

Contextual Risk and Parental Attributions of Children's Behavior as Factors that Influence the Acceptability of Empirically Supported Treatments

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Abstract:

This study examined the acceptability of several empirically supported treatments (child social skills training, parent training and medication) within a sample of low-income African American mothers of a preschooler exhibiting significant disruptive behavior. Contextual risk and causal and responsibility attributions were predicted to be associated with treatment acceptability. Eighty-seven participants completed an attributional-style measure of child misbehavior and considered hypothetically the acceptability of several empirically supported treatments. Social skills and parent training were highly accepted, while medication was not. Greater causal attributions (child's behavior viewed as global, stable and due to something within the child) were associated with higher acceptability of social skills training. The relationship between attributions and medication was moderated by risk. In the context of high risk, lower causal attributions were associated with higher acceptability of medication whereas in the context of low risk, lower causal attributions were associated with lower acceptability of medication. In contrast, in the context of high risk, higher responsibility attributions (child's behavior viewed as purposeful, selfish and deserving of blame) were associated with greater acceptability of medication, while in the context of low risk, higher responsibility attributions were associated with lower acceptability of medication. Implications for future research and the implementation of empirically supported treatments within communities of color and those with economic disadvantage are discussed.

Article:

INTRODUCTION

Preschoolers who display externalizing behaviors (impulsivity, hyperactivity, oppositionality and aggression) are at risk for maladaptive outcomes. The presence of externalizing behaviors is the most frequently identified mental health concern needing intervention, particularly among young children who are of minority status and who are experiencing poverty (Thompson, 2005). Children from minority backgrounds and low-income environments are represented disproportionately among those receiving disruptive behavior disorder diagnoses (Qi & Kaiser, 2003), and have a threefold greater risk of developing any disorder than children in middle and

upper socioeconomic groups (Samaan, 2000). Half of preschoolers continue to display these behaviors over time, and for some their behaviors will escalate, becoming developmentally deviant in terms of seriousness, chronicity and impairment in adaptive functioning, thus warranting a diagnosis of attention deficit hyperactivity disorder (ADHD), oppositional defiant disorder and/or conduct disorder (Campbell, 2002). Once established, disruptive behaviors are resistant to treatment (Hinshaw & Anderson, 1996). Thus, successful prevention and intervention depend upon early treatment (Kazdin & Weisz, 2003). Providing such treatments within at-risk communities during the preschool years could be especially preventative.

Effective treatments for young children who exhibit disruptive behaviors include behaviorally based parent training and social skills training and medication. Parent training is the most common and extensively studied psychosocial intervention for disruptive behavior (e.g. Evans, Schultz, & Sadler, 2008; Schroeder & Gordon, 2002). Programs focus on teaching parents to use behavior management principles while increasing positive parent–child interactions (e.g. Butler & Eyberg, 2006; Webster-Stratton, Reid, & Hammond, 2001a). Additionally, social skills training addresses difficulties with peers, a common problem among children with disruptive behaviors (Sim, Whiteside, Dittner, & Mellon, 2006; Webster-Stratton, Reid, & Hammond, 2001b). Finally, stimulant medication has substantial empirical support for reducing symptoms of ADHD (Barkley, 2007; Evans et al., 2008; Greenhill et al., 2006), with research indicating that the addition of stimulant medication can increase the efficacy of other behaviorally based treatments such as social skills and/or parent training (Brown et al., 2008).

Despite having a strong base of empirically supported treatments for children who evidence disruptive behaviors, any treatment modality is only as good as it is accessible, accepted and used. And, while increasing access to treatment is important, accessibility alone does not equate to participation (Peters, Calam, & Harrington, 2005; Williford & Shelton, 2008). Other factors may be important, such as treatment acceptability defined by Kazdin (1980, 2000) as the perceived appropriateness and effectiveness of treatment strategies by potential consumers. He and others have argued for increased attention to this construct in order to enhance treatment participation, adherence and integrity (Kazdin, 1980, 2000; Nock & Kazdin, 2001) and ensure culturally competent treatments (Hepburn et al., 2007). Research examining preferences for child treatments appropriate for disruptive behaviors indicated that parents prefer psychosocial treatments compared to stimulant medication (Krain, Kendall, & Power, 2005). However, the majority of this research has been conducted within samples of European American middle-class families, or have examined differences in treatment acceptability across cultures (Pemberton & Borrego, 2007).

Parent's attributions for their child's behavior have also been studied in relation to treatment acceptability. Parental attributions need to be in synchronicity with the intervention (i.e. if the parent does not believe that parenting practices influence her child's behavior she will be less likely to participate in parent training; Nock & Kazdin, 2001). Investigations examining parental attributions focus upon two types: causal and responsibility. Causal attributions are parental explanations as to why children misbehave (e.g. Geller & Johnston, 1995). Negative, causal parenting attributions (e.g. the child is bad all the time and there is nothing the parent can do about it) have been linked to dysfunctional parent–child interactions (Black, Heyman, & Slep, 2001). Responsibility attributions are parental judgements about their child's accountability for

misbehavior (e.g. the child acted deliberately and deserves blame; Resnick, 1999). Parents of children who display disruptive behaviors report higher causal and responsibility attributions, sometimes referred to together as negative attributions (Johnston, Reynolds, Freeman, & Geller, 1998; Wilson, Gardner, Burton, & Leung, 2006).

The previous research is limited, as it was conducted within mainly European American samples (Johnston, Seipp, Hommersen, Hoza, & Fine, 2005; Peters et al., 2005). Little is known about how attributions relate to treatment acceptability in high-risk or minority populations (Ayalon & Alvidrez, 2007). Similarly, contextual risk factors interfere with a family's ability to access, participate in and benefit from treatments that could address these factors (Brown et al., 2008; Kazdin & Whitley, 2003; Kazdin, Holland, Crowley, & Breton, 1997). There has been little research to date examining the variability of contextual risk (Gutman Sameroff, & Cole, 2003) within low socioeconomic status environments (Bornstein & Bradley, 2003), or how risk influences treatment acceptability. While some research has examined between-group differences in how parental beliefs affect engagement in mental health treatment (Yeh et al., 2005), we found no studies examining within-group differences in factors associated with parent's treatment acceptability of empirically validated child treatments. Furthermore, the family environment plays an important role in the development of children's behavior problems (McLoyd, 1990).

This study addresses a gap in the current literature by examining treatment acceptability of three empirically supported treatments (child social skills, parent training, medication) among African American mothers of children at high risk for a disruptive behavior disorder and who live within very low-income environments. We examined whether differences in the level of contextual risk and negative attributions (causal and responsibility) of child behavior would be associated with differing levels of treatment acceptability, hypothesizing that higher contextual risk and more negative attributions (causal and responsibility) would be associated with lower acceptability across treatments. Additionally, we predicted that the association between causal and responsibility attributions and treatment acceptability would be moderated by levels of contextual risk such that negative attributions would be associated most strongly with less treatment acceptability when contextual risk was high.

METHODS

Participants

Eighty-seven mothers of African American preschool children exhibiting elevated disruptive behavior problems living in a semi-urban, southeastern county participated in this study. Among the mothers, 69% were single and 43% had a high school education and had taken some post-high school courses (25% had less than high school, 28% had a high school education and 3% were college graduates). The median yearly income was \$9000 (range = \$1800–\$4 000), with 76% falling below the poverty threshold. Mother's mean age was 30 years (range = 19–54). These demographics were representative of the county's Head Start population. Children were 66% male; 34% female and ranged in age from 37 to 67 months (mean = 56 months).

Procedures

Participants were identified by screening all children enrolled during the annual registration process in 2002 and 2003, and follow-up screening during the first eight weeks of each academic

year. Mothers completed the Behavior Assessment System for Children (BASC), a well-respected measure with sound psychometric properties (BASC: 2.5–5; Reynolds & Kamphaus, 1992). Preschoolers with a *t*-score of 60 or greater on either the hyperactivity [$n = 75$, mean = 65.32, standard deviation (SD) = 8.92] or aggression ($n = 29$, mean = 54.9, SD = 11.1) subscales of the BASC were eligible. Of 857 children screened, 108 met this criterion. Eighty-seven mothers gave full informed consent and provided complete data. Those who chose to participate did not report significantly different BASC scores than those who did not. Participants completed measures in their homes or at their child's Head Start center, returned them to the investigator, and were compensated \$50.

Measures

Contextual risk. A contextual risk score was calculated using six individual indicators scored as present (1) or absent (0). This method for creating a risk index was based upon Sameroff's multiple risk model, which describes the cumulative impact of individual risk factors (Sameroff, Seifer, Baldwin, & Baldwin, 1993), and his recommendation that this approach to examining risk is useful with smaller sample sizes because it permits examination of multiple risks with adequate power (Gutman et al., 2003). The definition of risk for each indicator was consistent with recent research using this approach (e.g. Calkins, Blandon, Williford, & Keane, 2007; Gutman et al., 2003; Kochanska, Aksan, Penney, & Boldt, 2007). Mothers completed a demographic survey assessing the following indicators (percentages of families identified as being at risk for each indicator are presented in parentheses).

- *Poverty threshold:* mothers living 50% or below the poverty threshold for family size (45%).
- *Marital status:* unmarried (74%).
- *Mother's age:* the identified child was born to a mother less than 19 years of age (16%).
- *Family size:* adult to child ratio was less than 1 (53%).
- *Maternal education:* less than a high school education (25%).

Mothers completed the Symptom Checklist-90-Revised (SCL-90-R; Derogatis, 1986) to assess for maternal depression.

- *Maternal mental health:* *t*-scores of 60 and above on the depression subscale (58%).

Indicators were summed to create a cumulative contextual risk index which had adequate variability – 5% had zero risk factors, 12% had one risk factor, 34% had two risk factors, 21% had three risk factors, 17% had four risk factors, 10% had five risk factors and 1% had six risk factors.

Parenting attributions. The Attributional Style Measure for Parents (O'Brien, 2002) instructs mothers to think about a recent time when their child exhibited each of four different child misbehaviors: non-compliance, interruption, whining/complaining and defiance. A six-point scale was used for statements regarding the dimensions of internal–external locus (6 = something about the child), controllability (6 = completely within the child's control), stability (6 = not likely to change), globality (6 = happens often in my family), purposefulness (6 = definitely intentional, on purpose), motivation (6 = selfish concerns), blame (6 = deserves to be disciplined)

and negative intent (6 = did to annoy me). A principal components analysis conducted with these data confirmed the factor structure found by O'Brien and Peyton (2002); the causal attributions of globality, stability and locus emerged as one factor and responsibility attributions of purposefulness, motivation, blame, negative intent and control loaded onto a separate factor. Accordingly, separate composites of causality ($\alpha = 0.68$) and responsibility ($\alpha = 0.79$) were computed, with higher scores on the causal composite indicating that parent views the child's problem behavior as occurring frequently, not likely to change and due to something within the child, and higher scores on the responsibility composite indicating that the parent views the child's problem behavior as intentional on the part of the child, selfish on the part of the child and justifies disciplining the child.

Treatment acceptability. The Treatment Evaluation Inventory-Short Form (TEI-SF; Kelley, Heffer, Gresham, & Elliott, 1989) asks mothers to read a one-paragraph case description of a disruptive child matched in age and gender to their own and to consider how they would feel being the mother of this child, as well as how they have felt when their child acted similarly. Next, mothers read several vignettes (all similar in wording and length and presented in a counterbalanced order), each describing a therapeutic technique with empirical support: Child social skills, special playtime, limit-setting and medication. Each intervention was rated along nine dimensions of acceptability using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). Sample items on the TEI-SF included asking mothers how acceptable the treatment would be, how willing they would be to carry out the intervention and how likely the treatment would result in improvement. The TEI-SF discriminates among treatments and has adequate discriminative validity and internal consistency (Adams & Kelley, 1992). Treatment acceptability scores for each intervention were computed by summing the responses to the nine acceptability ratings (range = 9–45). Kazdin (1981, 1984) indicated that a midpoint score of 27 represents minimal acceptability of a treatment. For the current study, we created a composite parent training technique by combining the scores from special playtime and limit-setting ($r = 0.36, p < 0.01$), as these techniques represent the two major components of evidence-based parent training programs. Higher scores indicate greater acceptance of child social skills, parent training and medication.

Data analytical plan. Hierarchical regression was used to explore associations among contextual risk, causal and responsibility attributions, and treatment acceptability of social skills training, parent management training and medication – including whether contextual risk moderated the association between mother's attributions and treatment acceptability. Variables were entered into the models as follows: (step 1) contextual risk; (step 2) causal attributions and responsibility attributions; and (step 3) risk \times causal attributions and risk \times responsibility attributions interaction terms.

RESULTS

Demographic and outcome variables were not significantly correlated. Table 1 presents descriptive statistics and correlations for study variables. Table 2 presents the final models.

Treatment preferences

Social skills received the highest acceptability rating, with 92% of mothers in this sample having a score of 27 or greater (mean = 35.49, SD = 6.75); parent training also was highly acceptable

(74% of mothers reported scores ≥ 27 on both components of parent training – special playtime and limit-setting; mean = 66.94, SD = 11.84). The use of medication was the least acceptable intervention, with 45% of mothers indicating that this treatment would be acceptable. Medication was the only intervention whose mean score (mean = 24.59, SD = 10.21) did not meet the minimal threshold of acceptability in this sample (≥ 27).

Table 1: Descriptive statistics and correlations for predictor and outcome measures.

Measures	<i>n</i>	<i>M</i>	<i>SD</i>	<i>Range</i>		
Predictor Measures						
Contextual Risk	87	2.70	1.36	0.00–6.00		
Causal Attributions	87	10.99	2.81	3.75–17.75		
Responsibility Attributions	87	18.45	4.44	7.50–28.50		
Outcome Measures						
Social Skills	87	35.49	6.75	13.00–45.00		
Parent Training	87	66.94	11.84	35.00–87.00		
Medication	87	24.59	10.21	9.00–44.00		
Variables	1	2	3	4	5	6
1. Contextual Risk	–					
2. Causal Attributions	.14	–				
3. Responsibility Attributions	.20†	.59***	–			
4. Social Skills	.11	.27*	.08	–		
5. Parent Training	.10	.16	.17	.29**	–	
6. Medication	.13	.00	.02	.04	.14	–

† $p < .10$; * $p < .05$; ** $p < .01$.

Table 2: Contextual risk and maternal attributional style predicting mothers' acceptability of empirically supported treatments.

Predictors	Social skills training			Parent training			Medication		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Step 1									
Risk	-.82	.55	-.16	.58	1.00	.07	1.07	.83	.14
		$\Delta R^2 = .01$			$\Delta R^2 = .01$			$\Delta R^2 = .02$	
Step 2									
Causal	.79*	.32	.33	.41	.58	.10	-.34	.48	-.09
Responsibility	-.16	.20	-.10	.28	.37	.11	.07	.30	.03
		$\Delta R^2 = .09^*$			$\Delta R^2 = .03$			$\Delta R^2 = .00$	
Step 3									
Risk \times Causal	-.17	.22	-.10	.24	.40	.08	-1.01**	.33	-.42
Risk \times Responsibility	.22	.16	.19	-.12	.29	-.06	.61*	.24	.35
		$\Delta R^2 = .02$			$\Delta R^2 = .004$			$\Delta R^2 = .11^{**}$	
Total R^2	.12			.04			.13		
Model F	2.27+			.742			2.31*		

† $p < .10$; * $p < .05$; ** $p < .01$.

Social skills

Contextual risk was not associated with mother's acceptability of social skills training. There was a significant direct effect of causal attributions, such that higher causal attributions were associated with higher acceptability of social skills training. Thus, parents who viewed the child's problem behavior as being frequently occurring, not likely to change and due to something within the child tended to rate social skills at more acceptable. Responsibility attributions were not associated significantly with acceptability of social skills. The risk \times causal attributions and risk \times responsibility attributions were non-significant.

Parent training

Contextual risk was not associated with mother's acceptability of parent training. Neither mother's causal nor responsibility attributions were associated directly with acceptability of parent training. The interaction terms did not add significantly to the model.

Medication

Contextual risk was not associated with mother's acceptability of medication. Although the direct effects of causal and responsibility attributions were non-significant, a significant risk \times causal attributions interaction indicated that the association between causal attributions and acceptability of medication differed for mothers at high versus low risk (Figure 1a). Simple-slope analyses (Aiken & West, 1991) indicated that in the context of high risk, lower causal attributions were associated with higher acceptability of medication, whereas in the context of low risk, lower causal attributions were associated with lower acceptability of medication. The significant risk \times responsibility attributions interaction revealed the opposite effect (Figure 1b), where higher responsibility attributions (child's behavior viewed as purposeful, selfish and deserving of blame) were associated with greater acceptability of medication in the context of high risk, whereas in the context of low risk, higher responsibility attributions were associated with lower acceptability of medication.

DISCUSSION

This study examined how level of contextual risk and parental causal and responsibility attributions of their child's behavior were associated with treatment acceptability in a sample of low socioeconomic status, African American mothers whose children displayed elevated disruptive behaviors.

First, we found that treatment acceptability varied. Social skills and parent training were found to be acceptable by the majority of mothers, suggesting that these treatments would be accepted widely by parents whose children are in need of such services and that mothers may participate in such treatments if they were readily available. Given their established empirical support, regular inclusion of these treatments within the preschool environment should be considered. In contrast, the acceptability of medication was much lower, consistent with research indicating lower adherence to stimulant medication treatment in both minority and non-minority families (Faraone, Biederman, & Zimmerman, 2007; Krain et al., 2005). The implications for this result are discussed in the context of results indicating that contextual risk moderated the relationship between parent attributions and acceptability of medication.

Our hypothesis, that higher contextual risk and more negative causal and responsibility attributions would be associated with less treatment acceptability, was not supported.

With regard to contextual risk, the lack of findings for social skills and parent training could be due, in part, to the high acceptance of these treatments. Additionally, it is important to consider that treatment acceptability is a necessary but not sufficient condition for treatment engagement. Because this study did not assess treatment participation, it was not possible to examine if high stress may prevent parents from participating in a treatment they found highly acceptable.

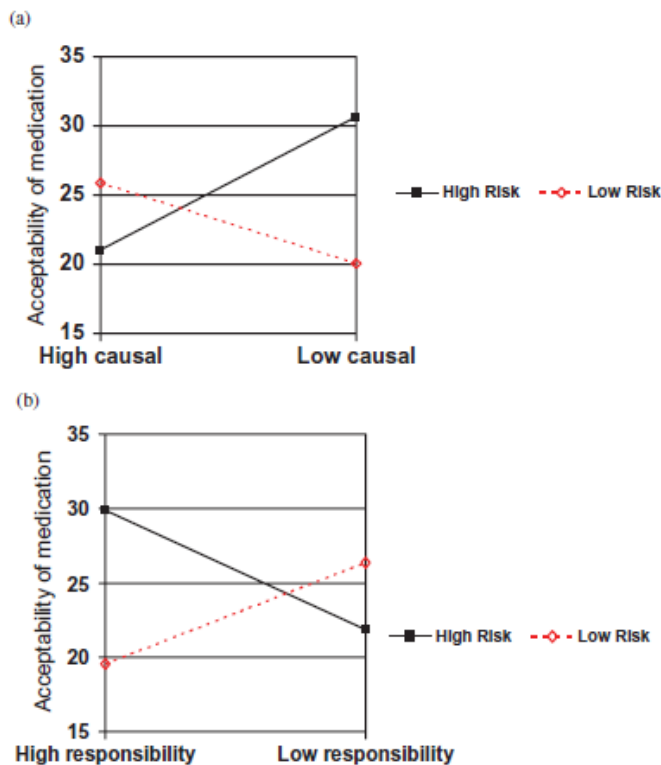


Figure 1: (a) The interaction between risk status and causal attributions predicting mother's acceptability of medication. (b) The interaction between risk status and responsibility attributions predicting mother's acceptability of medication.

Note: Graphs were plotted at high (+1 SD) and low (-1 SD) values of the variables (Aiken & West, 1991).

In contrast to predictions, parents who endorsed greater causal attributions of their child's behavior (the child's disruptive behavior was internal to the child, happened across contexts and was not likely to change) reported greater acceptability of social skills training. It may be that parents who attribute their child's disruptive behavior to be causal within the child may find treatments provided directly to the child (social skills) more acceptable compared to treatments provided to the parent (parent training).

We found mixed support for the hypothesis that negative attributions would be associated most strongly with less treatment acceptability when contextual risk was high. The interactions between attributions and risk level were not related to mothers' acceptability of parent training and social skills. However, the relationship between negative attributions and acceptability of medication was dependent upon level of contextual risk and differed with regard to causal versus responsibility attributions. In the context of high risk, lower causal attributions were associated with higher acceptability of medication, whereas in the context of low risk, lower causal attributions were associated with lower acceptability of medication. It is possible that when a mother views the child's behavior as "different" from how that child typically behaves (i.e. low causal attributions), she may be more likely to use medication because medications may eliminate behaviors that are not representative of the way she views her child. This may be particularly true for parents living in high contextual risk situations because eliminating problematic behaviors may produce an incremental reduction in stress level. We found the

opposite effect for responsibility attributions – in the context of high risk, higher responsibility attributions were associated with greater acceptability of medication, whereas in the context of low risk, higher responsibility attributions were associated with lower acceptability of medication. Perhaps parents who view the child's behavior as selfish, purposeful and deserving of discipline, and who are already stressed in high contextual risk environments, may consider medications as a “quick fix” to the problem. In contrast, even when parents view their child's behavior as purposeful (i.e. high responsibility attributions), when the parent's contextual risk is lower he/she may be able to work towards helping the child to re-establish behavioral control through psychosocial approaches rather than medications.

In sum, medication was the least preferred treatment, and mothers' perceptions of medication varied in complex ways depending upon their experience of environmental stress and how they viewed their child's behavior. Medication may have been the least preferred treatment because mothers were wary of administering medication to such young children (Heriot, Evans, & Foster, 2007). Nevertheless, given that 2–6% of preschoolers meet criteria for an ADHD diagnosis (Lavigne et al., 1996), addressing symptoms of hyperactivity and impulsivity during preschool is critical. Stimulant medication is the first line of treatment for ADHD in school-age children and recent research indicated that careful administration and monitoring of methylphenidate to preschoolers exhibiting significant symptoms of ADHD was safe and effective (Greenhill et al., 2006). Given the increased ADHD research on both identifying and treating young children, stimulant medication for preschoolers who exhibit significant symptoms of ADHD may be prescribed with increasing frequency. Furthermore, medication is often provided in conjunction with behaviorally focused treatments (e.g. social skills, parent training, classroom modification), with the reasoning that stimulant medication will allow the child to benefit maximally from these treatments (Jensen et al., 2007). Some parents may choose not to access or implement any treatment program if medication is an included component (Heriot et al., 2007). Thus, future research should examine not only why parents may or may not accept medication as a treatment option, but also the degree to which recommending medication as part of an overall treatment package may impact engagement negatively in other treatments. These results highlight the need for clinicians to consider carefully how they present treatment options for children exhibiting disruptive behavior problems to parents from underserved communities.

Several limitations of this study deserve attention, including the need for replication to determine whether the results regarding acceptability of medication hold in a sample of similar mothers of children aged 5–8 years: the age at which most children with ADHD are diagnosed and where medication is often the first treatment recommended. Also, the generalizability of these findings may be limited to African American children and their mothers who are economically disadvantaged and living in semi-urban areas. Future studies should make special efforts to gain information from fathers and other caregivers in addition to mothers. Finally, we assessed treatment acceptability and not actual engagement in treatment. More research is needed in identifying factors that relate not only to the intent-to-treat but also to the access and sustained engagement in that treatment.

This study has addressed gaps in the current literature. One is the consideration that even within “high-risk” populations, risk varies and such differences are important. Even within this homogeneous sample in terms of significant economic disadvantage, we found considerable

variation within the level of contextual risk. While not related to treatments that were rated as acceptable, the level of risk was a significant factor related to treatments perceived as unacceptable. The findings from this article reinforce the importance of engaging parents in discussions about their view of their child's difficulties and their interest in particular treatments that are offered. With the increasing emphasis upon making empirically supported treatments more culturally competent, reducing disparities in treatment quality and outcomes, and the findings that authentic partnerships between families and providers lead to better child outcomes, the exploration of parental attributions for their child's behavior as well as their preferences about treatment represent concrete steps that providers can take to operationalize what can be abstract family-centered care practice parameters, increasing the likelihood that the treatment provided is more likely to be effective (Winters & Pumariga, 2007).

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