-3- Consistent with above, the following finding: there is a significant positive correlation between frequency of arrest and both the planning and cognitive strategy. Supporting a Chauvin; Hermand & Mullet (2007) finding: The conscientiousness factor significantly correlated with sex, deviance, and addictions factor. At the facet level, the highest link was found with the efficiency

and purposefulness facets. This result was consistent with findings of numerous prior studies e.g.: Lemos Giraldez & Fidalgo Aliste ,1997; Vollrath et al. ,1999; Paunonen & Ashton ,2001(op cited: Chauvin; et al. .,2007), put it was inconsistent with results of Lee; et al.(2005) who found that the correlation between conscientiousness and antisocial behavior was not statistically significant.

We conclude that our hypothesis was not supported, because the limiting factors , one of it is the lower reliability of S.M.I. components. Another limitation is the depending on self-report.

Acknowledgment:

The authors thank Samah Arfa (M.A.) for her assistance in data collection.

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