Competency to Stand Trial Adjudication: A Comparison of Female and Male Defendants

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Competency to stand trial adjudication is a decision point in the criminal justice system at which gender bias may result in different outcomes for female defendants as compared with males. However, this is an unexplored research area that lacks well-designed studies. The goals of this investigation, which used the largest known sample of U.S. female competency to stand trial defendants studied thus far, are to further understand this group of offenders and to address the gender bias issue as observed in a major southwestern urban court system. Multivariate logistic regression analyses on selected data for 157 female defendants and 187 of their male counterparts examined (1) variations within gender categories and (2) differences between men and women. The results of the within models showed some similarities, but also clear differences, in the determinants of court dispositions. The analyses failed to show an overall pattern of association between gender and competency adjudication. The influence of gender showed considerable variability across psychotic symptoms involving hallucinations and/or delusions: women with psychotic symptomatology were at high risk of being adjudicated incompetent. This study demonstrates how reliable data on female competency to stand trial defendants can assist the interface of the mental health and criminal justice systems in their adherence to the legal standard of competency. It also highlights the following research needs: (1) increased sample sizes of female evaluees; and (2) richer data sets with more and better information on how gender influences specific psychotic symptomatology, type of crime, and legally functional abilities.

Over the past 20 years, some researchers[1-4] have raised the question of whether the judicial system differentiates between male and female competency to stand trial (CTST) defendants and how such a

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pattern might be explained. While this is a relatively unexplored area, a recent landmark meta-analysis of 30 studies (spanning two decades, 1967 to 1989) that examined 8,170 competency evaluees reported that, compared with their male counterparts, women were significantly more likely to receive clinical recommendations of incompetency.[4] However, it is not known whether gender differences by diagnosis, severe psycho-

pathological symptomatology, or performance on standardized competency tests may account for this relationship.

The competency question, a legal issue that is ultimately decided by a judge, is based on the defendant's knowledge of and general categories of abilities relevant to the pending legal process: his or her understanding of legal proceedings and of consulting with and assisting an attorney in preparing a defense.[5] Rationality is also a key construct underlying most competency applications. Sociodemographic characteristics are irrelevant to the criteria for incompetency adjudications as established by law. Scholars appear to hold conflicting opinions about the relevance of type of offense to CTST rulings.[6, 7]

Addressing the issue of bias in the CTST process is important for two reasons. First, evidence of bias in this process could be considered a violation of human rights.[8, 9] Second, it can help determine whether incompetency adjudications are based on a legal standard.[4, 7] For example, when CTST adjudications adhere to a legal standard, incompetent defendants should receive diagnoses (e.g., psychosis or mental retardation) that justify a basis for incompetency determinations more often than their competent counterparts.[4, 7] On the other hand, if bias enters the referral or decision-making process, then competency outcomes might be correlated with certain sociodemographic characteristics; that is, women, older or minority individuals might be overrepresented among incompetent defendants.[4]

A proposed 1990s' research agenda for the interface of mental health law and the criminal offender addressed the paucity of research on women under evaluation for CTST as well as on those who have been found incompetent to stand trial.[2] Many states are unable to either identify the number of women found incompetent or provide basic descriptive data on this group.[2] The purpose of the current study is twofold: (1) to address the issue of gender bias in court adjudications of competency in a major southwestern urban court system; and (2) to further understand female CTST defendants. This is the first study in approximately 20 years to examine specifically this group of female offenders.[1] It is hoped that this investigation will have implications beyond the jurisdiction under study by offering baseline data for future research on female CTST defendants.

The near exclusion of female defendants in most CTST multivariate studies (both competency evaluees and incompetent defendants are predominantly male) has afforded little opportunity to remedy the serious lack of rigorous examination of the association between gender and competency outcomes. In the known multivariate studies that differentiated male and female competency defendants, the number of women ranged from 17 to 65. Also, the lack of distinct programs for incompetent female defendants hinders data collection on these women.[2] The only known study to examine both court competency adjudications and to include women in its research design eliminated the gender variable in the multivariate analyses.[10] Two major issues surrounding the gender context of CTST adjudications

were examined in this research: (1) variations in court adjudications within gender categories and (2) differences in court adjudications between men and women. These issues are addressed through a quantitative analysis that focuses on the 1989 to 1992 adjudications of male and female CTST defendants of the Superior Criminal Court of Maricopa County, Arizona.

Methodology

Setting   City and justice courts of the Phoenix metropolitan area refer misdemeanant defendants to the Maricopa County Superior Criminal Court for CTST evaluations. Defendants in custody awaiting either CTST evaluations or hearings are part of the Maricopa County jail system's average daily population of unsentenced detainees. The jail includes a correctional psychiatric unit (accredited by the American Psychiatric Association in 1982), which delivered four distinct components of service to inmates incarcerated in the jail system at the time of this study: (1) a crisis intervention component, (2) an outpatient component, (3) an inpatient component for inmates in maximum security, and (4) an inpatient component for inmates in minimum/medium security.

At the time of this study, most incompetent defendants deemed restorable to competency received treatment while resident on the psychiatric inpatient components of the jail. The issue has been raised whether courts are equally willing to order CTST evaluations for female defendants or to find them incompetent when facilities suitable for their treatment are

unavailable.[2] The fact that the jail in this jurisdiction had a separate psychiatric inpatient component for women controls for this factor.

Study Design and Sample   The need for an adequate female sample size influenced the selection of the time period for this study. The number of female CTST defendants was sufficiently small so that a sample from one year would not provide a large enough population for the proposed analyses of this study. The sampling frame of this study, the clerk of the court's card files for January 1989 to December 1992, indicated that approximately 1,221 felony and misdemeanor defendants had been referred for CTST evaluations. The female participants in this study included all 199 (estimated) consecutive court-ordered appointments (approximately 16.27% of the total number of appointments) during the time frame of this study.

Since their numbers were greater, the male subjects in this study were a random sample ($n = 200$) drawn from all male defendants referred between January 1989 and December 1992. The number of male defendants selected for each year of this study was based on the percentage of the total number of male CTST referrals for a particular year compared with the total number of male competency referrals for the study time period; this percentage was then multiplied by the targeted male sample number ($n = 200$).

As in other studies, a defendant's most recent CTST referral was used in this study.[10] Cases were excluded for other reasons, including the vacating of a CTST motion, dismissal of the CTST hearing,

and missing information on race/ethnicity. The sampling procedure yielded 157 female and 187 male defendants.

Data Collection Procedures To carry out this investigation, it was necessary to examine the Superior Court's public and sealed records. The mental health experts' reports are sealed and become official and confidential court records following the CTST hearing. The review of the sealed records required the permission of the Superior Criminal Court's presiding judge.

Information collected on sociodemographic and criminal characteristics of CTST evaluees was coded manually from official Superior Court case files. The court's directives concerning explicit questions to be addressed by mental health experts guaranteed some standardization of information within their reports. Nevertheless, this information varied greatly. For example, the court required that the mental health expert provide a specific diagnosis only if the evaluator offered a recommendation of incompetency. However, some evaluators provided a diagnosis for a defendant even if their clinical recommendation was competency. On the other hand, some defendants who received a clinical recommendation of competency may have met the DSM-III-R criteria for a major mental disorder, but this may not have been reflected in the evaluator's report.

Measures The dependent variable dichotomizes competency classification and identifies whether a defendant who was referred for a CTST evaluation was initially adjudicated incompetent or competent. The competency classification was obtained from the records of the Maricopa County Superior Court.

Gender and race/ethnicity were treated as dichotomous variables. The latter was coded as follows: 0 = white; 1 = minority (Mexican-American, Black, Native American, or Other). Date of birth was used to calculate the subject's age at the time of the court's appointment of the mental health experts. Age was treated as a continuous variable.

The most serious offense associated with a defendant's competency evaluation was used in this study for classification purposes (as in previous studies on CTST and criminal behavior). These offenses are described according to felony and misdemeanor status and the specific nature of the crime charged to the defendant. While the felony/misdemeanor status was not included in this study's multivariate analyses, its inclusion in the descriptive results was viewed as helpful in contributing both to understanding female CTST evaluees and to constructing baseline data on these women.

The crime category data reduction scheme resulted in four categories and was coded with three indicator variables in the logistic regression analyses: 1 = major violent and potentially violent crimes—murder, manslaughter, attempted murder, aggravated assault, kidnapping, aggravated battery, unlawful restraint, all sex crimes against the person, all child abuse and other violent crimes against children, armed robbery, robbery, attempt to commit robbery (felony 1 through 4 in this jurisdiction), armed burglary, and arson; 2 = lesser violent and potentially violent crimes—aggravated

assault (felony 5 and 6 in this jurisdiction), misdemeanor assault, battery, domestic violence, flight from pursuit of law, resisting arrest, driving while intoxicated cases, hit and run accidents, misdemeanor arson, endangerment, attempt/commit robbery (felony 5 and 6 in this jurisdiction) weapons crimes (e.g., criminal possession of a weapon, carrying a concealed weapon, misconduct involving a weapon); 3 = felonious property and drug crimes (the felony crimes most typically charged to women)—burglary, larceny/theft, fraud, motor vehicle theft, sale, possession, and use of drug paraphernalia; and 4 = public order, justice, moral crimes and other crimes against persons ("trivial crimes")—public intoxication, indecent exposure, prostitution, harassing/threats, menacing, intimidation by word/conduct, misdemeanor drug, trespassing, interfering with justice, and resisting investigation (this is the reference category throughout the analysis).

Two independent variables described a defendant's diagnostic status: (1) a DSM-III-R diagnosis of a major mental disorder and (2) psychotic symptomatology involving delusions and/or hallucinations exhibited by the defendant during the CTST evaluation. These variables were coded manually from the reports of the court-appointed mental health experts. Three situations met the criteria for the presence of a major mental disorder. First, two to three experts must have agreed on the presence of a DSM-III-R diagnosis indicative of a severe mental disorder (e.g., schizophrenia, delusional (paranoid) disorder, brief reactive psychosis, schizophreniform disorder, schizo-

affective disorder, induced psychotic disorder, atypical psychosis or psychotic disorder, bipolar disorder, and major depression). The determining factor was overall agreement on a diagnosis indicative of a severe mental disorder. For example, a case for which two experts agreed on a diagnosis of schizophrenia was coded as presence of a severe mental disorder. However, if one expert diagnosed the defendant with schizophrenia and another diagnosed the same defendant with a schizoaffective disorder or major depression, this also resulted in the coding of a severe mental disorder. Thus, the underlying criterion was agreement on a severe mental disorder diagnosis even though there might be differing clinical opinions regarding the specific diagnosis.

In the second situation, two experts must have agreed on a DSM-III-R diagnosis of an organic mental syndrome or an organic mental syndrome associated with psychoactive substances. Finally, in the third situation, two experts must agree on a general finding of mental retardation (the sample size of the study prevented further exploration of severity of retardation); this category excluded borderline intellectual functioning.

The coding of the absence of a major mental disorder included the following: (1) all the provisional or possible cases of mental disorder, (2) cases in which only one expert diagnosed a severe mental disorder, (3) cases in which there may have been agreement between two experts on other DSM-III-R diagnoses (e.g., personality disorders), and (4) cases in which the experts stated that there was no DSM-

III-R diagnosis or no diagnosis was given. For a defendant to be coded positive for psychotic symptomatology, a minimum of two mental health experts needed to have reported that the defendant exhibited delusions and/or hallucinations during the forensic evaluation.

Information on the number of past competency hearings within the time period of this study was collected because, as of yet, a defendant's repeater status is an unclear influence on competency outcomes.[10, 11] A total of 36 cases met the study definition of "repeater": a history of an earlier referral during the study's time period that may or may not have resulted in a competency hearing (i.e., it may have been dismissed or vacated).The repeater variable reached only a .4542 level of significance in the univariate logistic regression analyses. This finding combined with the small number of cases that met the repeater criteria led to the decision to drop this variable from the multivariate analyses.

Contextual factors of a particular jurisdiction's or state's CTST procedures may influence competency outcomes.[12–14] Thus, in this study, the court's option to order a third competency evaluation was considered to have a potentially important influence on CTST adjudications. In this jurisdiction, a court may order a third evaluation for various reasons, including needed expertise in neuropsychology or working with the hearing impaired. However, the majority of the cases of a third evaluation involved a split decision on the mental health experts' CTST clinical recommendations.

Data Analyses First, frequency distributions on the study variables were presented by gender, to describe the sample of evaluees. Next, logistic regression was used to estimate the relative importance of the study's independent variables in predicting the adjudication of incompetency versus competency. This technique permits the direct assessment of the relative risk associated with each of the predictor variables through the calculation of odds ratios expressed as antilogarithms of the logistic regression coefficients. The maximum likelihood method was used to estimate logistic regression parameters.

Any variable whose univariate test had a p value $< .25$ along with all variables of known importance was considered a candidate for the multivariate model.[15] Since no research has systematically examined gender differences in CTST court adjudications, an exploratory analysis involving several models for the dependent variable was conducted. The associations of the main effects of the independent variables as well as the gender interactions with competency adjudications were tested using the more liberal .10 level of significance in contrast to the more traditional .05 significance level.

A two-stage analysis with a full model and reduced model (variables that exceeded $p > .10$ in the full model were excluded) were fit to assess the influence of the independent variables on incompetency adjudications for males and females separately (within gender categories). This same approach was used to examine differences between males and females. In addition, a model containing all two-way interaction terms between gender and the main effects variables in the re-

duced multivariate model was estimated to provide information on a more precise relationship of gender to CTST adjudications.[16] Gender interactions that did not reach $p < .10$ were excluded. A final model containing both main effect variables and gender interactions that reached $p < .10$ was re-estimated to maximize parsimony and to produce more consistent parameter estimates (main effect variables associated with the $p < .10$ interactions were also retained).

Results

Female Versus Male CTST Defendants: Descriptive Differences   Females constituted 45.6 percent ($n = 157$) of this study's final sample of CTST defendants. Table 1 provides information on the distribution of (1) sociodemographic, clinical, and criminality characteristics; and (2) court proceedings and competency findings on this study's final sample of female and male defendants. Some differences were found in the felony/misdemeanor status between male and female defendants. While the majority of both female and male defendants had a felony status (65% and 75%, respectively), a larger proportion of women than men were misdemeanant defendants. Also, if collapsed, the two categories of violent crime would include a larger proportion of male (54%) than female (44%) defendants. In terms of court outcomes or adjudications, there were few differences between men and women in the court's competency findings—roughly equal proportions of men and women were adjudicated incompetent (37% and 38%, respectively).

Logistic Regression Models   The results of the models for each independent variable for females, males, and between females and males are found in Tables 2a., 3a., and 4a. Diagnostic statistics conducted to discern the presence of collinear data did not detect any problems in the three main effects models: the within-gender categories and between models. Tables 2b and 2c and 3b and 3c present the results of the logistic regression analyses of the full and reduced models for male and female defendants, respectively. Table 2b (the full model for females) shows that after controlling for other variables in the model, race, age, and a court order for a third competency evaluation did not meet the $p < .10$ criterion for inclusion in the reduced model. Table 3b reveals that for the male sample, in addition to the aforementioned variables, the presence of psychotic symptomatology during the competency evaluation failed to meet the $p < .10$ inclusionary criterion. The potential influence of type of crime charged to the defendant on competency outcomes warrants additional study.[6, 7, 13] Therefore, in this study, the type of offense variable was retained when the effect of individual contrasts of type of offense with the reference category exhibited a $p < .10$ influence on court adjudications (even when the value of the overall main effect was $>.10$).

Tables 2c and 3c show the coefficients and associated odds ratios of the variables in the separate equations of the reduced models for females and males, respectively. The results of these models reveal some similarities but also clear differences in the determinants of court dispo-

Table 1
Distribution/Means and Coding for Dependent and Independent Variables by
Gender (*N* = 344)

	Gender			
	Male (*N* = 187)		Female (*N* = 157)	
	Count	Percentage	Count	Percentage
Dependent Variable				
CTST adjudication				
Competent (0)	118	63.1	97	61.8
Incompetent (1)	69	36.9	60	38.2
Independent variables				
Race				
White (0)	108	57.8	90	57.3
Minority (1)	79	42.2	67	42.7
Presence of a major mental disorder				
Failed to meet criteria (0)	89	47.6	69	43.9
Two or three experts agree (1)	98	52.4	88	56.1
Display of psychotic symptomatology				
during CTST evaluation				
No (0)	164	87.7	128	81.5
Yes (1)	23	12.3	29	18.5
Felony/misdemeanor status[a]				
Misdemeanor	46	24.6	55	35.0
Felony	141	75.4	102	65.0
Type of offense charged to defendant				
Major violent crime (1)	60	32.1	42	26.8
Lesser violent crime (1)	41	21.9	27	17.2
Felony drug and property crimes (1)	55	29.4	49	31.2
"Trivial" crimes (0; reference category)	31	16.6	39	24.8
Court ordered third CTST evaluation				
No (0)	143	76.5	114	72.6
Yes (1)	44	23.5	43	27.4
Age				
Mean		35.13		37.92
Standard deviation		12.76		10.84

[a] Not included in the study's multivariate analyses.

sitions within gender categories. First, for both women and men, agreement among two to three mental health experts on a major mental disorder diagnosis (β = 2.11, p < .0000, and β = 2.17, p < .0000, respectively) was a statistically significant predictor of an incompetency adjudication. After controlling for the influence of all other variables, the odds of women and men diagnosed with a major mental disorder by two or three mental health experts being found incompetent are respectively eight and almost nine times greater compared with defendants without this diagnostic agreement.

Second, examination of the association of offense type on court dispositions of competency reveals significant differ-

Table 2
CTST Adjudication Study: Results of Females Within Models ($N = 157$)

Model/Variables	β	Standard Error	Wald χ^2	df	Significance	Odds Ratio
a. Univariate logistic regressions						
Race	0.0435	0.3318	0.0172	1	0.8957	1.0445
Age	0.0298	0.0155	3.7267	1	0.0535	1.0303
Presence of a major mental disorder	2.5962	0.4543	32.6514	1	0.0000	13.4121
Display of psychotic symptomatology during CTST evaluation	3.6598	0.7601	23.1831	1	0.000	38.8555
Court ordered third CTST evaluation	0.6073	0.3634	2.7933	1	0.0947	1.8355
Type of offense charged to defendant			11.8651	3	0.0079	
Major violent crimes toward others	−1.5261	0.4871	9.8169	1	0.0017	0.2174
Less violent crimes toward others	−0.5860	0.5059	1.3417	1	0.2467	0.5565
Felony drug and property crimes	−1.1812	0.4495	6.9053	1	0.0086	0.3069
b. Multivariate full model						
Race	−0.0206	0.5067	0.0017	1	0.9675	0.9796
Age	0.0171	0.0221	0.5980	1	0.4393	1.0172
Presence of a major mental disorder	2.0240	0.4998	16.3991	1	0.0001	7.5688
Display of psychotic symptomatology during CTST evaluation	3.5168	0.9220	14.5483	1	0.0001	33.6752
Court ordered third CTST evaluation	0.7263	0.4917	2.1819	1	0.1396	2.0673
Type of offense charged to defendant			5.5324	3	0.1367	
Major violent crimes toward others	−1.6326	0.6989	5.4566	1	0.0195	0.1954
Less violent crimes toward others	−0.4852	0.6437	0.5681	1	0.4510	0.6156
Felony drug and property crimes	−0.6064	0.6118	0.9827	1	0.3215	0.5453
c. Multivariate reduced model						
Presence of a major mental disorder	2.1127	0.4940	18.2900	1	0.0000	8.2709
Display of psychotic symptomatology during CTST evaluation	3.4414	0.8816	15.2393	1	0.0001	31.2318
Type of offense charged to defendant			6.7304	3	0.0810	
Major violent crimes toward others	−1.6709	0.6576	6.4568	1	0.0111	0.1881
Less violent crimes toward others	−0.4469	0.6400	0.4875	1	0.4850	0.6396
Felony drug and property crimes	−0.7456	0.5872	1.6124	1	0.2042	0.4744

ences within gender categories. The reduced model for men shows that there was a statistically significant difference in the odds of receiving an incompetency adjudication between the reference category (trivial crimes) and those charged with less serious crimes of violence to-ward persons ($\beta = 1.11$, $p = .0450$). Specifically, for a defendant charged with less serious crimes of interpersonal violence, the odds of being found incompetent are three times as great compared with a defendant in the reference group. For male defendants, following the of-

Table 3
CTST Adjudication Study: Results of Males Within Models ($N = 187$)

Model/Variables	β	Standard Error	Wald χ^2	df	Significance	Odds Ratio
a. Univariate logistic regressions						
Race	0.5489	0.3070	3.1972	1	0.0739	1.7313
Age	0.0057	0.0118	0.2305	1	0.6311	1.0057
Presence of a major mental disorder	2.1884	0.3718	34.6390	1	0.0000	8.9027
Display of psychotic symptomatology during CTST evaluation	1.1258	0.4581	6.0389	1	0.0140	3.0828
Court ordered third CTST evaluation	0.4691	0.3503	1.7931	1	0.1806	1.5985
Type of offense charged to defendant			8.0791	3	0.0444	
Major violent crimes toward others	−0.1054	0.4764	0.0489	1	0.8250	0.9000
Less violent crimes toward others	0.9871	0.4966	3.9500	1	0.0469	2.6833
Felony drug and property crimes	0.0214	0.4798	0.0020	1	0.9644	1.0216
b. Multivariate full model						
Race	0.5823	0.3757	2.4029	1	0.1211	1.7902
Age	0.0130	0.0143	0.8250	1	0.3637	1.0131
Presence of a major mental disorder	2.1143	0.3946	28.7068	1	0.0000	8.2839
Display of psychotic symptomatology during CTST evaluation	0.5663	0.5207	1.1830	1	0.2767	1.7618
Court ordered third CTST evaluation	0.2330	0.4098	0.3232	1	0.5697	1.2623
Type of offense charged to defendant			5.0386	3	0.1690	
Major violent crimes toward others	−0.0609	0.5490	0.0123	1	0.9116	0.9409
Less violent crimes toward others	0.9573	0.5782	2.7413	1	0.0978	2.6047
Felony drug and property crimes	0.1406	0.5503	0.0652	1	0.7894	1.1509
c. Multivariate reduced model						
Presence of a major mental disorder	2.1799	0.3795	32.9948	1	0.0000	8.8453
Type of offense charged to defendant			5.7083	3	0.1267	
Major violent crimes toward others	0.1316	0.5276	0.0622	1	0.8031	1.1406
Less violent crimes toward others	1.1166	0.5570	4.0190	1	0.0450	3.0544
Felony drug and property crimes	0.2761	0.5334	0.2679	1	0.6048	1.3180

fense of less serious violent crimes toward persons, the odds of a male defendant being found incompetent were greatest for those charged with felony drug and property crimes (1.31), those charged with crimes of serious violence (1.14), and the reference group (1.0).

Similarly, among women there was a statistically significant difference between the reference category and another offense type. However, in contrast to the male defendants, among women the effect of type of offense was most pronounced for those charged with crimes of major interpersonal violence ($\beta = -1.67$, $p = .0111$). Compared with women charged with trivial crimes, women charged with major interpersonal violent crimes were less than half as likely to receive an adjudication of incompetency, after adjusting for other variables in the model.

Among women, the odds of being found incompetent were greatest for those charged with trivial crimes (the reference category). Ranking the offenses for women, following trivial crimes, the odds of a female defendant being found incompetent were greatest for those charged with less serious crimes of violence toward persons (.63), followed by those charged with felony drug and property crimes (.47) and the most serious interpersonal violent crimes (.18).

Table 2c also shows that for women the presence of severe psychotic symptomatology during the competency evaluation (β = 3.44, p = .0001) was a strong predictor of CTST adjudications. The odds for women who displayed psychotic symptomatology during the competency evaluations being determined incompetent are 31 times as great as for women who did not exhibit this symptomatology. Within gender categories, then, there are striking differences in the factors related to receiving an incompetency adjudication. But it has yet to be determined whether these differences in the male and female models translate into differences between men and women.

In the multivariate full and reduced main effect between male and female models (Table 4, parts a and b, respectively), gender failed to show a significant influence on court adjudications of incompetency, holding all other variables constant. The next step in the data analyses involved a model with all two-way interaction terms between gender and the variables in the reduced multivariate model (these results are not presented, but are available from the author). In this

model, the age variable failed to reach a $p < .10$ level in this model. Also, only two gender interaction terms met the $p < .10$ criterion in this model: gender by presence of psychotic symptomatology during the competency evaluation and gender by type of offense. Hence, at least in a statistical sense, the intensifying effect of receiving a diagnosis of major mental disorder from two to three mental health experts in increasing the likelihood of receiving an incompetency adjudication was the same for men and women.

Table 5 shows the results of the final model with the two-way interaction terms of gender by presence of psychotic symptomatology and gender by type of offense. The interpretation of this model begins with the odds ratios of variables not involving interactions.[15] Race/ethnicity did not show a significant relationship to competency status. In contrast, the variable major mental disorder is significantly associated to incompetency adjudications (β = 2.12, p = .0000), after controlling for other variables in the model. Specifically, in this jurisdiction, defendants diagnosed with a major mental disorder were 8.3 times more likely to be adjudicated incompetent than those who did not meet this study's criteria for a major mental disorder.

Table 5 shows that the main effect of gender is not significant in the final model. However, of specific interest in this study is how the risk of being adjudicated incompetent changed for men versus women with the interaction variables in the final model. Hence, the interpretation of the final model now turns to the variables included in an interaction:

Table 4
CTST Study: Results of Males and Females Between Models ($N = 344$)

Model/Variables	β	Standard Error	Wald χ^2	df	Significance	Odds Ratio
a. Univariate logistic regressions						
Gender	0.0562	0.2235	0.0632	1	0.8014	1.0578
Race	0.3162	0.2248	1.9774	1	0.1597	1.3719
Age	0.0147	0.0092	2.5292	1	0.1118	1.0148
Presence of a major mental disorder	2.3598	0.2865	67.8476	1	0.0000	10.5886
Display of psychotic symptomatology during CTST evaluation	2.1564	0.3627	35.3460	1	0.0000	8.6404
Court ordered third CTST evaluation	0.5374	0.2518	4.5548	1	0.0328	1.7116
Type of offense charged to defendant			14.0117	3	0.0029	
Major violent crimes toward others	−0.8574	0.3264	6.8997	1	0.0086	0.4242
Less violent crimes toward others	0.1733	0.3409	0.2583	1	0.6113	1.1892
Felony drug and property crimes	−0.6518	0.3189	4.1762	1	0.0140	0.5211
b. Multivariate full model						
Gender	−0.1875	0.2765	0.4598	1	0.4977	0.8290
Race	0.5127	0.2868	3.1950	1	0.0739	1.6698
Age	0.0190	0.0116	2.6856	1	0.1013	1.0192
Presence of a major mental disorder	2.0762	0.3048	46.3915	1	0.0000	7.9744
Display of psychotic symptomatology during CTST evaluation	1.6094	0.4130	15.1843	1	0.0001	4.9999
Court ordered third CTST evaluation	0.4036	0.3016	1.7912	1	0.1808	1.4972
Type of offense charged to defendant			7.2125	3	0.0654	
Major violent crimes toward others	−0.6715	0.3963	2.8700	1	0.0902	0.5110
Less violent crimes toward others	0.3262	0.4133	0.6229	1	0.4300	1.3857
Felony drug and property crimes	−0.3034	0.3957	0.5881	1	0.4432	0.7383
c. Multivariate reduced model						
Gender	−0.1635	0.2750	0.3534	1	0.5522	0.8492
Race	0.5325	0.2854	3.4824	1	0.0620	1.7032
Age	0.0189	0.0115	2.6844	1	0.1013	1.0191
Presence of a major mental disorder	2.1138	0.3033	48.5884	1	0.0000	8.2800
Display of psychotic symptomatology during CTST evaluation	1.5817	0.4118	14.7539	1	0.0001	4.8632
Type of offense charged to defendant			7.0072	3	0.0717	
Major violent crimes toward others	−0.6389	0.3942	2.6275	1	0.1050	0.5278
Less violent crimes toward others	0.3410	0.4135	0.6800	1	0.4096	1.4063
Felony drug and property crimes	−0.2987	0.3942	0.5741	1	0.4486	0.7418

gender, psychotic symptomatology, and type of offense. The effect of the gender interaction terms can be analyzed by "recovering" the odds ratios of the possible combinations of the interaction term.[15, 16] Therefore, the odds ratios among men and women who displayed psychotic symptomatology during the experts' eval-

Table 5
CTST Adjudication Study: Results of the Final Model (N = 344)

Model/Variables	β	Standard Error	Wald χ^2	df	Significance	Odds Ratio
Gender	0.6111	0.6146	0.9884	1	0.3201	1.8424
Race	0.3331	0.2925	1.2973	1	0.2547	1.3953
Presence of a major mental disorder	2.1264	0.3068	48.0459	1	0.0000	8.3849
Display of psychotic symptomatology during CTST evaluation	0.5223	0.5102	1.0483	1	0.3059	1.6859
Type of offense charged to defendant			5.1860	3	0.1587	
Major violent crimes toward others	0.0250	0.5400	0.0022	1	0.9630	1.0254
Less violent crimes toward others	1.0185	0.5708	3.1839	1	0.0744	2.7689
Felony drug and property crimes	0.1999	0.5439	0.1351	1	0.7132	1.2213
Gender by display of psychotic symptomatology during CTST evaluation	2.8564	1.0216	7.8171	1	0.0052	17.3986
Gender by type of offense			4.5709	3	0.2060	
Gender by major violent crime	−1.6888	0.8510	3.9384	1	0.0472	0.1847
Gender by less serious violent crime	−1.4638	0.8576	2.9136	1	0.0878	0.2314
Gender by felony drug and property crimes	−1.0275	0.7960	1.6663	1	0.1968	0.3579

uations and the gender by type of offense were estimated and the significance of that comparison determined (these results are not presented, but are available from the author).

Calculations for each cell of the gender by psychotic symptomatology interaction showed that among men the presence of psychotic symptomatology was not significant, with an estimated odds ratio of 1.68. However, being a female defendant with psychotic symptomatology is an important risk factor; in fact, the odds ratio of 54.09 is quite striking. To determine the significance of the differentiation of the courts' competency adjudications for male and female offenders with psychotic symptomatology, an analysis was done that represented the final model with a different set of parameters (i.e., the gender by psychotic symptomatology interaction was replaced with four new vari-

ables). Compared with women who exhibited psychotic symptomatology, men with psychotic symptomatology were substantially less likely to be adjudicated incompetent after controlling for all other variables in the model. While a cautionary note is warranted in using multiple comparison procedures, the results indicated that women who displayed psychotic symptomatology during the forensic evaluations were significantly more likely to be adjudicated incompetent (p = .0020) than were men with psychotic symptomatology.

The results of specifying and comparing the odds ratios of the different cells of the gender by type of offense interaction showed that men were more likely than women to be adjudicated incompetent in three of the four categories: major violent crimes, less serious violent crimes, and felony drug and property crimes, after

controlling for other variables in the model. Specifically, the odds ratios showed that women in the major violent crimes category were less than half as likely (.3489) than men (1.02) to be adjudicated incompetent. Hence, being charged with a major interpersonal violent crime was related more strongly to an incompetency adjudication for men than women ($p = .0769$). Similarly, women were less likely to be adjudicated incompetent compared with men in the category of less serious violent crimes, (2.76 and 1.18, respectively). However, the difference in the odds ratios of this category failed to show even a modest association to incompetency outcomes ($p = .1569$).

Also, being charged with a felony drug or property crime was more related to an incompetency adjudication for men than women. However, compared with crimes involving interpersonal violence, there was a more equal distribution of the odds ratio in incompetency adjudications between men and women in this category (1.22 and .80, respectively, $p = .4237$). Finally, the difference between the odds ratios of men and women charged with trivial crimes (1.0 and 1.84, respectively) in the likelihood of being adjudicated incompetent is insignificant ($p = .3201$).

Discussion

The results of the within and between analyses of this investigation corroborated the discriminatory power of the clinical diagnosis variable in previous CTST studies and is consistent with the legal theory of competency.[4, 7, 10, 12] The findings on the relationship of age and race to CTST adjudications in this study's between male and female analysis are inconsistent with the recent meta-analysis of clinical recommendations of CTST.[4] However, they are consistent with those observed in a recent U.S. multivariate study of CTST recommendations.[7] Similar to Nicholson and Johnson's study,[7] this study's findings would tend to contradict the existence of race and age bias at the competency outcome stage.

Although gender *per se* should be irrelevant to CTST outcomes, a recent meta-analysis reported a small but statistically significant correlation between gender and clinical recommendations of CTST.[4] In contrast, the main effect of gender in this study's final model was not related to CTST adjudications, although the direction was consistent with previous findings of CTST recommendations.[4] While the results of this current investigation must be viewed as tentative, the finding on the clinical interaction term gender by psychotic symptomatology may help to explain the gender relationship/pattern reported in the meta-analysis as well as a national study on mentally disordered offenders.[3, 4] In addition, this interaction term has important judicial implications.

The gender by psychotic symptomatology was the most powerful term involving gender in this study's final model. In fact, this study found that differences between men and women in the factors associated with the incompetency decision are largely accounted for by the fact that women who displayed psychotic symptomatology during CTST evaluations were substantially more likely to receive an adjudication of incompetency com-

pared with men with psychotic symptomatology. Hence, previous reports that female CTST defendants are more likely to be recommended incompetent or to receive mental health services through involuntary criminal commitments may be more related to specific differences in psychotic symptomatology than to being female *per se*.

At the same time, this study's finding on psychotic symptomatology does invite speculation as to whether gender is or is not theoretically justifiable as a predictor of CTST. While the presence of psychotic symptomatology is a legitimate predictor of CTST adjudication, some may wonder why females who displayed this symptomatology were at such a greater risk of being found incompetent compared with males with psychotic symptomatology. One possible explanation for this relationship is the previously observed gender differences in specific psychopathology of schizophrenia. At least three studies have reported that women with schizophrenia were significantly more likely to express persecutory delusions than men.[17–19]

Goldstein and Burd[20] noted that delusions may produce significant distortions in a defendant's reasoning about the trial process. Thus, it seems somewhat reasonable to speculate that impairment in legally relevant functional abilities may be influenced by differences in specific psychotic symptomatology. For example, in this jurisdiction, incompetency adjudications may have been related to the fact that women expressed more persecutory delusions about the trial process rather than to gender *per se*. Hence, one could

argue that the differentiation of the courts' incompetency adjudications toward females with psychotic symptomatology may be theoretically justifiable. This interpretation, however, needs to be borne out by future research. Contextual information about the specific nature of the delusions would have provided more interpretative certainty.

On the other hand, statistical deficiencies, including the low number of cases in the sample that met the criterion for the presence of psychotic symptomatology or the small number of females with psychotic symptomatology who were ruled competent, may have contributed to this finding. In sum, this study cannot conclude that the observed relationship between the gender-psychotic symptomatology interaction and CTST adjudications does not violate legal guidelines.

This study's findings also invite speculation about potential gender bias toward defendants charged with major interpersonal violent crimes. The gender-major violent crime interaction exhibited a modest interaction with incompetency adjudications. While this finding may raise the criticism of apparent gender bias stemming from a legally "irrelevant" variable and violation of legal guidelines, it may be a somewhat premature conclusion. At least two factors could explain this observed relationship.

The first factor is the potential misuse of the CTST referral with female offenders charged with violent crimes. The alleged perpetration of a violent crime by women appears to be an important factor affecting the likelihood of a pretrial psychiatric referral beyond such factors as a

positive psychiatric history, the court's legitimate doubts about a defendant's mental status, and other legal rationales.[21] For example, persons in the criminal justice system may be more likely to consider the possibility of psychiatric illness among women who have engaged in violent behavior against others.[22] While it will be recalled that the category of major violent crime comprised a larger proportion of male than female evaluees in this jurisdiction (32.1% and 26.8%, respectively), male offenders constitute approximately 95 percent of violent felony defendants processed by criminal courts. Hence, this study's findings tend to suggest that in this jurisdiction females charged with the most serious interpersonal violent crimes may be singled out for mental health attention. The interpretation of differences in incompetence rates between persons with violent and nonviolent charges is complex because of the uncertainty that surrounds possible judicial or attorney motivations for requesting evaluations of defendants with violent charges.[13]

Similarly, this observation can be applied in the more specific case of incompetence rates between male and female defendants charged with violent crimes. For example, a less restrictive use of CTST referrals in high stake cases involving violent female offenders may artificially reduce the rate of incompetence findings among this group and intensify the rate difference between male and female defendants with violent charges. Hence, this study cannot conclude that its finding regarding this jurisdiction's increased incompetency adjudications to-

ward males charged with serious interpersonal violent activity is unjustifiable according to the legal theory of competency.

Gender differences in serious antisocial aggressive activity is a second potential explanation for the relationship between the gender-major violent crime interaction and incompetent to stand trial adjudication. For example, studies of gender and the insanity defense have consistently reported differences in violent crimes, including the relationship of the victim to the defendant. Unfortunately, contextual information regarding the defendant's crime was an area this research could not examine. Therefore, this study cannot discriminate between the situation in which the court was more likely to adjudicate males incompetent merely because the defendant was a male and therefore perceived as more dangerous and threatening (and the legal demands of the case were unimportant) and when gender was merely correlated with some other important factor shaping the CTST adjudication. For example, some violent male defendants may lack the psycholegal ability needed to meet the legal demands of the case at hand.

Conclusions

In an effort to provide new information on the relationship between gender and competency status, this study set out to improve on previous empirical efforts through a systematic examination of gender and CTST adjudications. One of the strengths of this study is that it provides baseline data that have not previously been available—a profile of female com-

petent and incompetent defendants and a comparison with their male counterparts, as well as a multivariate model specifically designed to include gender interactions. The results of this study's analyses demonstrate that it would be a serious mistake to assume that findings from CTST research using male populations as a baseline apply equally to female defendants. Also, while the findings must be viewed as tentative, they suggest that male and female CTST defendants may differ on specific psychotic symptomatology. Nevertheless, they tend to support previous researchers' observations that the gender relationship/pattern to competency status could reflect differences in the detection of pathology.[3, 4]

Also, the interaction effects of gender and criminality characteristics is vital to identifying the more precise nature of the influence of gender on competency status. Again, this study's findings hint at the problem of incorrect interpretations or biased findings that might result if gender interactions are disregarded in the CTST research. In sum, these interactions can contribute to a more thorough and objective examination of gender and CTST outcomes.

However, this investigation also presents several limitations, and its findings must be viewed as tentative. The small pool of incompetent defendants available for inclusion in the analysis is a limitation. Also, the small number of evaluees who met this study's criteria for psychotic symptomatology warrant concern in interpreting the significance of the gender by psychotic symptomatology interaction. Future research needs to use a

greater variety of independent variables and more refined measures of psychopathological symptoms. Perhaps the greatest limitation of this study is the lack of standardized information on evaluees' legally relevant functional abilities. Previous research has reported that defendants who performed poorly on instruments designed to assess legally relevant functional abilities were statistically more likely to receive clinical recommendations of incompetency.[4] Although it may be difficult to collect and quantify this information, a firm understanding of how psychopathological symptoms and psycholegal abilities influence CTST outcomes is fundamental for a better understanding of the courts' adherence to the competency construct. Finally, it is important to note that this study's use of a more liberal significance level allowed to some degree for the retention of variables that in future studies with a more rigorous significance level may not yield similar findings.

The need for large scale, quantitative designs with a greater number of females and richer data sets to sort out gender differences in the factors associated with CTST adjudications will continue to pose problems for researchers. However, until these research efforts are implemented, concerns directed toward whether differentiation of CTST outcomes is based on gender, as opposed to other factors, will continue. The question as to whether gender is theoretically relevant and a legally justifiable predictor of incompetency will remain open and the gender relationship to CTST adjudications only vaguely understood.

Acknowledgments

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