Assessing the boundaries of character interdependence in affective disposition theory

Dissertation

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Abstract

Enjoyment of narratives is a central element of most narrative processing and narrative persuasion frameworks. Affective disposition theory (ADT; Zillmann, 2000) is one such theory that predicts how audiences experience narrative enjoyment. ADT posits that one of the most central components of narrative enjoyment is character dispositions, or how audiences develop feelings towards narrative characters. Current conceptualizations of ADT suggest that two factors, namely moral approbation and character schema (Zillmann, 2000; Raney, 2004), account for how audiences develop character dispositions. However, recent work has suggested that an additional factor, namely character interdependence, or the types of relationships that characters have within a story, also contributes to the disposition formation process (Grizzard, Francemone et al., 2020). The purpose of the current study is to develop a framework that empirically tests character interdependence and assesses how influential character networks are toward an audience's formed dispositions. In seven studies, I examine how the moral perceptions of a single character spread throughout a character network and influence how audiences perceive additional characters within a story. Results suggest that character interdependence indeed explains substantial variance in the disposition formation process and demonstrates that characters that are relationally at odds are perceptually contrasted with one another, and characters that are relationally aligned are perceptually assimilated

with one another. With these results in mind, I highlight the importance of considering character interdependence as a narrative structural element and suggest that future work integrate additional social network perspectives into this body of research to more fully explicate how character interdependence functions within narrative perception.

Dedication

This dissertation is dedicated to my parents, MaryAnne and Chuck. Thank you for loving and supporting me. I wouldn't be half of who I am today without you two.

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Fields of Study

Major Field: Communication

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Chapter 1. Character Interdependence and Affective Disposition Theory

The central goal of narrative entertainment research is to identify what phenomena make stories and storytelling enjoyable (Vorderer, 2001; Vorderer et al., 2004). Given narrative enjoyment is a vital component of several major narrative theories (Green et al., 2004; Moyer-Gusé, 2008; Tamborini, 2012), specifying the types of story elements that lead to enjoyment is necessary endeavor for narrative entertainment researchers. By more fully understanding how audiences experience enjoyment, entertainment scholars can further explicate the ways in which narratives lead to a variety of mediated processes and effects including engagement (Green & Brock, 2000; Green et al., 2002; Moyer-Gusé & Nabi, 2010; Cohen, 2014), appraisal (Bonus et al., 2020; Grizzard, Fitzgerald, et al., 2021; Lewis et al., 2014; Oliver & Bartsch, 2010, 2011; Tamborini et al., 2011), and persuasion (Appel & Malečkar, 2012; Bilandzic & Busselle, 2011, 2013; Moyer-Gusé, 2008; Slater & Rouner, 2002).

One of the most predominant frameworks used to study narrative enjoyment is affective disposition theory (ADT; Zillmann, 2000; Zillmann & Cantor, 1976). ADT proposes that narrative enjoyment is a function of the affective dispositions audiences form toward narrative characters and the corresponding story outcomes that befall these characters. The overarching enjoyment process posited by ADT is comprised of three distinct subprocesses that occur during narrative consumption–disposition formation,

anticipatory responses, and outcome evaluation. To date, a wide array of work has empirically validated ADT and its constituent subprocesses (see Raney, 2003, 2006; Tamborini et al., 2021, for overviews).

Recently, however, some research has demonstrated that there may be an additional theoretical mechanism that impacts ADT's disposition formation subprocess, namely *character interdependence* (Grizzard, Francemone, et al., 2020; Grizzard, Matthews, et al., 2021). Character interdependence is defined as "mutual covariation between two or more characters wherein the perceived attributes of one character influence and interact with the perceived attributes of (an)other character(s)" (Grizzard, Francemone, et al., 2020, p. 275). Work establishing the character interdependence hypothesis has demonstrated that the affective dispositions audiences form toward characters can be at least partially determined by the mutual covariation occurring between two characters (Grizzard, Francemone, et al., 2020). Viewers seem to use information about one character (e.g., the antagonist) to infer the characteristics or attributes of another character (e.g., the protagonist).

Based on initial findings that were consistent with character interdependence, Grizzard, Francemone, et al. (2020) proposed that the relationships and connections that characters have with each other should help determine how viewers interdependently form their dispositions toward characters. In other words, by understanding a narrative's character network (i.e., the perceived relationships characters have with one another in a story), audiences can develop dispositions towards characters with few other narrative cues or information. More importantly, these dispositions should be formed in a

predictable, systematic manner, such that characters tend to be contrasted when at odds with one another and assimilated when aligned with one another. This notion is inconsistent with ADT's current predictions, which claim some information about a character is needed to form a disposition.

Although Grizzard, Francemone, et al. (2020) derive their predictions from ADT and its integration with other theories (e.g., balance theory; Heider, 1958), little to no research tests these predictions. Thus, character interdependence presents an understudied phenomenon that warrants further scholarly investigation. I propose that character interdependence is not only a valuable extension to ADT's current theoretical framework, but also that character interdependence can be used to formalize theoretical understandings of narratives from critical narrative scholars. In other words, the study of character interdependence and character networks allows researchers to begin operationalizing and quantifying abstract narrative structural elements that conceptualize how audiences derive meaning from the structure of narrative (Bal, 2009; Cobley, 2013; Schmid, 2003), such as the fabula and syuzhet (Propp, 1984), the transposition of semiotics (Greimas, 1993), and narrative arrangement (Genette, 1983).

In this dissertation, I first cover ADT's disposition formation subprocess, review current work investigating character interdependence and disposition formation, and detail the theoretical perspectives that are currently used to understand character interdependence (Chapter 1). Next, I discuss how I have used these theories to experimentally study character interdependence in several preliminary data collections (Chapter 2). I then present the approach I took to develop, test, and validate a

methodology for evaluating character interdependence more thoroughly based on my preliminary work (Chapter 3). Next, I present the results of two studies which employ my proposed methodology (Chapter 4). Following the presentation of my results, I explicate how character interdependence and character networks can be used to test scholarly understandings of narrative and propose new directions for research on character interdependence by integrating perceived social network perspectives (i.e., cognitive social structures) into this work (Chapter 5). In doing so, I discuss the importance of conceptualizing character networks as a narrative structural element and how operationalizing these types of elements can help media entertainment scholars empirically evaluate constituent pieces of narrative structure as they are understood from a narratological perspective. By synthesizing narratological perspectives with ADT and cognitive social structures, I will elucidate how the narrative information implied by a character network (i.e., a narrative structural element) might account for additional variance in both disposition formation and narrative enjoyment. Taking this perspective should not only help researchers understand ADT more thoroughly, but also allow them to identify and empirically test common structural elements discussed by critical narratologists in order to further refine theoretical perspectives at the intersection of media psychology and mass communication.

Affective Disposition Theory

ADT (Zillmann, 2000; see also, Zillmann & Cantor, 1976) is a theory of narrative processing and evaluation that explicates how viewers experience narrative enjoyment. ADT predicts that specific narrative responses are contingent upon audiences' moral

evaluations of narrative characters and the corresponding outcomes that befall these characters. As such, narrative enjoyment is maximized when liked, moral characters experience positive outcomes and disliked, immoral character experience negative outcomes. Conversely, narrative enjoyment is minimized when liked, moral character experience negative outcomes and disliked, immoral characters experience positive outcomes. Thus, by capturing the types of affective perceptions audiences feel towards narrative characters, scholars can predict whether viewers will positively or negatively evaluate narrative content depending on the outcomes that befall the characters.

Importantly, ADT's predictions are comprised of three separate subprocesses which culminate in experienced narrative enjoyment, namely, disposition formation, anticipatory responses, and outcome evaluation. Succinctly, the disposition formation subprocess explicates how audiences perceive and evaluate narrative characters; the anticipatory responses subprocess outlines how formed dispositions cause audience members to develop hopes and fears for the potential outcomes a character might experience; and the outcome evaluation subprocess indicates how narrative responses (e.g., enjoyment) are a result of whether story events support or thwart an audience member's anticipatory responses. Throughout the past 45 years, ADT has garnered a substantial amount of empirical support for both the overarching theory and each constituent subprocess (Frazer et al., 2022; Grizzard, Francemone, et al., 2020; Grizzard, Huang, et al., 2020; Lee & Shaprio, 2014; Matthews, 2019; Matthews & Bonus, 2021; Tamborini et al., 2010; Tamborini et al., 2013; Weber et al., 2008).

Despite the fact that all three subprocesses contribute to narrative enjoyment, my

discussion will focus on the relation between character interdependence and disposition formation specifically. Limiting my discussion to disposition formation is based on the theoretical accounts of ADT (Zillmann, 2000; Tamborini et al., 2021), which position disposition formation as the entry point for the model. All predictions of ADT thus hinge upon disposition formation placing it as the foremost subprocess within ADT. Both the anticipatory responses and outcome evaluation subprocesses cannot result in narrative enjoyment without the presence of a character that audiences connect with. Put simply, hopes and fears are not felt without concern or disdain for a character, and the evaluation of story outcomes cannot lead to enjoyment without a liked or disliked character experiencing them. Thus, it is more theoretically appropriate to establish how character interdependence alters the disposition formation prior to assessing its impact on the other subprocesses. By formalizing the relationship between character interdependence and disposition formation, I will be able to predict the effects of character interdependence on anticipatory responses and outcome evaluation. Put differently, by theoretically linking character interdependence to the former half of ADT's predictions, I can establish how character interdependence should predict various downstream effects with regard to the latter half of the ADT model and subsequently determine its influence on narrative enjoyment (Matthews, 2019).

Disposition Formation

The disposition formation subprocess has accumulated substantial empirical support throughout ADT's existence. Within this work, narrative entertainment scholars have identified and validated two major routes of disposition formation: behavioral

approbation (Eden & Tamborini, 2017; Krakowiak & Oliver, 2012; Krakowiak & Tsay-Vogel, 2013; Tamborini et al., 2012; Zillmann, 2000) and character schema (Eden et al., 2015; Francemone et al., 2022; Grizzard et al., 2018; Raney, 2004; Shafer & Raney, 2012). Both routes identify distinct narrative elements that alter one's perceptions of narrative characters and explicate how these narrative elements impact disposition formation.

Originally posited in his moral sanctions theory of delight and repugnance, Zillmann (2000) claimed that moral approval of a character' behavior was the driving force behind the disposition formation. Zillmann explained that audiences act as "untiring moral monitors" (2000, p. 54) and that they constantly render moral judgments and evaluations about the characters they are observing. If a viewer morally approves of a character's behavior, they will form a positive disposition toward that character, and if a viewer morally condemns of a character's behavior, they will form a negative disposition toward that character. The work examining this route of disposition formation has supported Zillmann's original claim and demonstrate that moral approbation of a character's behavior strongly predicts the disposition audiences form towards a character (Eden & Tamborini, 2017; Krakowiak & Oliver, 2012; Krakowiak & Tsay-Vogel, 2013; Tamborini et al., 2012).

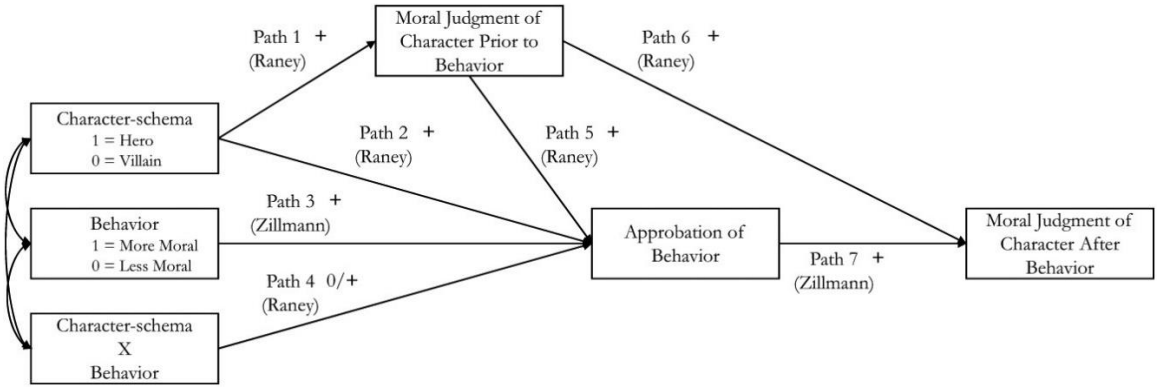
In an extension to ADT, Raney (2004) proposed that character-schema was an additional route of disposition formation. Raney originally defined schema as narrative elements which "help direct our perceptions about and guide our interpretations of a [character]" (Raney, 2004, p. 353). In other words, various narrative features (e.g.,

appearance, dialogue, etc.) cue expectations for a character's role within a story. These expectations are derived from various schemata that audiences develop from repeatedly consuming narrative content. For example, a character who wears darker colors, is less physically attractive, or has sterner facial expressions will likely cue a villainous schema for audiences given these features are common amongst narrative villains. As a result, audiences can form dispositions toward these characters solely based on the expectations conveyed by specific schema. More importantly, character-schema can cause audiences to form dispositions towards a character *without* the need to observe the character engage in any behavior. Thus, Raney (2004) introduced a second route of disposition formation that could be theoretically differentiated from behavioral approbation. Like behavioral approbation, character-schema has also been empirically validated as a strong predictor of the dispositions one forms towards narrative characters (Eden et al., 2015; Francemone et al., 2022; Grizzard et al., 2018; Raney, 2004; Shafer & Raney, 2012).

With these two routes theoretically identified, Grizzard et al. (2018) proposed the disposition formation experimental paradigm (DFEP; see Francemone et al., 2022) to empirically evaluate each disposition formation route separately and in tandem. The DFEP orthogonally manipulates character-schema and character behavior in an experimental study, and, as such, allows one to determine how dispositions are formed as a result of character-schema, character behavior, and their interaction. Succinctly, the DFEP measures participant's formed dispositions at multiple points throughout an experiment (see Grizzard et al., 2018). First, participants are shown an image or some type of information about a character. They are then asked to respond to a series of

measures which capture their perception of the character and the character's perceived morality. Given the information they received about the character until this point in the study is surface level and absent of any behavior (i.e., appearance, background information, etc.), it can be safely assumed that the formed dispositions are a result of cued character schema. Next, participants read a short narrative that places the character into a narrative where they either make a moral or immoral decision (i.e., trolley dilemma). Following the conclusion of the narrative, participants are again asked to respond to a series of measures to gauge their perceptions of the character. At this point in the procedure, the dispositions that are formed towards the character are a function of both schematic cueing and behavioral approbation (i.e., both disposition formation routes). However, by explicating this process through a path model (see Figure 1), one can assess both the isolated and compounded effects of schema-based and behavior-based dispositions.

Figure 1
DFEP Path Model



The strength of the DFEP comes from its versatility. Given the DFEP is a linear experimental procedure, researchers can manipulate certain elements of either the

character or the narrative to establish causality between their manipulations and disposition formation. For example, scholars may choose to manipulate the appearance of a character, the background information of a character, or the type of moral decision the character is faced with to examine how these features impact disposition formation. Recent research has supported this approach by employing the DFEP and identifying how character gender (Francemone et al., 2022) and individuating information (Frazer et al., 2022) alter the disposition formation process.

Notably, recent work utilizing the DFEP has evaluated the impact of adding a second character to the procedure. In doing so, this research has demonstrated that the perceived relationships between characters uniquely influence both schema-based and behavior-based dispositions (Grizzard, Francemone, et al., 2020). Dubbed *character interdependence*, this concept explicates how dispositions are formed as a result of the comparisons made between the characters present within a narrative. Given character interdependence focuses on the influence of multiple characters during the disposition formation process, it is distinct from previous accounts of disposition formation which implicitly assume that dispositions are formed solely based on the information (e.g., behavior, appearance, etc.) that is provided by the character being evaluated. Thus, beyond a narrative feature that simply alters schema-based and behavior-based dispositions, character interdependence may be a potentially new route of disposition formation given its conceptual distinction from both character-schema and behavioral approbation.

Character Interdependence

Initial evidence for character interdependence has been presented through two publications within the communication literature (Grizzard, Francemone, et al., 2020; Grizzard, Matthews, et al., 2021). The first piece, Grizzard, Francemone, et al. (2020) formally introduced the concept of character interdependence and provided empirical support for the idea that dispositions towards one character may depend on dispositions toward another. Showcased across two experiments, the authors were able to demonstrate that both routes of disposition formation were impacted by the presence of multiple characters using the DFEP.

In their first study, Grizzard, Francemone, et al. (2020) demonstrated that accounting for multiple characters in a story explained more variance in behavior-based dispositions. They did so by expanding the DFEP both methodologically and analytically to include a second character and utilized both a heroic-looking character and a villainous-looking character in a modified version of the trolley dilemma (see Figure 2). In the study, Grizzard, Francemone, et al., randomly assigned which character would act as the story's protagonist (i.e., the character that will either pull or not pull the lever) and antagonist (i.e., the character who cut the brakes of the trolley causing it to lose control). By pitting the two characters against each other in the narrative, they were able to evaluate (a) how much of each disposition was explained by the character's *own* features and behaviors and (b) how much of each disposition was explained by the *other* character's features and behaviors.

Figure 2

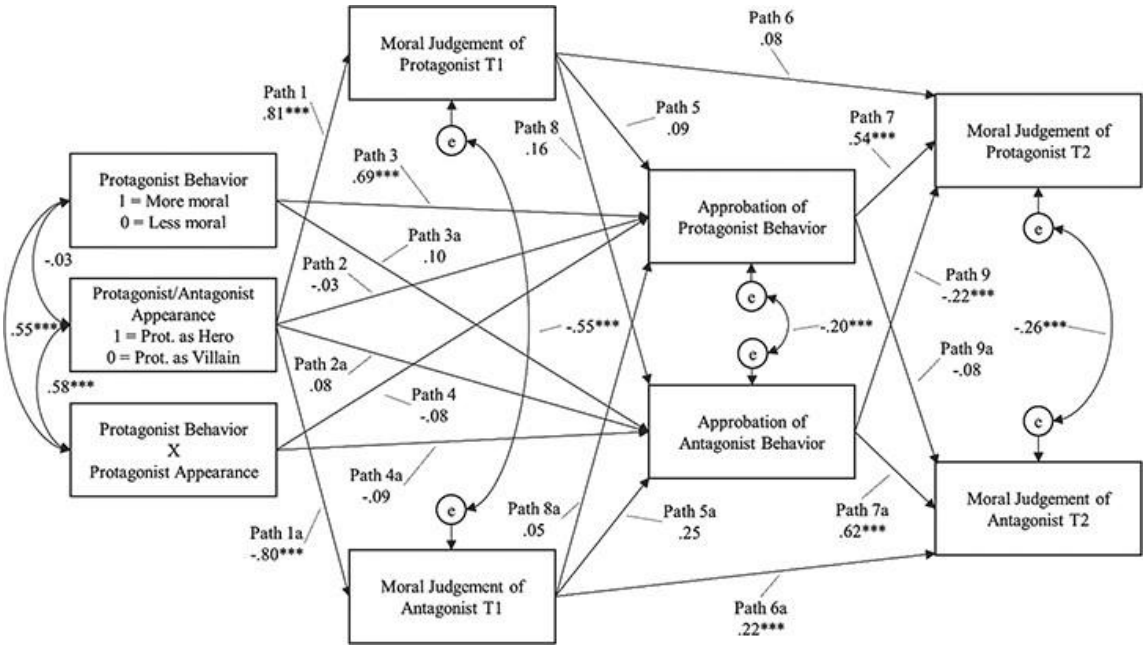
Heroic and Villainous Characters Used in Study 1 of Grizzard, Francemone, et al. (2020)

In order to account for the shared variance that exists from interdependent disposition formation, Grizzard, Francemone, et al. (2020) drew upon the actor partner interdependence model (APIM; Cook & Kenny, 2005) when conducting their causal disposition formation path models. The APIM is a dyadic data analysis approach which accounts for shared variance in a dyad by including actor pathways (i.e., within individual effects), partner pathways (i.e., between individual effects), and covariances between actor-partner residuals (i.e., correlations between actor and partner outcomes). Given their first study utilized two characters to provide proof of concept for character interdependence, they conceptualized the relationship between the protagonist and antagonist as a dyad and evaluated their data using the APIM (see Figure 3). Thus, when looking at the formed dispositions of either character, the authors could analyze the effect of the character's own behavior (i.e., actor pathways), the effect of the alternative character's behavior (i.e., partner pathways), and the correlations between both

characters' dispositions (i.e., covaried actor-partner residuals).

Figure 3

APIM Used to Test Interdependence through the DFEP in Grizzard, Francemone, et al. (2020)



Grizzard, Francemone, et al.'s (2020) results supported the character interdependence hypothesis. They found that behavioral approbation of the protagonist significantly predicted the dispositions formed toward the antagonist, such that participants who had more favorable evaluations of the protagonist's actions had less favorable disposition toward the antagonist. The effect was also mirrored when examining the effect of the antagonist's behavior on protagonist dispositions. Additionally, they found significant negative correlations between the protagonist dispositions and antagonist dispositions indicating that participants who have more favorable dispositions toward the protagonist had less favorable dispositions toward the antagonist. Finally, Grizzard, Francemone, et al. compared the APIM disposition

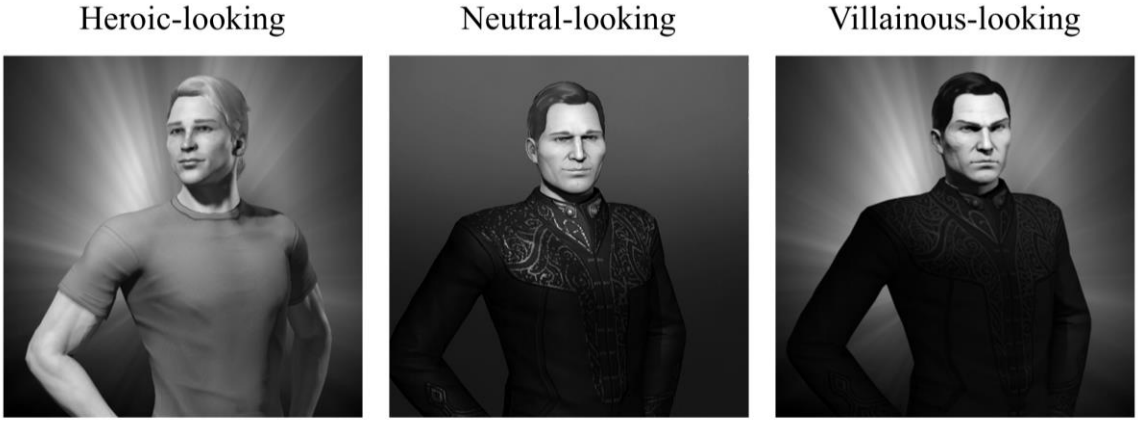
formation path model to a disposition formation path model which assumes no interdependence (i.e., no partner effects or covariances between residuals) in order to determine which model fit the data better. They found that the APIM disposition formation path model not only fit the data better but also explained more variance in both the protagonist and antagonist dispositions. Thus, with this first study, Grizzard, Francemone, et al. were able to provide proof of concept for the character interdependence hypothesis and demonstrate that character interdependence explains significantly more variance in the disposition formation process.

With initial evidence for interdependent behavior-based dispositions, Grizzard, Francemone, et al. (2020) sought to demonstrate the impact of character interdependence on schema-based dispositions. In their second study, they analyzed how different ordered pairings of character schema (i.e., heroic, villainous, and neutral; see Figure 4) influenced schematic-based dispositions using the first half of the DFEP. Grizzard, Francemone, et al. created 6 unique binary pairings of their character schema to examine how schema-based dispositions formed toward the first character in each pairing altered schema-based dispositions toward the second character. They were particularly interested in how perceptions of the neutral character would change based on which character was first in the pairing (e.g., heroic or villainous). Given the neutral character did not cue either a heroic or villainous schema, the neutral character was the ideal candidate for assessing whether character interdependence impacted schema-based dispositions. In other words, any differences found in the dispositions formed toward the neutral character (whose appearance was constant regardless of which character came first) would be attributable

to characteristics of the preceding character, and thus this result could be causally linked to character interdependence.

Figure 4

Character Stimuli Used in Study 2 of Grizzard, Francemone, et al. (2020)



Their results supported the notion of character interdependence for schema-based dispositions. Grizzard, Francemone, et al., (2020) found that dispositions toward the neutral character were dependent upon which character was first in the paring. When the heroic character was first, participants rated the neutral character as villainous (i.e., low morality ratings, low perceived heroicness, and high perceived villainy), and when the villainous character was first, participants rated the neutral character as heroic (i.e., high morality ratings, high perceived heroicness, and low perceived villainy). Put differently, schematic perceptions of the neutral character were completely contingent upon the preceding character, such that the neutral character was perceived to be in opposition to that of the paired character. Taken together, the findings from both of the studies in Grizzard, Francemone et al. demonstrate that both routes of disposition formation are substantially impacted by character interdependence.

Following the introduction of the character interdependence hypothesis, Grizzard,

Matthews, et al. (2021) sought to assess how character interdependence functions in a longitudinal format. Given a large portion of entertainment media is consumed temporally (e.g., episode to episode in a television series), the authors posited that comparisons made between characters as a result of interdependence can lead to an additive effect that becomes more pronounced over the course of a narrative. Moreover, they claimed that this effect not only impacts moral evaluations of character behavior but also how audiences categorize characters into narrative roles. To test these propositions, Grizzard, Matthews, et al. (2021) specifically focused on the longitudinal effects of character interdependence with regard to a character's moral descent (i.e., a character becoming more immoral over time). The authors zeroed in on this type of character trope as it tends to be a common occurrence in popular entertainment media (e.g., Walter White from *Breaking Bad*, Tony Soprano from *The Sopranos*, etc.). Additionally, moral descent provides a baseline to assess differences in moral evaluation as a result of character interdependence. In other words, by developing an anticipated, isolated trajectory of moral evaluations for a character, Grizzard, Matthews, et al. could assess whether the presence of multiple characters significantly shifts the trajectory over time, which would be consistent with the conceptual definitions of character interdependence. Thus, the authors designed a pilot study and a main study focused on examining how the isolated moral perceptions of a more moral and less moral character change when they were presented together in a fictional series.

In their pilot study, Grizzard, Matthews, et al. (2021) aimed to develop a continuum of moral behaviors that could be used to create immoral trajectories for both

the more moral and less moral characters. To accomplish this, they drew upon the moral continuum procedure (MCP; Matthews, 2019). Grounded in the order alternatives procedure (OAP; Sherif, 1979), the MCP has participants observe and judge a series of moral alternatives (i.e., behaviors). Following the presentation of each alternative, participants then rank-order each alternative in the list. Two alternatives represent the polar extremes (i.e., the most moral behavior and the most immoral behavior), with the rest of the alternatives falling between the two poles, creating an ordinally ranked moral continuum. By framing their list of alternatives as behaviors from a fictional war narrative, Grizzard, Matthews, et al. established a moral continuum of 18 behaviors (see Table 1) and used 8 behaviors from this list to create moral trajectories for both the more moral (i.e., Character A) and less moral character (i.e., Character B).

Table 1

Moral Continuum of Behaviors from Grizzard, Matthews, et al. (2021)

Set		Behavior	*M*	*SD*
A1	**1**	**Rescues a local child in danger instead of firing on an enemy brigade.**	6.17	1.18
	2	Calls off an airstrike because he sees civilians present.	6.14	1.24
	3	Offers food and water to a wounded enemy combatant.	6.12	1.03
	4	Disarms an enemy combatant without killing him.	5.63	1.28
	5	Refuses to fire into a crowd to stop an enemy combatant.	5.60	1.51
	6	Captures instead of kills a child soldier.	5.53	1.36
A2	**7**	**Intentionally wounds rather than kills a fleeing enemy combatant.**	4.77	1.44
B1	**8**	**Throws a grenade into a bunker to flush out enemies.**	3.84	1.32
	9	Accidentally wounds a young soldier when firing a warning shot.	3.63	1.06
B2	**10**	**Pushes an enemy combatant off a one-story balcony.**	3.24	1.46
A3	**11**	**Threatens to withhold aid from a local village to gain intelligence.**	3.13	1.36
	12	Cuts the beard off of a local elder to shame him.	2.89	1.15
	13	Breaks the hand of a wounded combatant to gain information.	2.84	1.25
	14	Fires teargas into a crowd of civilians.	2.78	1.41
B3	**15**	**Threatens to kill a farmer to gain information.**	2.75	1.33
	16	Makes a group of POWs strip naked and lay on top of each other.	2.44	1.25
A4	**17**	**Burns a local village's crops after they don't cooperate.**	2.39	1.26
B4	**18**	**Executes a squad of surrendering enemy troops.**	2.08	1.37

Note. A or B indicates which behavior was used for either Character A or Character B. The number indicates which episode the behavior was featured in (e.g., A1 is Character A's first behavior). Means and standard deviations are based on the moral judgment of each behavior using a 7-point Likert-type scale from 1 *Very Evil* to 4 *Neutral* to 7 *Very Good*.

In their main study, Grizzard, Matthews, et al. (2021) created a 4 (*Episodes 1-4*; within-subjects) X 3 (Character Inclusion: *Character A Alone* versus *Character B Alone* versus *Both Characters Together*; between-subjects) mixed design. First, participants were randomly assigned to a condition where they would be rating either the more moral, less moral, or both characters. Then, participants were asked to morally evaluate each of the presented behaviors (framed as individual episodes from a fictional war narrative) and indicate whether they believed the character(s) in their condition was the hero or villain

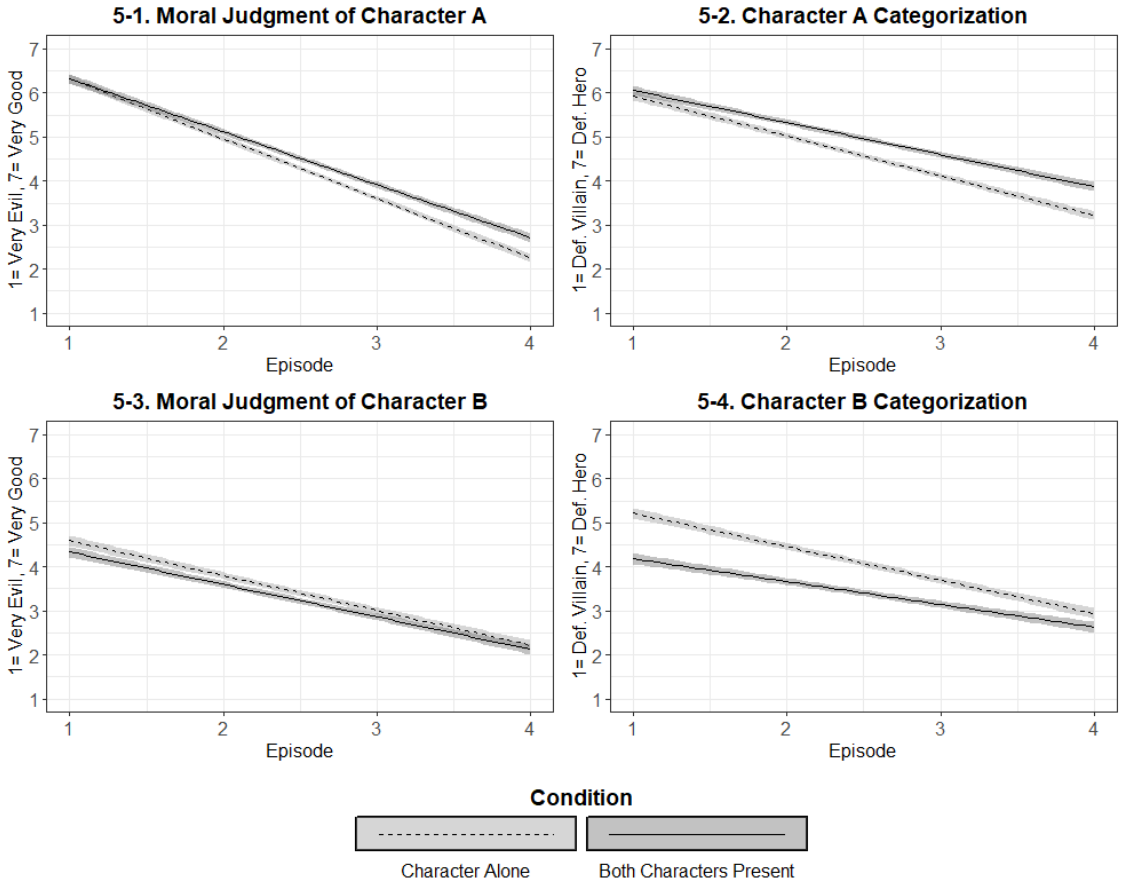
of the story. The behaviors were rated along the same scale used in the pilot study (i.e., 1 *Very Evil* to 4 *Neutral* to 7 *Very Good*) and the categorization measure was a 7-point Likert-type response (i.e., 1 *Definitely the Villain* to 4 *I'm not sure* to 7 *Definitely the Hero*). By utilizing a mixed design, Grizzard, Matthews, et al. could establish the moral and categorical trajectory for both characters using the repeated observations from each participant (i.e., within-subjects manipulation) and assess whether these trajectories differed based on the number of characters presented in the story (i.e., between-subjects manipulation).

To analyze their data, Grizzard, Matthews, et al. (2021) had the third author, Francemone, use multilevel models to evaluate the moral and categorical trajectories, while appropriately accounting for shared variance of the repeated observations from each participant. The results of their models are presented in Figure 5. Grizzard, Matthews, et al. found support for their proposition that the longitudinal effect of character interdependence seems to be additive. However, this additive effect is much more pronounced for characters that are comparatively more moral than their narrative counterpart (i.e., Character A). Panels 5-1 and 5-2 demonstrate this result. Note that the separation between the Character A alone and Both Characters conditions is most pronounced at Episode 4 for both moral evaluations and character categorization. Conversely, while character interdependence does impact the less moral character in the binary, (i.e., Character B) this effect seems to be driven by a contrast effect at the beginning (see panel 5-4) and relatively constant over time. The strongest effect of character interdependence on the less moral character seems to be during the initial

character categorization period (see panel 5-4), where the presentation of a more moral narrative counterpart makes it easier for participants to categorize the less moral character as a villain when compared to the less moral character being presented alone.

Figure 5

Shifts in Moral and Categorical Trajectories Based on the Presence of Multiple Characters from Grizzard, Matthews, et al. (2021)



Despite the strong initial evidence provided by Grizzard, Francemone et al. (2020) and Grizzard, Matthews, et al. (2021), scholars have yet to theoretically integrate character interdependence into ADT. A formal integration into ADT would require a conceptualization of the relationships between characters in a narrative (i.e., the character network). Grizzard, Francemone et al. (2020) began to hint at this possibility by

suggesting balance theory (Heider, 1958) could serve as a theoretical starting point. Integrating balance theory with ADT provides a theoretical accounting of how perceptions of a character network might serve as a mechanism for interdependent disposition formation. By building on their suggestion, I propose that character interdependence can be more formally tested by using balance theory's framework, specifically through the application of contrast and assimilation effects. In addition, my proposal extends empirical testing of character interdependence by including more than two characters. All current tests of character interdependence rely on binary comparisons, and it is not clear how the presence of additional characters might influence these processes.

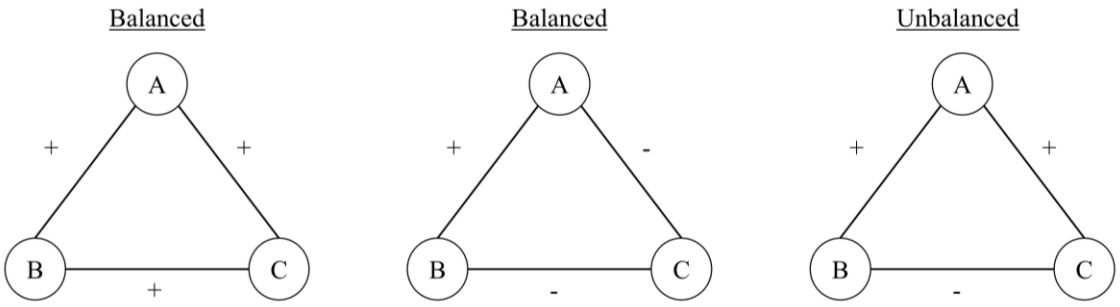
Understanding Character Interdependence through Balance Theory

Balance theory was originally developed by Heider (1958) as a theory of relational development and change. Heider explicates that individuals within a social network balance the types of relationships that they have with other actors in the network to maintain cognitive consonance. If these relationships become unbalanced, the actors encounter a disruption within the network and subsequently experience cognitive dissonance. Thus, Heider proposed that individuals within a social system will maintain and adjust their relationships with the goal of seeking balance. Using a triadic system, Heider demonstrated that social balance is achieved through the product of relational valences between the actors within a social system. When this product is positive (e.g., +++, +--), balance and cognitive consonance are experienced, and when this product is negative (e.g., +--, ---), imbalance and cognitive dissonance are experienced.

To illustrate Heider's original propositions, consider three actors in an interpersonal context (actors A, B, and C; see Figure 6). In the first balanced system, actors A and B have a positive relationship; actors B and C have a positive relationship; and actors A and C have a positive relationship. In this case, balance theory suggests that this system is in balance and that cognitive consonance is achieved. All three actors within the system are positively related to one another, and thus there are no social disruptions. In the second balanced system, actors A and B have a positive relationship; actors B and C have a negative relationship; and actors A and C have a negative relationship. Balance theory again suggests that this system is in balance. Actors A and B have a positive relationship with one another, and both are negatively related to actor C. Thus, the potential social disruption caused by either of the singular negative relationships between actors B and C or actors A and C is negated by the corresponding negative relationships that the positively related actor also has with C.

Figure 6

Balanced and Unbalanced Triadic Systems Based on Balance Theory.



Conversely, in the unbalanced system, actors A and B have a positive relationship, actors B and C have a negative relationship; but actors A and C have a positive relationship. In this scenario, balance theory suggests that this system is

unbalanced and that the actors within this system would experience cognitive dissonance. Given that a social disruption is elicited by the negative relationship between actors B and C, actor A would not be able to maintain positive relationships with both of these actors simultaneously. As a result, balance theory predicts that a change in one of the relational valances must be made for the system to return to balance (i.e., actor A begins to form a negative relationship with actor C).

In sum, the predictions from balance theory demonstrate that the relationships between actors in a social system are formed in a predictable fashion. I propose that the processes involved in balance theory can be utilized to understand character interdependent disposition formation more fully. By reconceptualizing the social system as a relational network between narrative characters (i.e., character network), the viewer as one of the actors within the system, and the relationships between the viewer and the characters as affective dispositions, the predictions from balance theory can be used to predict how audiences form and reappraise their affective dispositions. Given the affective relationships within the character network are conveyed through the story (e.g., a hero despising a villain, a sidekick admiring a hero, etc.), character interdependence suggests that this information should influence the disposition formation process. What remains to be tested, however, is whether this information is used in a manner consistent with balance theory.

To illustrate how balance theory can be applied to character interdependence, I return to Heider's original triadic propositions. In doing so, I demonstrate how all three of the discussed systems depict common occurrences in narrative content, and the

predictions of balance theory can be utilized to predict disposition formation and reappraisal towards characters. Importantly, I conceptualize actor A as the narrative viewer and actors B and C as various types of narrative characters. The first balanced system (see Figure 6) represents a scenario where the viewer experiences a positive relationship between two liked characters, such as a hero and their sidekick (e.g., Batman and Robin). Given these two characters are positively related to one another, it is likely that the viewer will perceptually assimilate these characters and form positive affective dispositions towards both of them to maintain balance. The second balanced system represents a scenario where the viewer experiences a negative relationship between a liked (Character B) and a disliked character (Character C), such as a hero and a villain (e.g., Batman and the Joker). It is likely that the viewer will perceptually contrast these two characters in this situation and subsequently form a positive disposition towards one character (e.g., the hero) and a negative disposition towards the other (e.g., the villain).

Finally, the unbalanced system represents a scenario where the viewer might experience a liked character betraying another liked character (e.g., Superman betraying Batman). In this scenario, the viewer must reappraise their extant dispositions to return the system to balance. Thus, it is likely that the viewer would reappraise their disposition toward the betraying character (i.e., changing from a positive disposition to a negative disposition). Put differently, this scenario can be understood as a narrative conflict that forces a viewer to transition from the first balanced system to the second balanced system in Figure 6. By forcing the viewer to switch from assimilating these two characters (i.e., the first balanced system) to contrasting them (i.e., the second balanced system) based on

the betrayal, it is likely the viewer will form more polarized dispositions towards these characters when compared to either of the balanced systems on their own. This result would be an effect of expectancy violations as the viewer needs to drastically readjust their perceptions of a formerly liked character to return the system to balance.

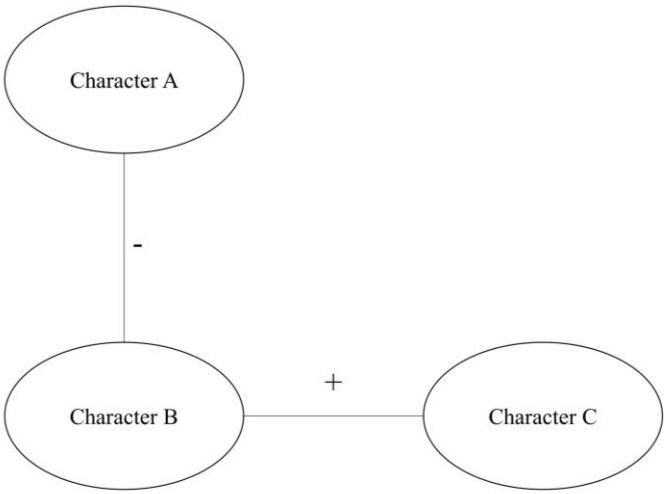
An important implication of the integration of balance theory with ADT relates to the fact that the relationships within a network should bias and constrain the feelings a viewer develops towards other characters. For example, if a viewer learns that a liked character (e.g., Batman) dislikes another, unknown character (e.g., Charles Smith), then the viewer's disposition toward the unknown character should be biased in a manner that maintains consonance within the system. In other words, a viewer would likely form a negative disposition toward Charles Smith simply through transitive properties derived from the viewer's feelings toward Batman. In the next chapter, I present several studies testing this basic hypothesis of character interdependent disposition formation through character networks using the theoretical account of balance theory.

Chapter 2. Evidence for the Application of Balance Theory to Character Interdependence

The logic presented at the end of Chapter 1 suggests that a character network should bias viewer's feelings toward characters in a manner that maintains the balance of a narrative system. To test this logic, I conducted three studies that employed a short, custom-made narrative. Within this story, I established a basic character network between three characters (Characters A, B, and C). Characters A and B were described as rivals, while Character C was described as a sidekick to Character B. Figure 1 depicts the character network as described by the narrative.

Figure 7

Character Network Established by the Narrative Stimuli in All Three Studies

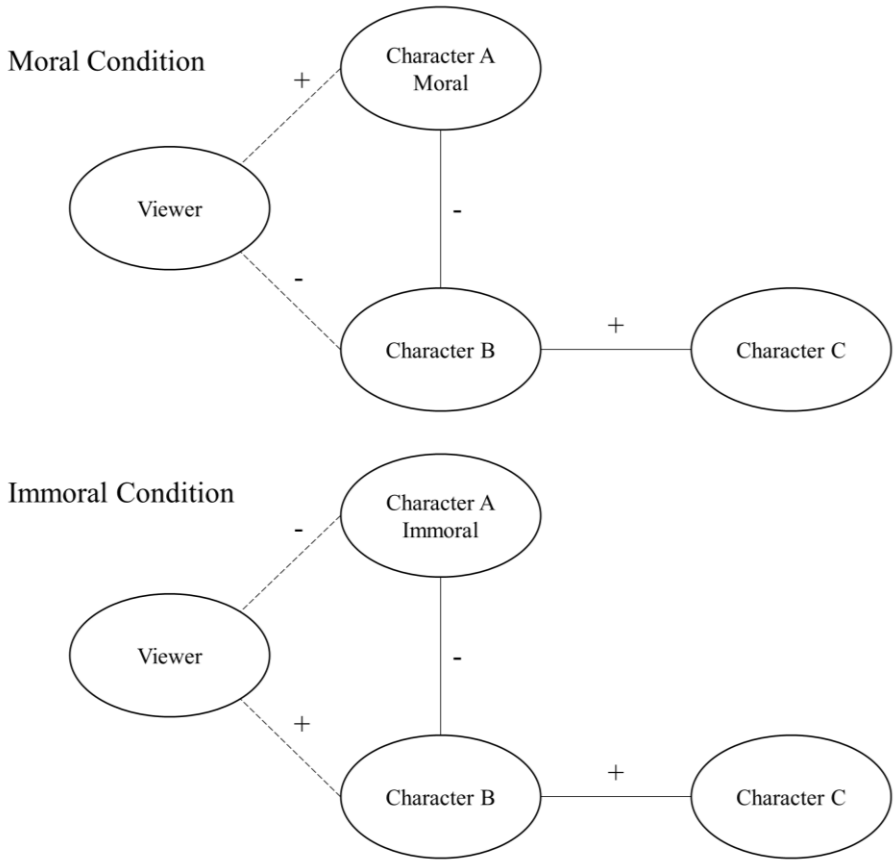


The narrative was constructed in such a way that direct knowledge of Character B's and Character C's morality was absent from the narrative. At the same time, I manipulated the information present within the narrative regarding Character A's

morality. This information painted Character A as either a highly moral or highly immoral character, which past research shows will influence how viewers feel about the character (see Eden & Tamborini, 2017; Grizzard et al., 2018; Zillmann, 2000). The central test of these studies was whether the moral information about Character A will bias the perceptions of Characters B and C based on the relationships presented by the character network. According to the logic laid out in the last chapter, when Character A is described as moral, Characters B and C should be perceived as immoral, and vice versa, when Character A is described as immoral, Characters B and C should be perceived as moral. Figure 2 visualizes these two scenarios with the viewer's affective dispositions included. All studies used the same basic narrative (see Appendix A), with slight variations in its content (see Study 1 and its replication in Study 2) or in its procedure (see Study 3) to address potential threats to validity.

Figure 8

Predicted Relationships Between the Viewer and Narrative Characters Based on Condition.



Note. Solid lines represent relationships between characters described by the narrative. Dashed lines represent dispositions between the viewer and the characters. The disposition between the viewer and Character C is mediated by Character B and thus can be understood as the product of the valence between the viewer's disposition toward Character B and the relationship between Characters B and C.

Study 1

Procedure and Participants

I included two manipulations within Study 1 (see Appendix A for stimuli). First, I manipulated the morality of Character A to analyze whether this information rippled throughout the character network and biased perceptions of Characters B and C. Second,

I manipulated the presence of Character C to assess whether the presence or absence of a secondary character influenced perceptions of the two main characters (e.g., Characters A and B). Thus, Study 1 used a 2 (Character A: moral vs. immoral; between-subjects) X 2 (Character C: present vs. absent; between-subjects) experimental design. Participants were recruited online from a large Midwestern university where they were granted course credit for participating. After indicating their consent, participants were randomly assigned to one of the four conditions (e.g., moral-absent; moral-present; immoral-absent; immoral-present). Participants then read the narrative which corresponded to their condition and filled out a survey measuring the dependent variables.

A total of 262 participants were collected. 100 participants were dropped due to missing data or failed attention checks. Attention checks consisted of two items which asked about the disaster featured in the story ("What kind of disaster were the scientists trying to avoid?") and the cities where events took place ("What two cities were featured in the story?"). Thus, the final sample size was 162 (N = 162; n_{Male} = 82, 50.6%; n_{Female} = 80, 49.4%; M_{Age} = 20.96, SD_{Age} = 2.96). I conducted a layered chi-square test (participant inclusion X Character A Morality Manipulation X Character C Presence manipulation) to assess whether participant drop negatively affected random assignment. Results indicated the initial random assignment remained successful even after participant drop, χ^2 (df = 1) = 0.51, p = .48 (moral-absent = 43, moral-present = 32, immoral-absent = 45, immoral-present, 42).

Character Dispositions

Character dispositions were measured using the extended character moral

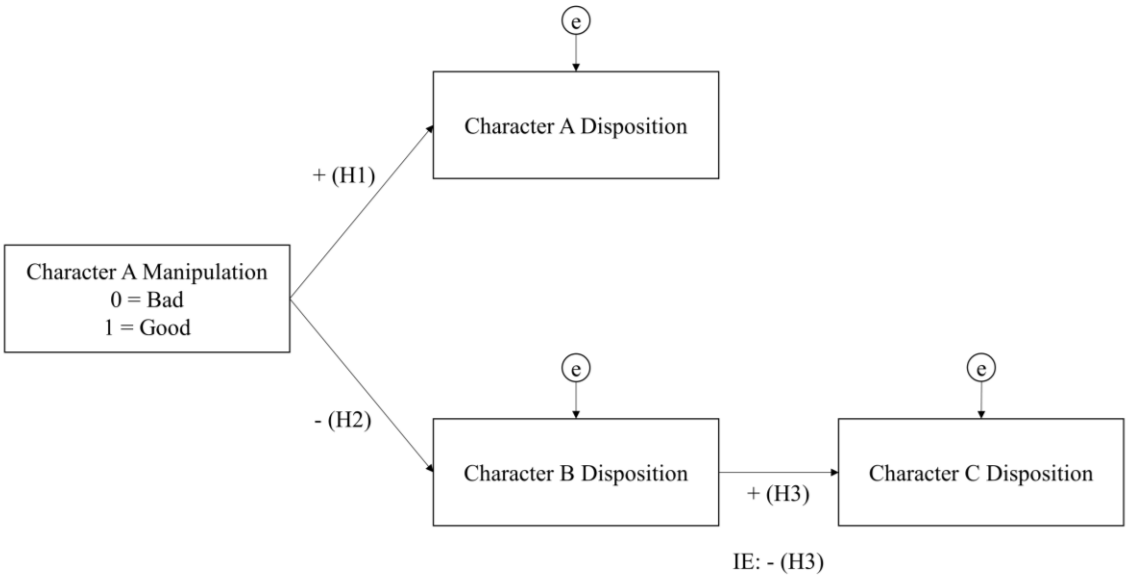
foundations questionnaire (CMFQ-X; Grizzard, Fitzgerald, et al., 2020) and character liking scale (Krakowiak & Tsay-Vogel, 2013). The CMFQ-X is a 20-item measure assessed along a 7-point Likert-type scale from 1 *Strongly disagree* to *7 Strongly agree*. The questionnaire consists of the prompt "[Character] seems like they would…" followed by behaviors that either violate or uphold each of the five moral intuitions from moral foundations theory (Haidt & Joseph, 2007). Examples of these behaviors include "be cruel" (care), "treat people equally" (fairness), "betray their group" (loyalty), "disobey orders from a superior" (authority), and "do something disgusting" (purity). The character liking scale is a 6-item measure assessed along a 7-point Likert-type scale from 1 *Strongly disagree* to 7 *Strongly agree*. Example items include "I like [Character]" and "I would like to be friends with someone who is like the [Character]."

Given research has demonstrated that dispositions are a combination of moral perceptions and liking (Grizzard, Huang, et al., 2020), I combined these two scales to create a disposition composite for each character. I conducted an exploratory factor analysis (EFA) to assess whether these questionnaires could be collapsed into a single disposition variable. I ran Principal Axis Factoring extraction with Promax rotation (Kappa = 4) on the five subscales from the CMFQ-X and items 1 and 2 from the character liking scale (i.e., the two example items in the previous paragraph). Items 3, 4, 5 and 6 from the character liking scale were dropped due to poor factor loadings across the three characters. Results demonstrated that a single factor solution explained a substantial amount of variance for all three characters (Character A = 79.31%; Character B = 63.27%; Character C = 65.80%) with each item loading well onto the factor

(Character A range = .84 to .92; Character B range = .68 to .90; Character C range = .61 to 91). I then ran confirmatory factor analyses (CFA) to assess how well the measurement model from the EFA fit the data. I ran a second-order, unidimensional model where the five CMFQ-X subscales loaded onto a latent morality variable, the two character liking items loaded onto a latent liking variable, and both the latent morality and latent liking variables loaded onto a second-order latent variable of character disposition. Results indicated the proposed factor structure fit well and demonstrated excellent reliability for all three characters (Character A: χ^2 [df = 13] = 28.87, p = .007, RMSEA = .09, CFI = .99, SRMR = .02, α = .96; Character B: χ^2 [df = 13] = 43.17, p < .001, RMSEA = .12, CFI = .97, SRMR = .04, α = .92; Character C: χ^2 [df = 13] = 27.98, p = .009, RMSEA = .13, CFI = .97, SRMR = .03, α = .92). Thus, I collapsed these variables into a single disposition composite for analyses.

Figure 9

Path Model Used to Test Balance Theory's Predictions Through the Character Network



Note. IE: Indirect effect.

Hypothesized Relationships

To test the application of balance theory's predictions to a character network, I created a path model (see Figure 3), which mirrored the character network. In doing so, I can simultaneously test balance theory's predictions through the character network with three separate hypotheses. First, I expect there to be a positive relationship between the Character A manipulation and Character A disposition (H1). Given the main manipulation provides direct information about Character A's morality, I expect the viewer to use this information when forming their disposition. As such, when Character A is described as moral, viewers will perceive Character A to be moral, and when Character A is described as immoral, viewers will perceive Character A to be immoral. Second, I expect a negative relationship between the Character A *manipulation* and

Character B disposition (H2). Although no direct information is provided about Character B's morality, balance theory would suggest that viewers will form a negative disposition toward this character given that the narrative describes this character as a rival of Character A. Thus, when Character A is described as moral, Character B will be perceived as immoral, and when Character A is described as immoral, Character B will be perceived as moral.

Finally, I expect that dispositions toward Character C will be mediated through Character B in the conditions where Character C is present (H3). Since Character C is a secondary character that is always aligned with Character B, I anticipate the direct relationship between Character B and Character C disposition to be positive. Additionally, I anticipate the dispositions formed toward Character C will be contingent upon the dispositions formed toward Character B, such that viewers will indirectly form a positive disposition toward Character C if they have a positive disposition toward Character B and indirectly form a negative disposition toward Character C if they have a negative disposition toward Character B. Finally, I will determine whether the presence or absence of Character C has any meaningful impact on the pattern or strength of dispositions towards Characters A and B (RQ1).

Results

The hypothesized path model fit the data well (χ^2 [df = 3] = 5.99, p = .11, RMSEA = .12, CFI = .97, SRMR = .10) and supported my hypotheses. There was a significant positive relationship between the Character A manipulation and Character A disposition (β = .82, p < .001). This result provides support for H1 and indicates that Character A's

morality strongly predicted viewer's dispositions toward Character A. There was also a significant negative relationship between the Character A manipulation and Character B disposition ($\beta = -.44$, $p < .001$). This result supports H2 and indicates that although there was no direct information regarding Character B's morality and the description of Character B was constant across conditions, viewers formed differential dispositions toward Character B based on the information provided about Character A. When Character A was described as moral, viewers formed negative dispositions toward Character B, and when Character A was described as immoral, viewers formed positive dispositions toward Character B. This result supports my predictions derived from balance theory which suggest that viewers form biased dispositions based on the character network.

Finally, I found support for H3, which predicted that viewers' dispositions toward Character C would be mediated by their dispositions toward Character B (indirect $\beta = -.15$, $p = .008$). Given the positive relationship between Character B and Character C dispositions ($\beta = .33$, $p = .003$), a viewer's indirect dispositions toward Character C coincided with their dispositions towards Character B. Put differently, when a viewer had a positive disposition towards Character B, they had an indirectly positive disposition toward Character C, and when a viewer had a negative disposition towards Character B, they had an indirectly negative disposition toward Character C. This finding also supports the application of balance theory to character networks and indicates that the relationships in the character network bias how viewers perceive characters. Characters that are at odds with one another tend to be contrasted (e.g., Characters A and B), while

characters aligned with one another tend to be assimilated (e.g., Character B and C). Regarding RQ1, I found that the dispositions toward Characters A and B were not substantially altered by the absence of Character C. The path between the manipulation and Character A did not significantly differ when Character C was present ($\beta = .82$, $p < .001$) or absent ($\beta = .81$, $p < .001$), and the path between the manipulation and Character B did not significantly differ ($p = .09$) when Character C was present ($\beta = -.44$, $p < .001$) and when Character C was absent ($\beta = -.31$, $p < .001$).

In sum, the results from Study 1 provide preliminary evidence for the application of balance theory to character interdependence. The findings demonstrate that character networks can be used to predict how viewers form character dispositions in a manner consistent with balance theory. Viewers form character disposition in a manner that seeks to maintain balance between their dispositions and relationships conveyed by the character network. In Study 2, I sought to assess the robustness of these findings by running a replication with a more representative sample (i.e., nonstudent sample) and a simpler design to attain more power for analyses (i.e., removal of the Character C presence manipulation).

Study 2

Procedure and Participants

The procedure of Study 2 was identical to Study 1. The only difference between the two studies was the removal of the Character C presence manipulation. Thus, Study 2 was a single factor manipulation study design (Character A: moral vs. immoral; between-subjects). Again, after indicating their consent, participants were randomly assigned to

one of the two conditions (e.g., moral vs. immoral), read the narrative that corresponded to their condition, and filled out a survey measuring the dependent variables.

Participants were recruited online from Amazon's Mechanical Turk where they were financially compensated for their participation in the study. A total of 432 participants were collected. Based on the same inclusion criteria for Study 1, 80 participants were dropped giving a final sample of 352 (N = 352; n_{Male} = 193, 54.8%; n_{Female} = 158, 44.9%; $n_{Trans\text{-}Male}$ = 1, 0.3% M_{Age} = 35.89, SD_{Age} = 10.40). A chi-square test was run to verify random assignment to condition. Random assignment (moral = 175, immoral = 177) was successful even after the removal of inattentive participants, χ^2 (df = 1) = 0.06, p = .80.

Character Dispositions

I utilized the same dependent variables as Study 1 in Study 2. CFA results indicate that the factor structure used to measure character dispositions in Study 1 fit well and demonstrated excellent reliability (Character A: χ^2 [df = 13] = 58.75, p < .001, RMSEA = .10, CFI = .99, SRMR = .01, α = .97; Character B: χ^2 [df = 13] = 54.47, p < .001, RMSEA = .10, CFI = .98, SRMR = .03, α = .92; Character C: χ^2 [df = 13] = 49.25, p < .001, RMSEA = .09, CFI = .98, SRMR = .03, α = .89).

Results

The same hypothesized model used in Study 1 was tested in Study 2 and fit the data well, χ^2 (df = 3) = 19.28, p < .001, RMSEA = .12, CFI = .98, SRMR = .04. Again, H1-H3 were supported. Results indicated a significant positive effect between the Character A morality manipulation and Character A disposition (β = .82, p < .001), a

significant negative effect between the Character A morality manipulation and Character B disposition ($\beta = -.47$, $p < .001$), a significant positive effect between Character B and Character C dispositions ($\beta = .62$, $p < .001$), and a significant indirect effect between the Character A morality manipulation and Character C disposition ($\beta = -.29$, $p < .001$). Given the results from Study 2 fully replicated those from Study 1, I conducted one final robustness check with a third study to eliminate the possibility that the observed relationships were a result of order effects associated with the timing of measurements.

Study 3

Procedure and Participants

In Study 3, I conducted a direct replication of Study 2 while randomizing the order of the questionnaire. Thus, the order in which participants responded with their disposition toward each character was randomized to eliminate the possibility of order effects. 281 participants were recruited online from Amazon's Mechanical Turk where they were financially compensated for their participation in the study. Based on the same criteria for Study 1 and Study 2, 68 participants were dropped giving a final sample of 213 ($N = 213$; $n_{Male} = 123$, 57.7%; $n_{Female} = 90$, 42.3%; $M_{Age} = 39.08$, $SD_{Age} = 11.43$). A chi-square test was run to verify random assignment to condition. Random assignment (moral = 108, immoral = 105) was successful based on the analysis, χ^2 ($df = 1$) = 0.27, $p = .60$.

Character Dispositions

CFAs indicate that the factor structure used to measure character dispositions fit well for all characters and demonstrated excellent reliability (Character A: χ^2 [$df = 13$] =

41.37, $p < .001$, RMSEA = .10, CFI = .96, SRMR = .02, $\alpha = .96$; Character B: χ^2 [$df = 13$] = 55.24, $p < .001$, RMSEA = .12, CFI = .91, SRMR = .03, $\alpha = .96$; Character C: χ^2 [$df = 13$] = 50.85, $p < .001$, RMSEA = .12, CFI = .90, SRMR = .04, $\alpha = .96$).

Results

The results from Study 3 indicate that the observed relationships were robust to any order effects. The hypothesized model fit the data well (χ^2 [$df = 3$] = 4.34, $p = .23$, RMSEA = .05, CFI = 1.00, SRMR = .03), and H1-H3 were supported. Again, I observed a significant positive effect between the Character A morality manipulation and Character A disposition ($\beta = .71$, $p < .001$), a significant negative effect between the Character A morality manipulation and Character B disposition ($\beta = -.39$, $p < .001$), a significant positive effect between Character B and Character C dispositions ($\beta = .60$, $p < .001$), and a significant indirect effect between the Character A morality manipulation and Character C disposition ($\beta = -.23$, $p < .001$).

Summary of Studies 1 to 3

Studies 1, 2, and 3 provide evidence that balance theory's predictions hold when applied to a character network. I consistently found that character dispositions are formed in a manner which aims to maintain balance between the viewer's affective dispositions and character relationships. Moreover, the moral information provided about a single, main character (e.g., Character A) rippled throughout the character network and caused viewers to form inverse dispositions toward characters that were at odds with the main character.

Because the replication efforts of Study 2 and Study 3 demonstrated that these

effects were robust, I sought to explore how these findings might change when adjusting the relationship between the main characters within the network. Specifically, I wanted to assess how character interdependence influenced character dispositions in a system where all narrative characters were positively related to one another. By manipulating the relationship between Character A and Character B to be either negative (i.e., rivals) or positive (i.e., friends), I sought to examine whether character interdependent disposition formation would work consistently with balance theory when the conflict between characters was removed. Conflict is an essential component of narrative structure, yet balance theory's predictions do not differ depending on whether the network is entirely positive or whether some paths are negative. By describing Character A and B as friends rather than rivals, the network is fully balanced and entirely positive. This type of network should result in the direct path from the Character A manipulation to Character B dispositions and the indirect path from the Character A manipulation to the Character C dispositions to be positive rather than negative as observed in Studies 1-3. Figure 10 depicts this logic visually, and I test these models in Studies 4 and 5.

Study 4

Procedure and Participants

Study 4 employed a 2 (Character A: moral vs. immoral; between-subjects) X 2 (Character AB relationship: rivals vs. friends; between-subjects) experimental design. The Character A morality manipulation was kept the same from Studies 1 to 3. The Character AB relationship manipulation simply described Characters A and B as either close friends or bitter rivals from grad school (see Appendix A for stimuli). The

procedure was identical to that of the previous studies. After providing consent, participants were randomly assigned to one of the four conditions and read the narrative that corresponded with their condition (e.g., moral-rivals, moral-friends, immoral-rivals, immoral-friends). Following the narrative, participants responded to a survey which measured the dependent variables. 390 participants were recruited online from Amazon's Mechanical Turk where they were financially compensated for their participation. Based on the same criteria from the previous studies, 166 participants were dropped giving a final sample of 224 (N = 224; n_{Male} = 133, 59.4%; n_{Female} = 89, 39.7%; $n_{Non\text{-}Binary}$ = 1, 0.4%; $n_{Missing}$ = 1, 0.4% M_{Age} = 36.26, SD_{Age} = 10.62). A layered chi-square test was run to verify random assignment to condition. Random assignment (moral-rivals = 61, moral-friends = 58, immoral-rivals = 50, immoral-friends, 55) was successful based on the analysis, χ^2 (df = 1) = 0.30, p = .59.

Character Dispositions

I employed the same factor structure from Studies 1 to 3 to measure character dispositions. Findings indicate that the factor structure again fit the data well and demonstrated excellent reliability for all three characters (Character A: χ^2 [df = 13] = 58.00, p < .001, RMSEA = .13, CFI = .98, SRMR = .02, α = .97; Character B: χ^2 [df = 13] = 59.92, p < .001, RMSEA = .13, CFI = .97, SRMR = .04, α = .92; Character C: χ^2 [df = 13] = 50.77, p < .001, RMSEA = .11, CFI = .97, SRMR = .04, α = .89).

Hypothesized Relationships

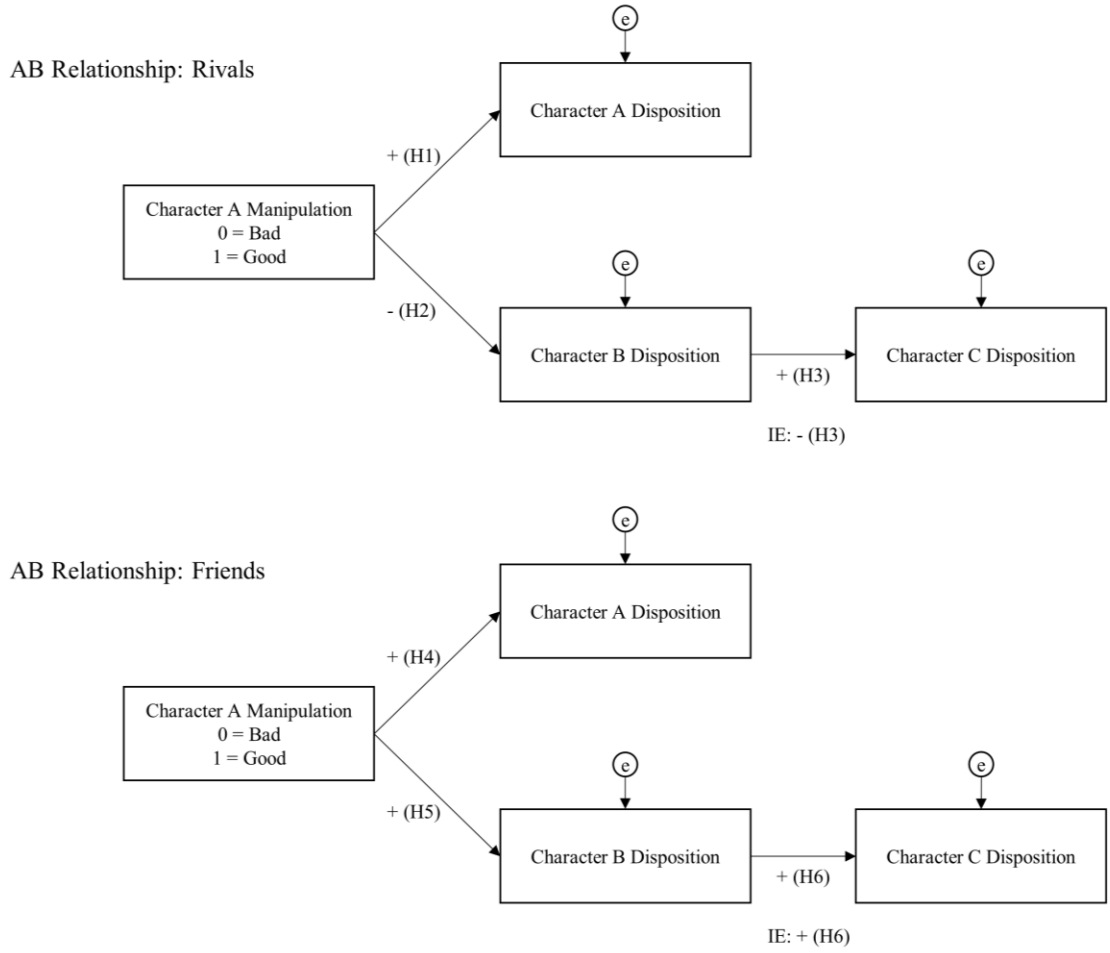
I revised my analysis plan to appropriately examine each of the character networks I created in Study 4. With the same path model structure, I ran a multiple

groups analysis (MGA) to determine whether any of the hypothesized paths in the model differed based on whether Characters A and B were described as friends or rivals. A visualization of the analysis is presented in Figure 10. Hypotheses 1 to 3 are all consistent with my previous studies. I expect the morality manipulation from Character A to positively affect perceptions of Character A (H1) and negatively affect perceptions of Character B (H2) given the two characters are described as rivals. Additionally, I expect a negative indirect effect of the Character A morality manipulation on Character C (H3) given their alliance with Character B.

When the relationship between A and B is friendly, however, I expect these predicted effects to be positive. Based on balance theory's predictions, the positive relationship between Character A and B should lead the viewer to assimilate the two characters resulting in a positive effect of the Character A morality manipulation on Character A (H4) and Character B (H5). Put differently, when Character A is described as moral, both A and B should be perceived as moral, and when Character A is described as immoral, both A and B should be perceived as immoral as a result of A and B being described as friends.

Figure 10

Hypothesized Relationships from the Multigroup Path Analysis



Additionally, I expect there to be a positive indirect effect between the Character A morality manipulation and Character C (H6). Using the same logic as the rivals condition, perceptions of Character C will be mediated through perceptions of Character B. Given I expect the relationship between the Character A morality manipulation and Character B to be positive in the friends condition, this indicates that there will be a positive indirect effect between the manipulation and perceptions of Character C. Finally, I assessed whether the predicted relationships significantly differ from one another based on the multigroup analysis. I compared paths between the rivals and friends conditions

(e.g., H1 vs. H4) and evaluated whether perceptions of the characters meaningfully differ based on the overall character network.

Results

The hypothesized multigroup model fit the data well (χ^2 [df = 6] = 14.48, p = .03, RMSEA = .08, CFI = .98, SRMR = .05). The path estimates from the rivals condition replicated the relationships from H1-H3. There was a significant positive effect between the Character A morality manipulation and Character A disposition (β = .82, p < .001), a significant negative effect between the Character A morality manipulation and Character B disposition (β = -.38, p < .001), a significant positive effect between Character B and Character C dispositions (β = .66, p < .001), and a significant indirect effect between the Character A morality manipulation and Character C disposition (β = -.25, p < .001). Again, these findings support the predictions of balance theory when Characters A and B are described as rivals in the narrative.

Regarding the friends condition, however, balance theory's predictions did not hold as well. First, I found support for H4, as the relationship between the Character A morality manipulation and Character A dispositions was positive and significant (β = .79, p < .001). These results mirror H1 and demonstrate that in the friends condition, the Character A morality manipulation still directly influences disposition formation of Character A. Second, I did not find support for H5. Rather than a significant positive effect, I found a significant negative effect between the Character A morality manipulation and Character B disposition (β = -.19, p = .05). This finding indicates that although Character A and B were described as friends within the narrative, it seems that

participants still tend to contrast these two characters. Moreover, in order to maintain balance, participants still form dispositions towards Character B in an inverse fashion to those of Character A, albeit at a much smaller degree when compared to the rivals condition.

Finally, I did not find support for H6. Although there was a strong positive relationship between Character B and C dispositions ($\beta = .65$, $p < .001$), the indirect effect between the Character A morality manipulation and Character C disposition was negative ($\beta = -.12$, $p = .04$). These findings mirror the relationship observed by H3. Rather than the predicted positive indirect effect, the observed negative indirect effect was due to the Character A morality manipulation having a negative influence perceptions of Character B. Thus, the assimilation that occurs between Character B and Character C still leads viewers to form their dispositions towards Character C in accordance with those of Character B.

I also assessed the pairwise parameter comparisons to see if any of the predicted relationships significantly differed from one another based on the AB relationship manipulation. I found no significant differences in any between any of the direct (H1 vs. H4: $p = .98$; H2 vs. H5: $p = .12$; H3 vs. H6: $p = .72$) or indirect paths ($p = .18$) based on condition. These results are supported by model fit indices which demonstrate that there was no decrement in fit when constraining structural weights between groups in the path model ($\Delta\chi^2$ [$df = 3$] = 2.53, $p = .47$).

Discussion

The model tests in Study 4 indicate that the AB relationship manipulation did not

change the way in which viewers formed their dispositions towards any of the characters within the network. Since the models function identically in terms of fit, direct paths, and indirect paths, there are two potential explanations for these results. First, it may be that viewers simply perceive conflict between Characters A and B regardless of the fact they were described as friends. Given conflict is a central component of narrative (Abbot, 2002; see also, Raney & Janicke, 2013), viewers may perceive conflict between these two characters even though no conflict is explicitly stated in the story. As a result, balance theory's predictions might not map onto character networks where all characters have positive relationships with one another as conflict is naturally forced into the network by the viewer.

Second, it may be simply that viewers did not pick up on the fact that Characters A and B were described as friends in the friends condition. I unfortunately did not include a manipulation check in Study 4 to assess whether participants viewed Characters A and B as friends. As such, it could be that participants read over this description and still believed they were rivals. In order to assess whether either of these explanations were the reason for the findings in Study 4, I ran a final replication study.

In the replication I added a third nondescript relationship condition and an additional manipulation check to test both of these explanations. The third condition was a nondescript condition which didn't explicitly state the relationship between Characters A and B. If viewers truly force conflict into the character network, the nondescript condition should mirror the results of the rivals condition given viewers will perceive Characters A and B to be at odds with one another. The additional manipulation check

assessed whether participants understood the relationship between Characters A and B correctly. Thus, with these additions to my final replication, I am able to determine whether either of the previously stated explanations are the reason why balance theory doesn't apply to a fully positive character network.

Study 5

Procedure and Participants

Study 5 employed a 2 (Character A: moral vs. immoral; between-subjects) X 3 (Character AB relationship: rivals vs. friends vs. nondescript; between-subjects) experimental design. The Character A morality manipulation was the same as the previous four studies. The AB relationship manipulation was largely the same as Study 4 with the addition of the nondescript condition. I made slight adjustments to the wording of the AB relationship manipulation in order to make it more potent, and I reworded certain sections of the stimuli overall to ensure that the narrative still read well with the new nondescript relationship manipulation (see Appendix A).

651 participants were recruited online from Amazon's Mechanical Turk where they were financially compensated for their participation in the study. Alongside the manipulation checks used in the previous four studies, the new manipulation check assessed whether participants correctly understood the relationship that existed between Characters A and B ("What type of relationship did [Character A] and [Character B] have?"). Based on incorrect responses to these manipulation checks, 136 participants were dropped giving a final sample of 515 (N = 515; n_{Male} = 299, 58.1%; n_{Female} = 214, 41.6%; $n_{Non\text{-}Binary}$ = 2, 0.4% M_{Age} = 40.16, SD_{Age} = 11.60). A chi-square test was run to

verify random assignment to condition. Random assignment (moral-rivals = 79, moral-nondescript = 87, moral-friends = 84, immoral-rivals = 90, immoral-nondescript = 96, immoral-friends = 79) was successful based on the analysis, χ^2 (df = 2) = 0.88, p = .65.

Character Dispositions

CFAs indicate that the factor structure used to measure character dispositions fit well for all characters and demonstrated excellent reliability (Character A: χ^2 [df = 13] = 44.33, p < .001, RMSEA = .07, CFI = 1.00, SRMR = .01, α = .98; Character B: χ^2 [df = 13] = 82.39, p < .001, RMSEA = .10, CFI = .98, SRMR = .02, α = .93; Character C: χ^2 [df = 13] = 137.94, p < .001, RMSEA = .14, CFI = .97, SRMR = .03, α = .92).

Results

Path Estimates. The analysis plan from Study 4 was utilized in Study 5. I ran a multigroup path analysis to determine if any of the paths in my proposed model differed based on condition. The proposed path model fit well across all three conditions (χ^2 [df = 9] = 22.62, p = .007, RMSEA = .05, CFI = .99, SRMR = .07). For the rivals condition, my findings from the previous four studies replicated. There was a significant positive effect of the Character A morality manipulation on Character A dispositions (β = .87, p < .001), a significant negative effect of the Character A morality manipulation on Character B dispositions (β = -.44, p < .001), a significant positive effect between the Character B and Character C dispositions (β = .44, p < .001), and a significant negative indirect effect of the Character A morality manipulation on Character C disposition (β = -.19, p < .001). Together these results provide support for H1 to H3 from Figure 10.

For the friends condition, I found a significant positive effect of the Character A

morality manipulation on Character A dispositions (β = .90, $p < .001$), a null effect of the Character A morality manipulation on Character B dispositions (β = .06, $p = .44$), a significant positive effect between the Character B and Character C dispositions (β = .68, $p < .001$), and a null indirect effect of the Character A morality manipulation on Character C disposition (β = .04, $p = .42$). The significant effects corroborate previous findings where the Character A morality manipulation has a strong effect on the perceptions of Character A and the relationship between Character B and C causes viewers to assimilate the two. However, it seems that, in the friends condition, participants did not assimilate Character A with Character B given the null effect of the Character A morality manipulation on Character B dispositions. Moreover, this null effect causes the indirect of the Character A morality manipulation on Character C to be null as well. Given these participants correctly answered the AB relationship manipulation check, I can conclude that, despite the positive relationship between Characters A and B, the information provided about Character A's morality did not influence perception of Character B, and thus the application of balance theory to the friends condition was not completely successful. These results indicate that there is support for H4 but no support for H5 or H6.

For the nondescript condition, I found that the path model mirrored the friends condition rather than the rivals conditions. Within the nondescript model, there was a significant positive effect of the Character A morality manipulation on Character A dispositions (β = .89, $p < .001$), a null effect of the Character A morality manipulation on Character B dispositions (β = -.01, $p = .94$), a significant positive effect between the

Character B and Character C dispositions (β = .68, $p < .001$), and a null indirect effect of the Character A morality manipulation on Character C disposition (β = .00, $p = .92$). Thus, it seems that when no information about the relationship between Character A and B was provided, participants assumed the characters were aligned with one another. Again, we see that Character A and B were not assimilated, and that perceptions of Character B were independent from those of Character A.

Pairwise Comparisons. I conducted pairwise comparisons between each of the models to assess the structural differences between conditions. Consistent with the path estimates, I found that the rivals and friends condition were significantly different from other another ($\Delta\chi^2$ [$df = 3$] = 36.23, $p < .001$). This result was driven by the significantly more negative effect of the Character A morality manipulation on Character B dispositions ($p < .001$) in the rivals condition (β = -.44) when compared to the friends condition (β = .06), the significantly more positive effect of Character B dispositions on Character C dispositions ($p < .001$) in the friends condition (β = .68) when compared to the rivals condition (β = .44), and the significantly more negative indirect effect between the Character A morality manipulation on Character C dispositions ($p < .001$) in the rivals condition (β = -.19) when compared to the friends condition (β = .04).

I also found that the rivals and nondescript condition were significantly different from one another ($\Delta\chi^2$ [$df = 3$] = 32.71, $p < .001$). Again, this result was driven by the significantly more negative effect of the Character A morality manipulation on Character B dispositions ($p < .001$) in the rivals condition (β = -.44) when compared to the nondescript condition (β = -.01), the significantly more positive effect of Character B

dispositions on Character C dispositions ($p < .001$) in the nondescript condition ($\beta = .68$) when compared to the rivals condition ($\beta = .44$), and the significantly more negative indirect effect between the Character A morality manipulation on Character C dispositions ($p < .001$) in the rivals condition ($\beta = -.37$) when compared to the nondescript condition ($\beta = .00$). Notably, all of the differences between the rivals and nondescript condition match the difference between the rivals and friends condition.

Finally, I found that there was no significant difference between the friends and nondescript conditions ($\Delta\chi^2$ [$df = 3$] = 0.41, $p = .94$). Results indicate that there were no significant differences between any of the direct or indirect effects suggesting these two models functioned identically. Thus, there is no substantial effect between the friends and nondescript condition, yet both conditions function differently than the rivals condition. These results suggest that, without concrete information that informs the viewer on the types of relationships two characters hold, audiences may perceive these relationships positively at baseline.

Summary of Studies 1 to 5

The results of these five studies indicate that there is strong evidence for the application of balance theory's predictions to character networks given the right circumstances. In all five studies, I observed that character dispositions were formed in a biased manner, which coincided with a narrative's character network when Character A and Character B were pitted against one another. Thus, when a main character is at odds with a rival, information about the main character ripples throughout the character network and alters the way in which viewers perceive other characters based on their

relationships to the main character.

However, the results from Studies 4 and 5 indicate that there might be boundary conditions in the application of balance theory to character networks. When Characters A and B are described as friends, or when their relationship is not described at all, viewers perceptions of Character B are independent to those of Character A. This is notable given balance theory would suggest the perceptions of these two characters should be assimilated by their positive relationship with one another.

Given the Character A morality manipulation had a null effect in both the friends and nondescript condition, I can rule out that participants perceptually force conflict between Characters A and B. Additionally, since the new manipulation check in Study 5 allowed me to firmly determine that viewers correctly understood the relationship between Characters A and B, I can effectively rule out that participants misread their relationship in the story. Thus, both explanations I provided at the end of Study 4 were resolved by the additions to Study 5's design.

While this may suggest that balance theory's predictions do not apply to networks where all characters are positively related to one another, I suggest that there are two potential issues with the stimuli I created for these studies that have led to these effects. First, the stakes in my narrative stimuli may have been too high. The natural disaster was described as a world-ending event and thus may have diluted the AB relationship manipulation, especially when Characters A and B were described as friends. Second, given the natural disaster was an external conflict in the story (i.e., outside of the character network), the relationships between characters were not directly involved in the

resolution of this conflict, and thus the relationship manipulation could have again been diluted due to the story's context. As such, both issues embedded within the narrative could have caused the relationship manipulation to only have captured one side of the relationship continuum (i.e., negative, and null effects).

In the next chapter, I aim to remedy these potential issues by recreating my narrative stimuli and proposing a methodology that captures character interdependent disposition formation in both types of balanced character networks (i.e., +-- and +++ triads). Regarding the stimuli, I aim to lower the stakes of the narrative conflict and make the conflict more central to the character network. By adjusting the context of the story, I will integrate the conflict into the relationships between characters such that manipulating the type of relationship between the main characters will force contrast and assimilation effects. Regarding the methodology, I will take a similar approach to the studies presented in this chapter. I aim to conduct a stepwise approach where I establish that both the Character A morality manipulation and the AB relationship manipulation function properly prior to the addition of secondary characters. If both manipulations work accordingly, I aim to add two secondary characters, one which aligns with Character A and one which aligns with Character B. By adding more characters to the network, I hope to identify the extent of character interdependent disposition formation.

Chapter 3. Methods

At the end of Chapter 2, I discussed the shortcomings of my previously used stimuli. Succinctly, the issues were that (a) the stakes of the conflict were too high, which could have inundated the effects of the character network, and (b) the conflict was external to the character network, which may have taken focus away from the friends/rivals manipulation specifically. To remedy these problems, I conducted two additional studies that employ a new narrative stimulus alongside a phased study design, to provide a more effective test of balance theory's application to a character network.

Study 6

New Stimulus

First, the newly created stimulus placed the narrative conflict on the relationship between the two main characters (see Appendix B). The new story centered on the relationship between two track coaches (e.g., Character A and Character B) at a segregated Virginia school in the 1960s. In this narrative, the Character A morality manipulation altered whether the head track coach (e.g., Character A) was in support or against the desegregation of his track team. When Character A is in support of desegregation, participants should perceive him to be moral, and when Character A is against desegregation, participants should perceive him to be immoral. Thus, consistent with the previous studies, the information provided about Character A should directly influence the dispositions that participants form toward Character A.

The A/B relationship manipulation in the new stimulus mimicked that of the

friends/rivals manipulation from the previous studies. Again, the narrative provided no morally relevant information about Character B, and I manipulated the type of relationship that Character A and Character B have with one another, such that they explicitly liked or explicitly disliked one another (see Appendix B). When Characters A and B have a negative relationship with one another, findings should replicate those from the previously used stimuli when Characters A and B were described as rivals. However, with the narrative conflict being centered on the relationship between Characters A and B in this story, the new stimulus should provide a more effective test of balance theory's predictions regarding a fully positive character network. When Characters A and B have a positive relationship, participants should assimilate the two characters based on the Character A morality manipulation. Thus, the new narrative stimulus should both (a) replicate existing findings related to character interdependence and (b) be able to determine the boundaries of balance theory's application to character networks.

Phased Measurement

Second, the new study utilizes a phased measurement approach rather than the previously used cross-sectional approach. Recent work (see Grizzard et al., 2023) has demonstrated that dividing a narrative stimulus into phases (or acts) allows one to test disposition formation more sensitively throughout a narrative's unfolding. In other words, by including multiple measurement timepoints within the study design, I can more effectively track how dispositions towards characters are impacted by manipulations of the narrative as they are presented. Regarding the current study, I can examine within-subject change towards the disposition of specific characters (i.e., Character B) before and after introducing the type of relationship he has with Character A. As a result, I can

more purely quantify the extent to which a character network impacts and alters disposition formation. As such, the newly reworked narrative stimulus and study design presented three separate acts to provide a stronger test for character interdependence. Act 1 introduced Character B in isolation, Act 2 introduces Character A in isolation alongside the Character A morality manipulation, and Act 3 introduced the relationship manipulation for Characters A and B. Thus, Study 6 consisted of a simple two-character network with three measurement timepoints.

There are two major benefits to employing this measurement strategy. First, I can assess the effects of both the Character A morality manipulation and A/B relationship manipulation on the dispositions formed toward each character prior to introducing more characters to the narrative network. In other words, I can establish that both manipulations affect the dispositions formed toward Character A, the dispositions formed toward Character B, and their perceived relationship as anticipated before focusing on how these manipulations spread through the character network. Second, I can ascertain the extent to which interdependence induces a shift in a disposition. By measuring Character B twice (i.e., before and after the relationship manipulation), I can determine how much the Character A manipulation and the relationship manipulation impact disposition formation toward Character B.

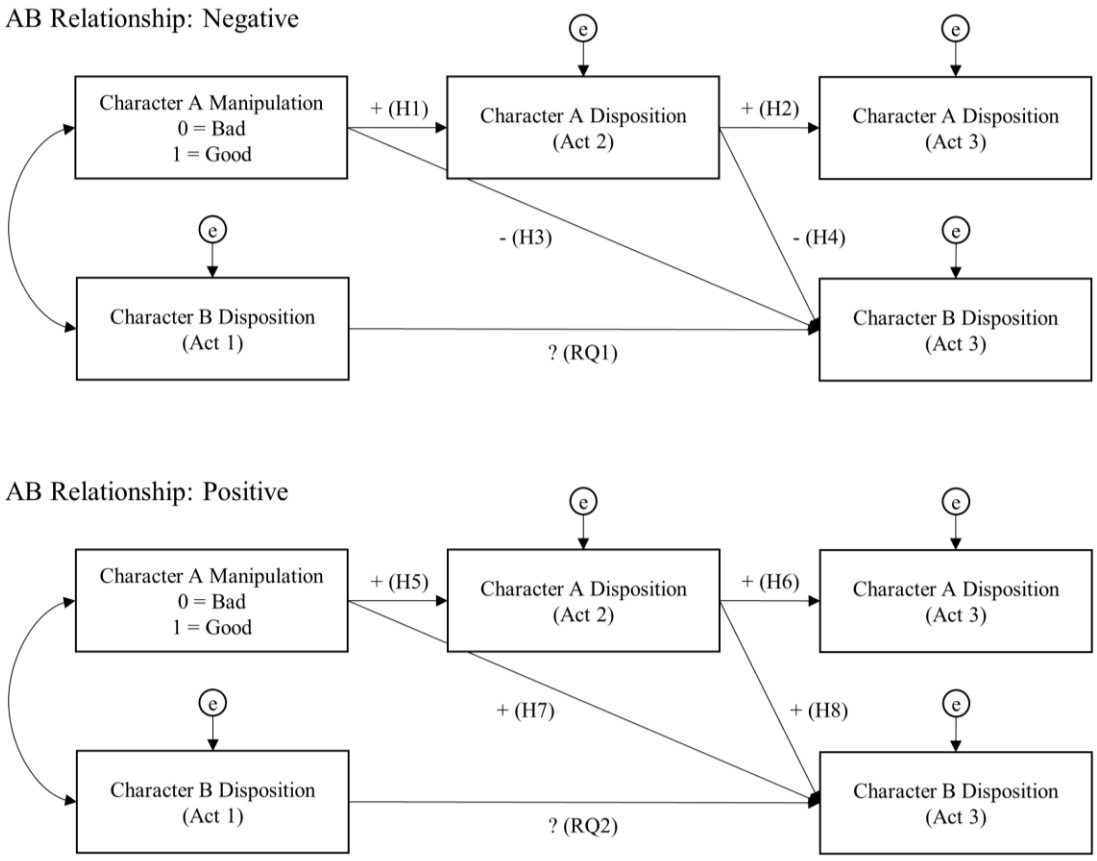
Cross-lagged Analysis and Hypotheses

Finally, because the new study design used a phased measurement approach, I ran a cross-lagged multigroup path model to test interdependent disposition formation. Rather than a path model that directly mirrors the character network like in the previous studies, the cross-lagged model examined how the dispositions of both Characters A and

B change across each act. Figure 1 depicts the hypothesized multigroup model. Again, I expect the Character A Morality manipulation to directly influence dispositions of both Character A and B. However, the new multigroup model restructured the previously used path model into a cross-lagged format and additionally captures how the dispositions formed in each act influence one another.

Figure 11

Hypothesized Path Model for Study 6



H1 represents the direct effect of the Character A morality manipulation on Character A dispositions. When Character A is described as supporting desegregation, he should be perceived more positively than when he is described as being against desegregation. H2 represents a carryover of this effect (i.e., Act 2 dispositions toward Character A will predict Act 3 dispositions toward Character A). H3 captures the direct

effect of the Character A morality manipulation on Character B dispositions when the characters have a negative relationship. When Character A is described as being for desegregation and the characters dislike one another, Character B should be perceived more negatively. Similarly, when Character A is described as being against desegregation and the characters dislike one another, Character B should be perceived more positively. H4 represents the mediated version of this effect through Character A dispositions. Finally, RQ1 captures the carryover effect of Act 1 dispositions toward Character B on Act 3 dispositions toward Character B. It is unclear whether Act 1 dispositions will anchor Act 3 dispositions for Character B, or whether the dispositions formed toward Character B during Act 1 will be completely washed out or even reversed by the Character A manipulation. Thus, this path is posed as a research question.

H5 through H8 are similar to H1 through H4. However, H7 and H8 are reversed due to the fully positive character network. These paths should be positive due to participants' assimilating perceptions of Characters A and B when the characters' relationship is positive. In other words, when Character A is against desegregation and there is a positive relationship between the characters, Character B should be perceived more negatively and in accordance with Character A. On the other hand, when Character A is for desegregation and there is a positive relationship between the characters, Character B should be perceived more positively and in accordance with Character A. Regarding RQ2, it is again unclear what the relationship between Act 1 dispositions and Act 3 dispositions toward Character B will be. Thus, RQ2 mirrors the same unspecified relationship presented in RQ1.

Power

I conducted two separate power analyses to assess how many participants are necessary to test the hypotheses in Study 6. First, I conducted an a priori GPower analysis. Using a MANOVA test with an $f = .14$ (i.e., a small effect), $\alpha = .05$, $\beta = .80$, groups = 4, and measurements = 3, the power analysis indicated 351 participants were sufficient to detect a small effect size. Second, I conducted an a priori RMSEA analysis to determine how many participants are necessary to adequately test my hypothesized model. With an $\alpha = .05$, $df = 8$, $\beta = .80$, Null RMSEA = 0, and Alternative RMSEA = .08, the analysis indicated 294 participants were sufficient. Thus, the minimum sample size I sought to recruit was 400 participants with the anticipation of attrition.

Participants

A total of 532 participants were recruited from Mechanical Turk. Participants were included in analyses if they (a) had complete data and (b) correctly answered attention checks at the end of the survey (e.g., "What state was the current story set in?" and "What sport was featured in the story?"). Following inclusion criteria, the final sample consisted of 406 participants ($M_{Age} = 40.09$, $SD_{Age} = 11.09$; Gender, $n_{Female} = 164$, $n_{Male} = 240$, $n_{Gender\ non\text{-}conforming} = 1$, $n_{Undisclosed} = 1$; Ethnicity, $n_{Non\text{-}Hispanic} = 378$, $n_{Hispanic} = 28$; Race, $n_{White} = 317$, $n_{Black} = 48$, $n_{Asian} = 24$, all other races < 5% of the sample). A chi-square analysis indicated that random assignment was not affected by the inclusion criteria, $\chi^2(1, 406) = .24$, $p = .63$.

Procedure

Study 6 employed a 2 (Character A: moral vs. immoral; between-subjects) X 2 (A/B Relationship: positive vs. negative; between-subjects) experimental design with three measurement timepoints. Following consent, participants were randomly assigned

to one of the four experimental conditions ($n_{\text{Moral/Positive}} = 99$, $n_{\text{Moral/Negative}} = 109$, $n_{\text{Immoral/Positive}} = 99$, $n_{\text{Immoral/Negative}} = 99$). Participants then read the narrative exposition and Act 1 before responding to character morality and character liking measures for Character B. Participants repeated this procedure for Acts 2 and 3, where they responded to the same measures for Character A following Act 2 and for Characters A and B following Act 3. Finally, participants responded to motivation to respond without prejudice measures, attention checks, and demographics before exiting the survey.

Measures

Fit indices for each scale's measurement model and their corresponding reliabilities are reported in Table 1. All measurement models demonstrated good to excellent fit and reliability.

Character Morality. Perceptions of character morality were measured using the character moral foundations questionnaire short form (CMFQ-SF; Grizzard, Fitzgerald, et al., 2020). The CMFQ-SF is a short form of the previously discussed CMFQ-X and is a five-item measure to gauge moral perceptions of a character along each of the moral foundations identified by MFQ (Haidt & Joseph, 2007), with responses measured using a 7-point Likert-type scale.

Character Liking. Character liking was measured using the previously discussed 6-item character liking scale (Krakowiak & Oliver, 2012) with responses measured along a 7-point Likert-type scale. The two reverse scored items from the scale were dropped from final character liking composites based on poor model fit.

Motivation to Respond Without Prejudice. Given the stimuli focused on racial tensions between Characters A and B regarding Black individuals, I sought to control for

prejudice biases toward Black individuals as they may impact dispositions formation processes toward either character. Based on feedback from my committee, I utilized the motivation to respond without prejudice scale (Plant & Devine, 1998). The scale is divided into two subscales (e.g., external motivations and internal motivations) with responses measured along a 7-point Likert-type scale. The external motivation subscale is designed to measure how much one tries to act in a nonprejudiced way towards Black individuals based on how others might perceive them (e.g., "I attempt to appear nonprejudiced toward Black people in order to avoid disapproval from others."), whereas the internal motivation subscale is design to measure how much one tries to act in a nonprejudiced way towards Black individuals based on their personal beliefs (e.g., "I am personally motivated by my beliefs to be nonprejudiced toward Black people.").

Table 2

Measurement Model Fit Indices and Scale Reliabilities for Study 6

	$\chi 2$	*df*	*p*	CFI	RMSEA	SRMR	α
CMFQ-SF							
Ch. A (T2)	27.25	5	<.001	.99	.11	.02	.92
Ch. A (T3)	23.09	5	<.001	.99	.10	.02	.93
Ch. B (T1)	14.80	5	.010	1.00	.07	.01	.94
Ch. B (T3)	24.39	5	<.001	.99	.10	.02	.93
Character Liking							
Ch. A (T2)	22.53	2	<.001	.99	.16	.01	.97
Ch. A (T3)	24.32	2	<.001	.99	.17	.01	.97
Ch. B (T1)	36.14	2	<.001	.96	.21	.04	.87
Ch. B (T3)	47.88	2	<.001	.97	.24	.03	.92
External Motivation	48.45	5	<.001	.98	.15	.02	.92
Internal Motivation	48.53	5	<.001	.95	.15	.04	.85

Note. Inflated RMSEA scores are due to the low degrees of freedom for each measurement model (Kenny et al., 2015).

Study 7

In Study 7, I sought to expand the character network to four characters. Given I utilized a phased measurement approach, in Study 7, I introduced secondary characters

into the network by including an additional act in the narrative (see Appendix B). The primary goal for including secondary characters was to examine whether the audience's feelings about the relationship between the two main characters extends to perceptions of secondary characters. Thus, I introduced two secondary characters who are on opposing sides of the conflict, namely Character C (who aligned with Character A) and Character D (who aligned with Character B).

The addition of these secondary characters allows me to address the boundary conditions of character interdependence more fully. By measuring the covariance between Character C and Character D dispositions, I can determine how the perceived conflict or alignment between Characters A and B extends to Characters C and D. In other words, I can examine the extent to which the conflict spreads throughout the character network. To ensure that both Characters C and D are perceived to have positive relationships with their respective main characters, these characters were described as the spouses of Characters A and B.

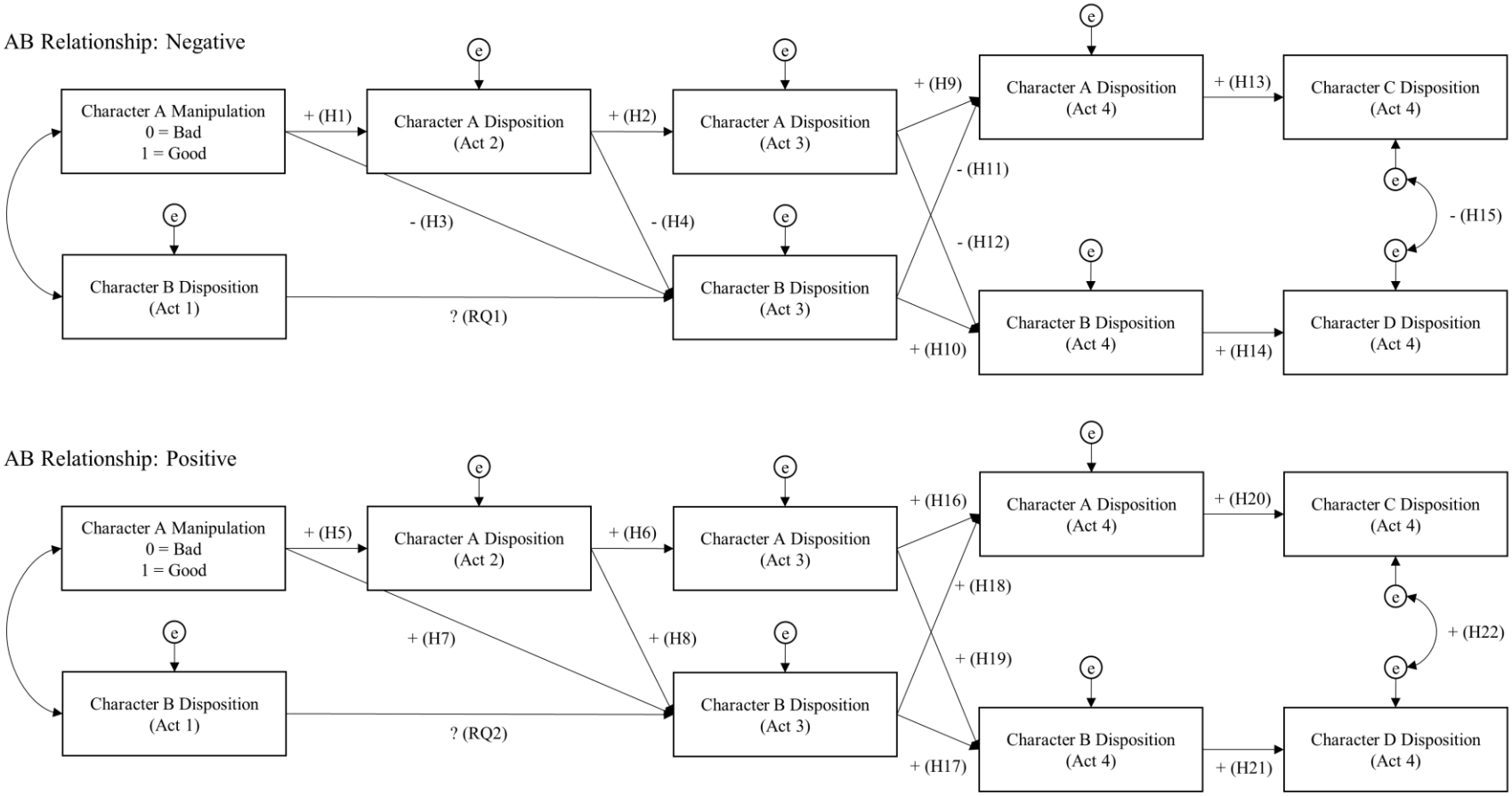
Hypotheses

Again, to test character interdependence in this study I ran a cross-lagged multigroup path model. Figure 2 depicts the hypothesized path model. For the negative relationship condition, H1 through H8 and RQ1 through RQ 2 are identical to those from Study 6. H9 through H22 relate to paths added for the two new characters. H9, H10, H16, and H17 are all positive and reflect the carryover effects of Act 3 dispositions to Act 4 dispositions for Characters A and B. H13 and H20 reflect the positive relationship between Character A and Character C, whereas H14 and H21 reflect the positive relationship between Character B and Character D. H11 and H12 represent the negative

association between Character B dispositions and Character A dispositions resulting from the fact that they are described as unfriendly towards one another. H18 and H19 on the other hand represent the positive association between Character B dispositions and Character A dispositions resulting from the fact that they are described as friendly towards one another. Finally, H15 reflects the perceived negative relationship between Characters C and D when Characters A and B are unfriendly towards one another, whereas H22 reflects the perceived positive relationship between Characters C and D when Characters A and B are friendly towards one another.

Figure 12

Hypothesized Path Model for Study 7



Power

I conducted two separate power analyses to assess how many participants are necessary to test the hypotheses for Study 7. Again, I first conducted an a priori GPower analysis. Using a MANOVA test with an $f = .14$ (i.e., a small effect), $\alpha = .05$, $\beta = .80$, groups = 4, and measurements = 4, the power analysis indicated 269 participants were sufficient to detect a small effect size. Then using an a priori RMSEA analysis with $\alpha = .05$, $df = 46$, $\beta = .80$, Null RMSEA = 0, and Alternative RMSEA = .08, the analysis indicated 100 participants were sufficient. Thus, the minimum sample size I sought to recruit was 350 participants with the anticipation of participant attrition.

Participants

A total of 884 participants were recruited from Dynata. Participants were again included in analyses if they (a) had complete data and (b) correctly answered attention checks at the end of the survey. Following inclusion criteria, the final sample consisted of 279 participants ($M_{Age} = 49.94$, $SD_{Age} = 16.34$; Gender, $n_{Female} = 155$, $n_{Male} = 121$, $n_{Trans\text{-}female} = 1$, $n_{Gender\ non\text{-}conforming} = 2$; Ethnicity, $n_{Non\text{-}Hispanic} = 244$, $n_{Hispanic} = 33$, $n_{Undisclosed} = 2$; Race, $n_{White} = 220$, $n_{Black} = 32$, all other races < 5% of the sample). A chi-square analysis indicated that random assignment was not affected by applying the inclusion criteria, $\chi^2(1, 279) = .03$, $p = .87$.

Procedure

Study 7 employed a 2 (Character A: moral vs. immoral; between-subjects) X 2 (A/B Relationship: positive vs. negative; between-subjects) experimental design with four measurement timepoints. Following consent, participants were randomly assigned to

one of the four experimental conditions ($n_{\text{Moral/Positive}} = 66$, $n_{\text{Moral/Negative}} = 71$, $n_{\text{Immoral/Positive}} = 67$, $n_{\text{Immoral/Negative}} = 75$). The procedure for Study 7 was identical to Study 6 with the addition of Act 4 where participants additionally responded to character morality and character liking measures for Characters A, B, C, and D once they completed the narrative.

Measures

The measures used in Study 6 were also used in Study 7. All measurement models and reliabilities are reported in Table 2. All measurement models demonstrated moderate to excellent fit and reliability except for the external motivation subscale. However, with the aim of replicating results from Study 6, I opted to keep all five items in the subscale for Study 7.

Table 3

Measurement Model Fit Indices and Scale Reliabilities for Study 7

	$\chi 2$	*df*	*p*	CFI	RMSEA	SRMR	α
CMFQ-SF							
Ch. A (T2)	21.28	5	.001	.99	.11	.02	.92
Ch. A (T3)	34.80	5	<.001	.97	.15	.02	.93
Ch. A (T4)	46.85	5	<.001	.96	.17	.03	.92
Ch. B (T1)	15.27	5	.009	.99	.09	.01	.95
Ch. B (T3)	4.48	5	.482	1.00	.00	.01	.94
Ch. B (T4)	1.46	5	.918	1.00	.00	.00	.95
Ch. C (T4)	34.24	5	<.001	.98	.15	.03	.92
Ch. D (T4)	29.26	5	<.001	.98	.13	.01	.95
Character Liking							
Ch. A (T2)	21.57	2	<.001	.99	.19	.01	.97
Ch. A (T3)	15.09	2	.001	.99	.15	.01	.96
Ch. A (T4)	20.87	2	<.001	.99	.18	.02	.97
Ch. B (T1)	28.57	2	<.001	.96	.22	.04	.88
Ch. B (T3)	88.79	2	<.001	.90	.40	.06	.91
Ch. B (T4)	18.21	2	<.001	.98	.17	.03	.93
Ch. C (T4)	65.59	2	<.001	.95	.34	.05	.94
Ch. D (T4)	46.53	2	<.001	.95	.28	.05	.91
External Motivation	101.60	5	<.001	.86	.26	.09	.85
Internal Motivation	45.84	5	<.001	.92	.17	.06	.82

Note. Inflated RMSEA scores are due to the low degrees of freedom for each measurement model (Kenny et al., 2015).

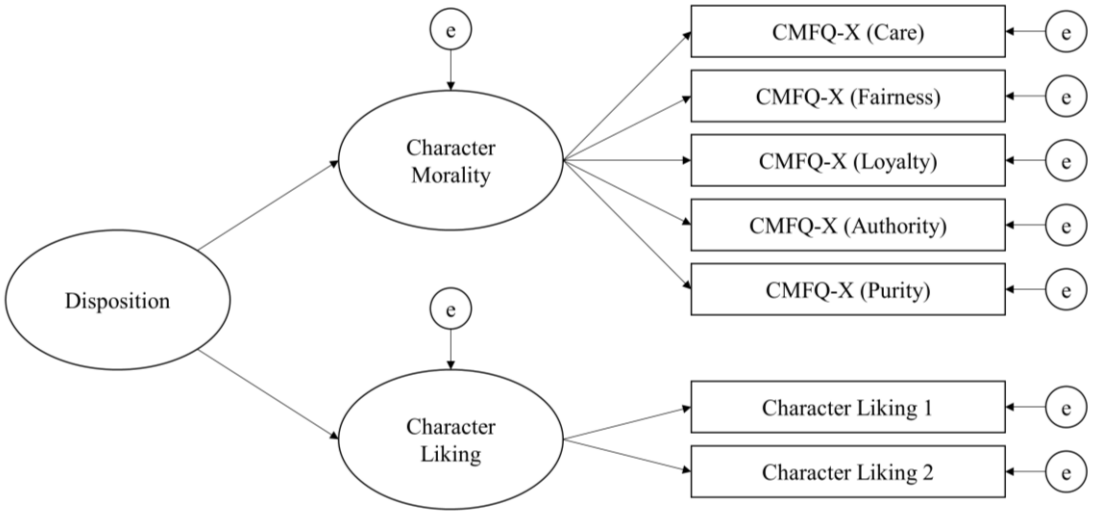
Chapter 4. Results

In Chapter 3, I discussed the methods and planned analyses for both Studies 6 and 7. In this chapter, I present the results of these studies. The analysis of my data was conducted in two steps. First, I evaluated whether I could create the same disposition composites used in my previous studies, and second, I tested the hypothesized models presented in Chapter 3.

Factor Analyzing Disposition Composites

Prior to testing my hypothesized models, I sought to determine whether the disposition composites I used in my previous work fit the data from Studies 6 and 7. To reiterate, the factor structure for the disposition composites was a second-order, unidimensional model where the five CMFQ-X items loaded onto a latent character morality variable, the first two character liking items loaded onto a latent character liking variable, and both the latent character morality and latent character liking variables loaded onto a second-order character disposition latent variable (see Figure 1).

Figure 13
Factor Structure for Disposition Composites



The disposition factor structure was tested across all measurement time points for each character. On average, the proposed factor structure fit the data well for both studies (χ^2[13] range: 20.45-125.70, CFI range: .95-1.00, RMSEA range: .05-.18, SRMR range: .01-.05). However, two major issues arose when testing these models. First, several of the models had negative disturbance terms for the latent character morality variable, indicating the estimated covariance matrix was not positive definite. In other words, these results suggest that the proposed factor structure is likely too complex for the data, despite admissible fit indices.

I then tested a simplified version of these models where I removed the character disposition variable and correlated the latent character morality and character liking factors. Although respecifying the model remedied the issue of negative error terms, some of the respecified factor analyses led to the second major issue, which was a lack of covariation between character morality and character liking. While some of the models did demonstrate good evidence for creating a disposition composite based on how

strongly character morality and character liking correlated (e.g., Character A T1 r = .79), others did not provide such evidence (e.g., Character B T1 r = .16). Thus, rather than create a disposition composite, I determined it was more statistically appropriate to analyze both character morality and character liking separately from one another. The structure and direction of my hypotheses within the proposed path models remained the same; however, following these results, I tested two versions of the model for each study, one for character morality and one for character liking.

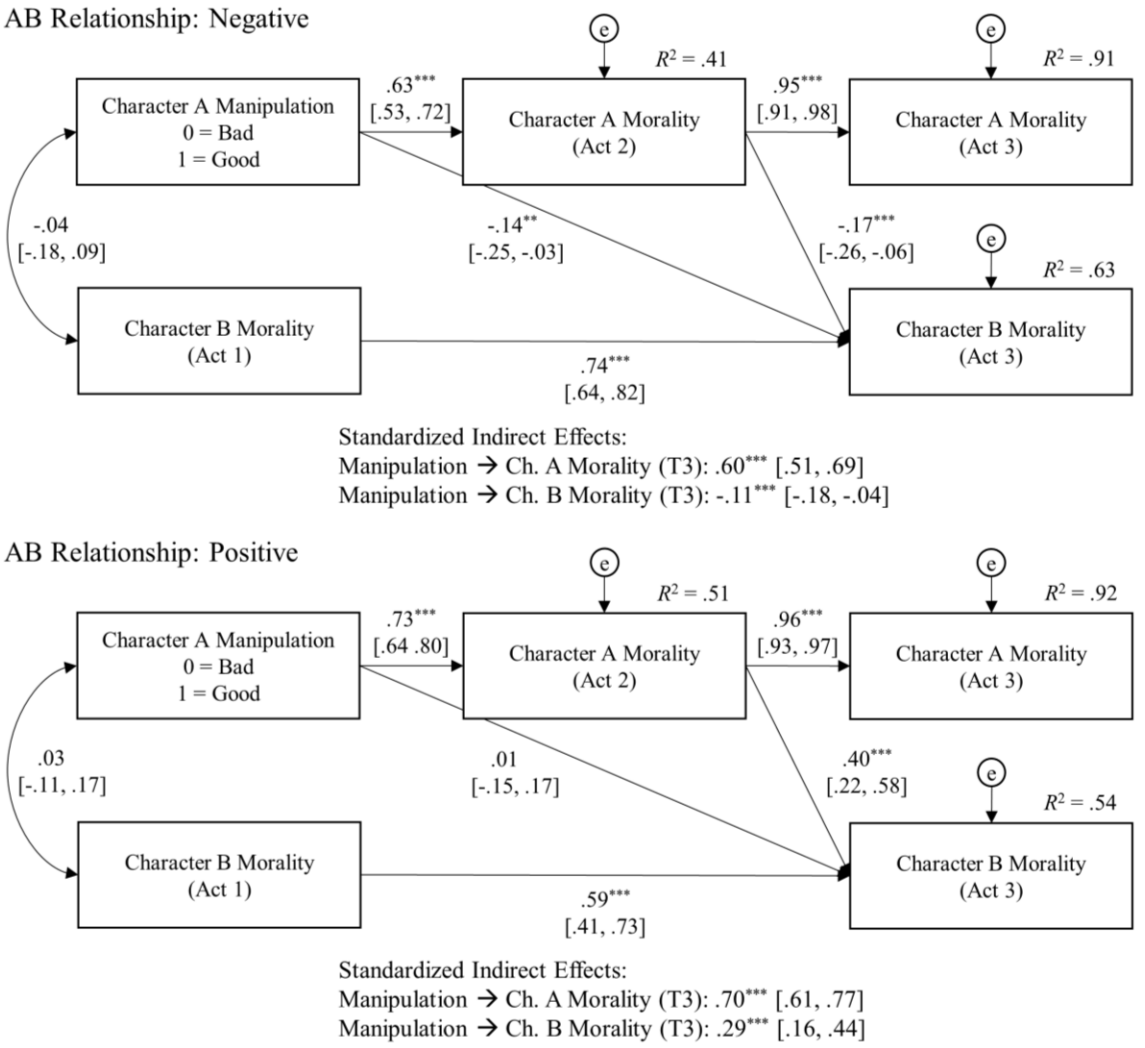
Testing the Hypothesized Path Models

Study 6

The results of the hypothesized path models for Study 6 are presented in Figures 2 and 3. The estimates within these figures are standardized and represent the unconstrained multigroup results (i.e., estimates are allowed to vary between the negative and positive relationship conditions). Indirect effects in each of the models were estimated using 5,000 bootstrapped samples and 95% bias-corrected confidence intervals. Importantly, despite not being visually depicted in these figures, both internal and external motivations to control prejudice were controlled for in these models.

Figure 14

Results of Hypothesized Path Model for Character Morality in Study 6



Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Bracketed values represent the lower and upper confidence intervals of each estimate.

The character morality model fit the data moderately, $\chi^2(8) = 98.20$, $p < .001$, CFI = .95, RMSEA = .17, SRMR = .10. Several noticeable patterns emerged from the results of the model. First, regarding the eight hypotheses I proposed within this model from Chapter 3, all were supported except for H7 (i.e., the path from the Character A manipulation to moral perceptions of Character B in Act 3 within the positive relationship condition). Taken together, these results indicate (a) the Character A manipulation had strong

positive effects on moral perceptions of Character A in Act 2 (supporting H1 and H5), (b) moral perceptions of Character A in Act 2 positively predicted moral perceptions of Character A in Act 3 (supporting H2 and H6), (c) the Character A manipulation negatively predicted moral perceptions of Character B in Act 3, but only for the negative relationship condition (supporting H3 but not H7), and (d) moral perceptions of Character A in Act 2 significantly predicted moral perceptions of Character B in Act 3, such that when their relationship is negative moral perceptions of Character A negatively predict moral perceptions of Character B, and when their relationship is positive moral perceptions of Character A positively predict moral perceptions of Character B (supporting H4 and H8). By and large, these results support both the contrast and assimilation predictions of character interdependence, where when Characters A and B are at odds with one another, perceptions of their morality are contrasted, but when they are aligned with one another, perceptions of their morality are assimilated.

Second, I found significant indirect effects of the Character A manipulation on the moral perceptions of both Character A and Character B in Act 3. These effects are consistent with character interdependence across both conditions. Specifically, moral perceptions of these characters are contrasted when they have a negative relationship, such that when Character A is described as moral, Character B is perceived as more immoral, and when Character A is described as immoral, Character B is perceived as more moral. However, moral perceptions of these characters are assimilated when they have a positive relationship, such that when Character A is described as moral, Character B is perceived as more moral, and when Character A is described as immoral, Character B is perceived as more immoral.

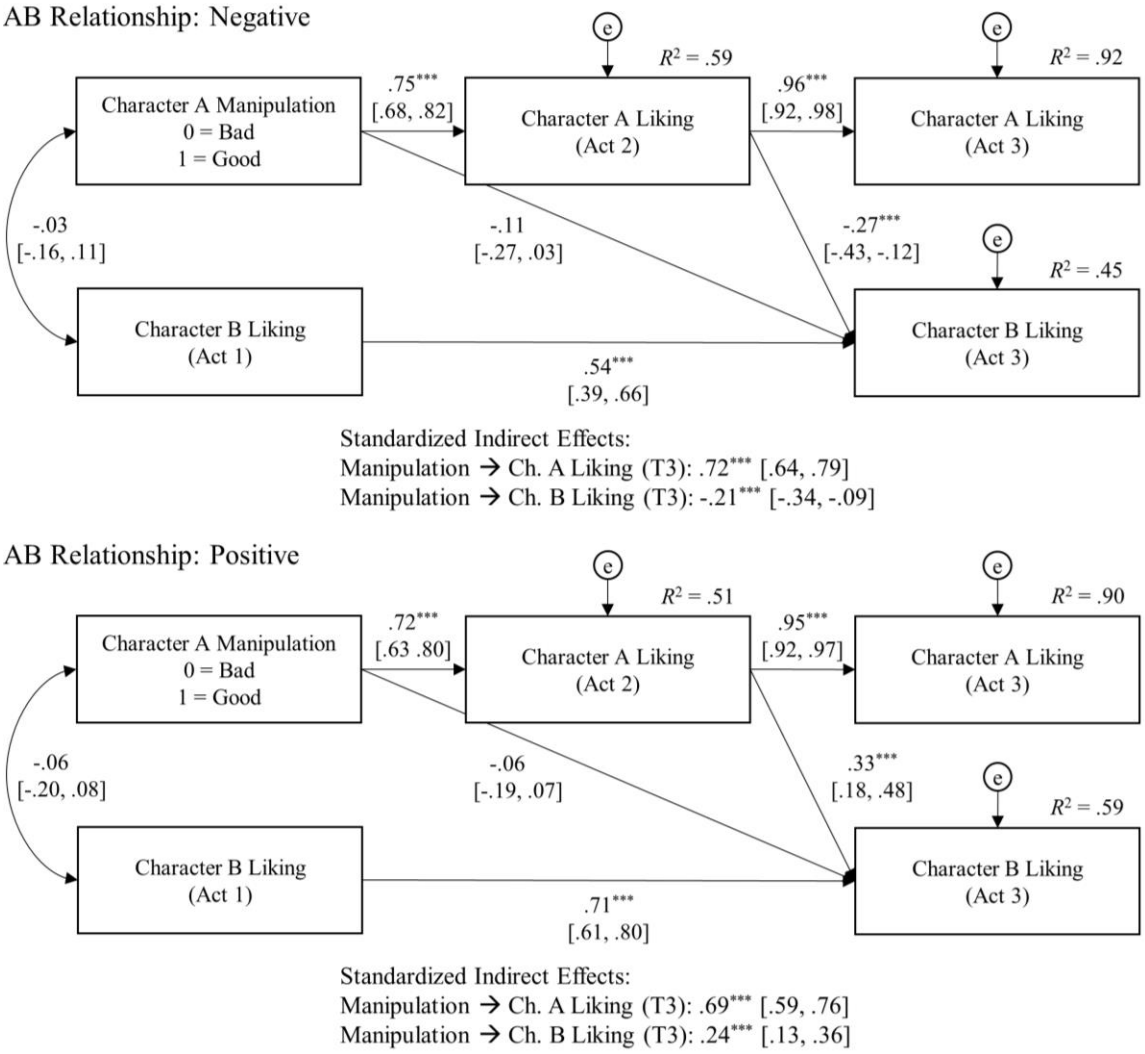
Third, I found that moral perceptions of Character B in Act 1 positively predicted moral perceptions of Character B in Act 3 (answering RQ1 and RQ2). This result indicates that the moral perceptions of Character B were anchored by initial moral judgments. In other words, initial moral perceptions of Character B strongly forecast how one will morally perceive him later in the narrative. Finally, I found that the model explained substantial amounts of variance across all three endogenous character morality variables in both conditions. By simply manipulating the morality of Character A and accounting for initial perceptions of Character B, the model was able to explain upwards of 41% to 92% of the variance in the moral perceptions of Characters A and B. This result lends credence to both the initial conceptualization of ADT and character interdependence, where moral information drastically drives how one feels about the character they are evaluating, and, likewise, this information spreads throughout a character network to influence how one will morally perceive other characters within a story.

The character liking model fit the data well, $\chi^2(8) = 22.78$, $p < .001$, CFI = .99, RMSEA = .07, SRMR = .04. The results of the character liking model largely reflect those of the character morality model. Succinctly, character liking is also influenced by character interdependence, such that when two characters are negatively related to one another, character liking is contrasted, and when two characters are positively related to one another, character liking is assimilated. Notably, the path from the Character A manipulation to Act 3 Character B liking in the negative relationship condition was not significant within the character liking model, indicating a lack of support for H3. This result indicates that, rather than a direct effect, the effect of the Character A manipulation

on Character B liking in Act 3 is fully mediated through Character A liking in Act 2 within both the negative and positive relationship conditions.

Figure 15

Results of Hypothesized Path Model for Character Liking in Study 6



Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Bracketed values represent the lower and upper confidence intervals of each estimate.

Finally, given both the character morality and character liking models were conducted using a multigroup analysis, I examined whether model fit differed between the unconstrained multigroup models and the models that held equivalent structural weights. I found that both the unconstrained character morality model ($\Delta\chi^2[11] = 98.34$, *p*

< .001) and the unconstrained character liking model ($\Delta\chi^2[11] = 95.89$, $p < .001$) fit significantly better than their corresponding structural weight models. These results indicate that, across both the character morality and character liking models, the paths included in each model function differently based on condition. Given the only paths that differ between conditions for each model are the effects of the Character A manipulation and perceptions of Character A in Act 2 on perceptions of Characters A and B in Act 3 (e.g., H3 and H4 vs. H7 and H8), this finding suggests that character perceptions are contrasted when the characters' relationship is negative and are assimilated when the characters' relationship is positive, again supporting the full range of predictions for character interdependence.

Study 7

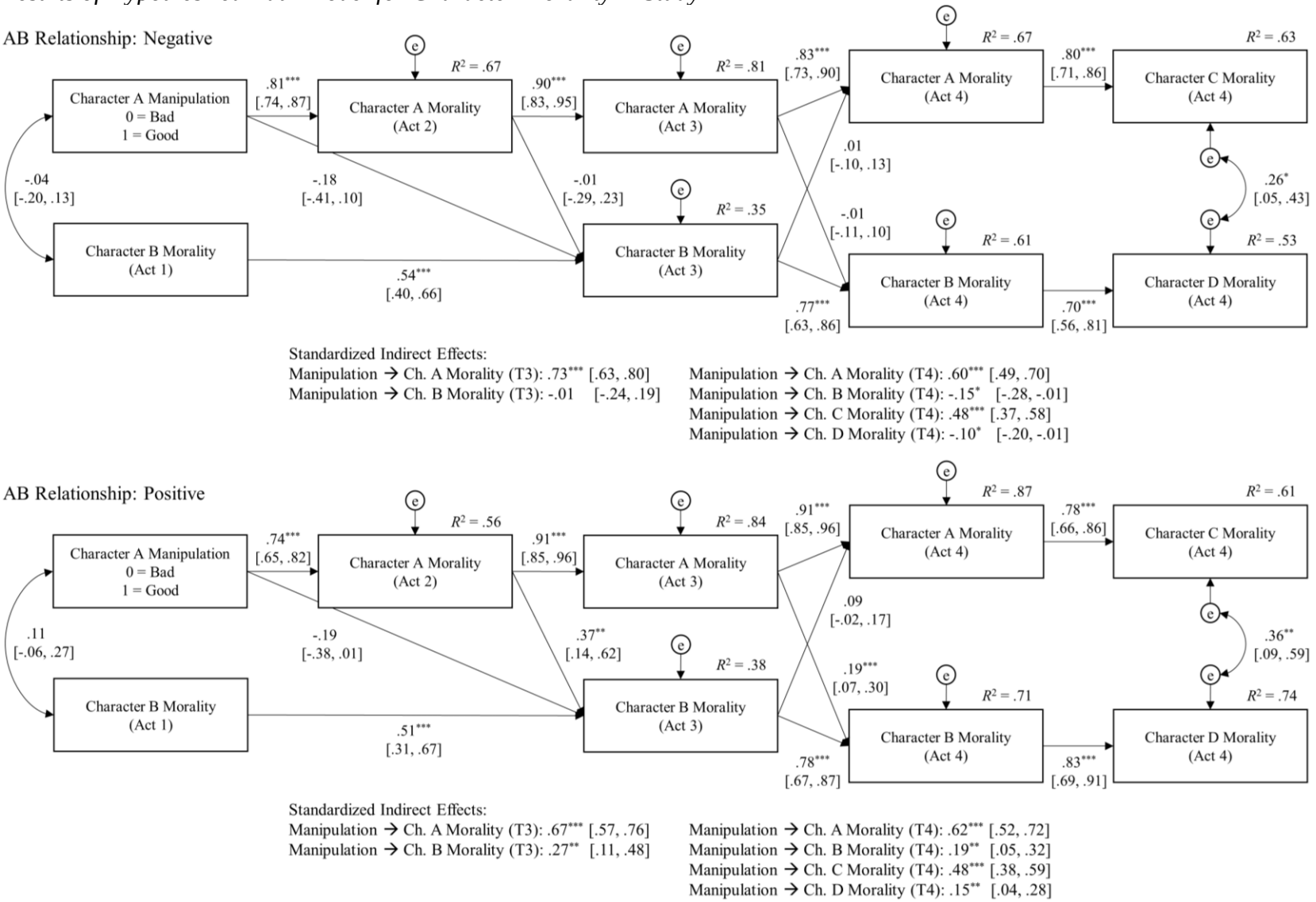
The results of the hypothesized path models for Study 7 are presented in Figures 4 and 5. These analyses were identical to those of Study 6, with the addition of the dependent variables from Act 4. The character morality model fit the data moderately well, $\chi^2(46) = 204.93$, $p < .001$, CFI = .93, RMSEA = .11, SRMR = .05. When examining the first half of the model (i.e., Acts 1 to 3), the results from Study 7 largely replicated those of Study 6 (supporting H1, H2, H5, H6, and H8), with the only difference being that both the Character A manipulation and moral perceptions of Character A in Act 2 had no effect on perceptions of Character B in Act 3 in the negative relationship condition (providing no support for H3 or H4). However, the findings from Study 7 did fully replicate those of Study 6 in the positive relationship condition, where, although there was not a direct effect of the Character A manipulation, moral perceptions of Character A in Act 2 positively predicted moral perceptions of Character B in Act 3

(again refuting H7 but supporting H8). These results extend to the indirect effects of the Character A manipulation on perceptions of Character B in Act 3, where there was no indirect effect in the negative relationship condition whereas a positive indirect effect emerged in the positive relationship condition.

Turning toward the second half of the model (i.e., Act 4), several notable patterns emerge. First, across both conditions, I found that (a) moral perceptions of Character A in Act 3 positively predicted moral perceptions of Character A in Act 4 (supporting H9 and H16), (b) moral perceptions of Character B in Act 3 positively predicted moral perceptions of Character B in Act 4 (supporting H10 and H17), (c) moral perceptions of Character A positively predicted moral perceptions of Character C (supporting H13 and H20), and (d) moral perceptions of Character B positively predicted moral perceptions of Character D (supporting H14 and H21). Broadly, these results again support both ADT and character interdependence. With respect to ADT, these findings suggest preexisting moral perceptions of a character have a strong positive effect on later moral perceptions of the same character in the narrative, especially in a context where no new behavior is introduced. With respect to character interdependence, these findings suggest there is assimilation occurring between the main characters (e.g., Characters A and C) and their respective side characters (e.g., Characters C and D) when they hold a strong positive relationship with one another in the character network (i.e., being described as spouses).

Figure 16

Results of Hypothesized Path Model for Character Morality in Study 7



Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Bracketed values represent the lower and upper confidence intervals of each estimate.

Interestingly, however, several patterns contrary to my predictions emerged from the second half of the model as well. Specifically, I found that (a) moral perceptions of Character B in Act 3 had no impact on moral perceptions of Character A in Act 4 (refuting H11 and H18), (b) moral perceptions of Character A in Act 3 did not impact moral perceptions of Character B in Act 4 in the negative relationship conditions but positively predicted moral perceptions of Character A in Act 4 in the positive relationship condition (refuting H12 but supporting H19), and (c) there was a positive significant correlation between the moral perceptions of Characters C and D (refuting H15 but supporting H22). These results demonstrate mixed support for character interdependence. Despite some of the paths supporting my predictions (H19 and H22), the results of the model, specifically in the negative relationship condition, indicate that the moral perceptions of Character A and Character B were not directly impacting one another to the degree I anticipated. In other words, while there was some assimilation occurring between these two characters in the positive relationship condition, these characters seemingly were not directly contrasted with one another in the negative relationship condition.

In a similar vein, the correlation between moral perceptions of Characters C and D was positive in both relationship conditions, which was also unexpected. Although I expected this finding in the positive relationship condition due to character assimilation, I did not anticipate the same finding in the negative relationship condition given these characters should have been contrasted with one another because of the relationship manipulation. A possible explanation for this finding is that, despite the relationship held between Characters A and B and the assimilation that occurred between the main characters and their respective side characters, characters who are less central to the story (e.g., Characters C and D) may have their moral perceptions broadly assimilated simply because they have less relevance to the main conflict and overall story.

Second, I again found significant indirect effects of the Character A manipulation on perceptions of Characters A and B in Act 3 and perceptions of Characters A, B, C, and D in Act 4. These results are largely in the expected direction based on the relationship manipulation and thus support character interdependence. In the negative relationship condition, the model demonstrated that the Character A manipulation had (a) significant positive indirect effects on moral perceptions of Character A in Act 3 and Characters A and C in Act 4, (b) no indirect effect on moral perceptions of Character B in Act 3, and (c) significant negative indirect effects on moral perceptions of Characters B and D in Act 4. Despite the null effect on moral perceptions of Character B in Act 3, these results support the predictions of character interdependence, as the moral perceptions of characters who aligned with Character A (e.g., Characters A and C) were positively predicted by the Character A manipulation, while the moral perceptions of characters who opposed Character A (e.g., Characters B and D) were negatively predicted by the Character A manipulation. Likewise, in the positive relationship condition, the model demonstrated that the Character A manipulation had significant positive indirect effects on Characters A and B in Act 3 and on Characters A, B, C, and D in Act 4. These results also support character interdependence, as the moral perceptions of all four characters assimilated around Character A due to the fully positive character network. Taken together, these results demonstrate that, although there was mixed evidence of character interdependence when evaluating the direct effects of character interdependence throughout the model, I still found strong evidence of character interdependence, specifically when assessing how the Character A manipulation indirectly impacted perceptions of all four characters within the character network.

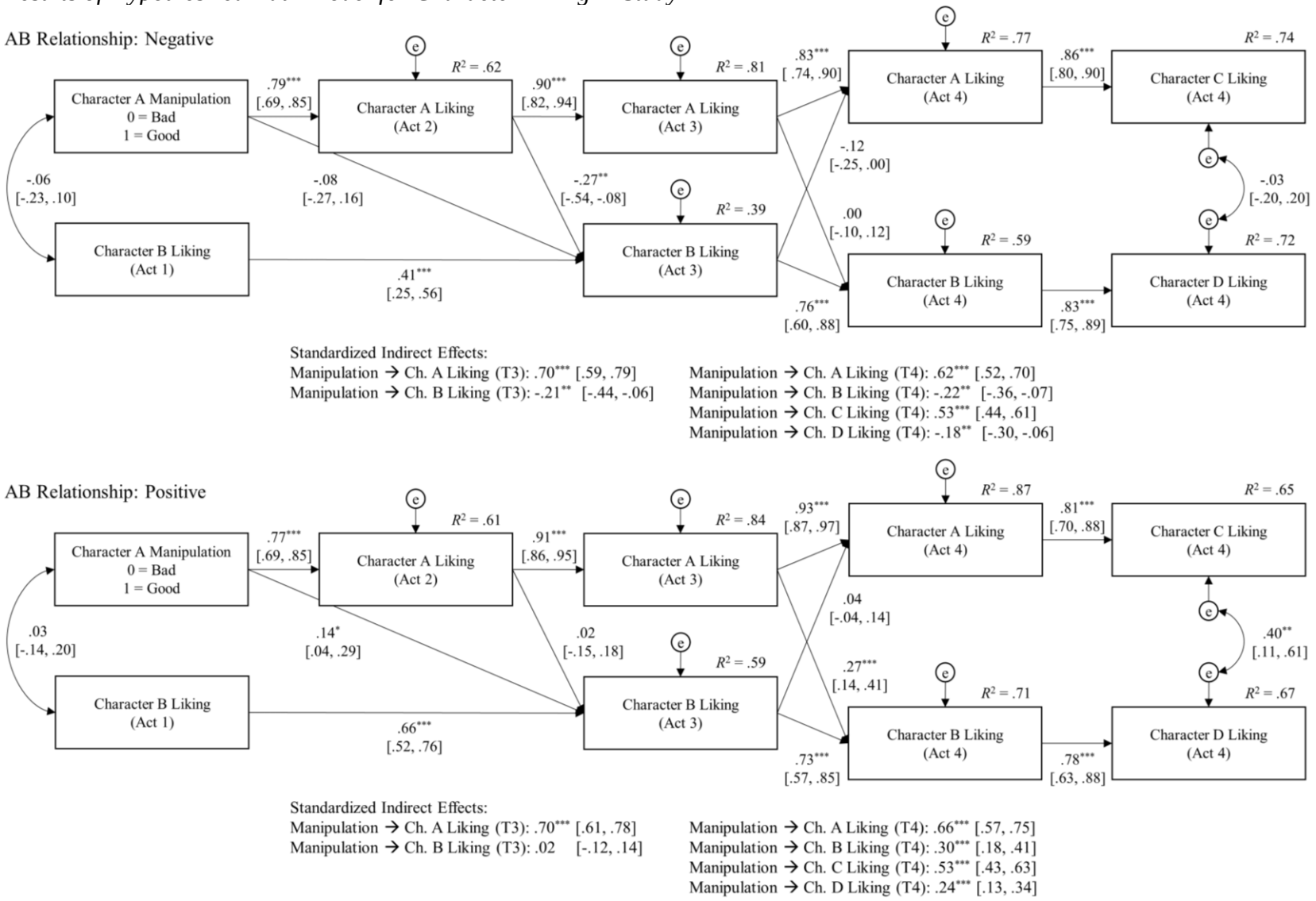
Third, the effects of RQ1 and RQ2 were replicated in Study 7. To reiterate, these findings demonstrate that moral perceptions of Character B in Act 1 positively predict moral perceptions

of Character B in Act 3 and are likely a function of anchoring given no moral information about Character B's morality is explicitly provided by the narrative. Finally, Study 7 also demonstrated that substantial amounts of variance were explained in the moral perceptions of all four characters across the model (35% to 87% of variance explained in the moral perceptions of the characters). Again, these results support the predictions of both ADT and character interdependence, as large portions of the moral perceptions of each character were explained by both individual moral information provided about a specific character (e.g., Character A) and how other characters within the story are related to this character (e.g., Characters B, C, and D).

The character liking model fit the data well, $\chi^2(46) = 176.57$, $p < .001$, CFI = .95, RMSEA = .10, SRMR = .06. The model replicated the results of the character liking model in Study 6, with the only distinct difference being that, in the positive relationship condition, there was a direct effect of the Character A manipulation on Character B liking in Act 3 and no direct effect of Character A liking in Act 2 on Character B liking in Act 3. Thus, rather than the Character A manipulation having a fully mediated effect through Character A liking in Act 2, the results demonstrate a direct effect of the manipulation on Character B liking in Act 3 (supporting H7 and refuting H8, rather than the inverse, which was found in Study 6).

Figure 17

Results of Hypothesized Path Model for Character Liking in Study 7



Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Bracketed values represent the lower and upper confidence intervals of each estimate.

The character liking model also largely replicated the results from the character morality model in Study 7. The major differences in the character liking model were (a) a significant direct effect of Character A liking in Act 2 on Character B liking in Act 3 in the negative relationship condition, (b) the previously stated direct effect of the Character A manipulation on Character B liking in Act 3 and the lack of effect of Character A liking in Act 2 on Character B liking in Act 3 in the positive relationship condition, (c) a nonsignificant correlation between Character C liking and Character D liking in Act 4 in the negative relationship condition, and (d) a significant negative indirect effect of the Character A manipulation on Character B liking in Act 3 in the negative relationship condition and a nonsignificant indirect of the Character A manipulation on Character B liking in Act 3 in the positive relationship condition.

Despite these differences, the character liking model explained similar amounts of variance in the liking of each character across the model (39% to 87%) and supports character interdependence through indirect effects. Like the character morality model, the indirect effects of the character liking model were significant and in the expected direction based on the predictions of character interdependence, excluding the indirect effect on Character B liking in Act 3 in the negative relationship condition. In other words, liking of characters functioned similarly to how participants morally perceived characters, where there were positive indirect effects of the Character A manipulation on the characters who aligned with Character A (e.g., Character C in the negative relationship condition and Characters B, C, and D in the positive relationship condition) and negative indirect effects of the Character A manipulation on the characters who were

at odds with Character A (e.g., Characters B and D in the negative relationship condition). Thus, similar to moral perceptions, character liking is assimilated when characters are positively related to one another and contrasted when characters are negatively related to one another.

Lastly, I compared the fit indices between the unconstrained models and the models that held equivalent structural weights to determine whether the negative and positive relationship conditions significantly differed from one another. I found that both the unconstrained character morality model ($\Delta\chi^2[25] = 49.11$, $p < .001$) and the unconstrained character liking model ($\Delta\chi^2[25] = 86.61$, $p < .001$) fit significantly better than their corresponding structural weight models. These results again indicate that the relationship manipulation significantly impacted how each of the models functioned, where the negative relationship condition caused characters to be contrasted with one another and the positive relationship caused characters to be assimilated with one another, as demonstrated by the indirect effects of the Character A manipulation, supporting character interdependence.

Chapter 5. Discussion

In Chapter 4, I demonstrated evidence for character interdependence in the disposition formation process of affective disposition theory across two studies. The data from these studies indicate that both moral perceptions of characters and character liking are influenced by a character network, such that characters who are at odds with one another tend to be contrasted, whereas characters who are aligned with one another tend to be assimilated. Thus, the current study demonstrates support for the notion that character evaluations are not solely determined by features within a single character, as implied by the original ADT model, but rather that the relational network between characters also informs how audiences appraise narrative characters.

These findings elucidate the importance of character interdependence and character networks in audience evaluations and lend credence to the notion that character networks function as a structural element of narrative. Put differently, character networks operate as a building block of narratives, as these networks inform audiences of the social structure that exists within the narrative world. This perceived social structure is subsequently utilized by audiences to contextually evaluate story elements (e.g., characters, behaviors, outcomes). In the current chapter, I highlight the need to consider character networks as a narrative structural element from a narratological perspective. Moreover, I explicate pathways in which character networks can be understood from

other social network theories (i.e., those aside from balance theory) and elucidate how predictions from these theories can be mapped onto character networks.

Understanding Character Networks as a Narrative Structural Element

Narratology—or "the science of narrative" (Todorov, 1969, p. 10)—is a field that was originally conceptualized under the structuralist perspective. The structuralist perspective is defined as the "belief that human lives are not intelligible except through their interrelations. These relationships constitute a structure, and behind local variations in the surface phenomena there are constant laws of abstract structure" (Blackburn, 2008, p. 365). Put simply, the origins of narratology and the study of narratives in general were heavily focused on identifying the "constant laws of abstract structure" or structural features that underlie narrative form broadly. The value of taking the structuralist perspective for this work lies in being able to determine how unique structural narrative elements contribute to the larger communicative system of narrative. Thus, early narratology work focused on isolating key features of the narrative format, examining whether these features were consistently shared among narratives, and predicting how these features impacted audience perception.

Although most contemporary areas of narratology have broken away from structuralist thought and its epistemological rigidity, structuralist influences can be found within seminal narratological work. For example, Propp's (1984) conceptualization of the fabula and syuzhet highlights how both the "chronological ordering of narrative events" (i.e., the fabula; see Bal, 2009, p. 5) and the "organization and presentation of those events" (i.e., the syuzhet; see Cobley, 2014, p. 27) alter how audiences interpret and

understand a story (see Huang & Grizzard, 2022). By adopting a structuralist perspective within media entertainment research, scholars should be able to then identify constituent pieces of narrative form (e.g., Freytag's pyramid; see Freytag & MacEwan, 1900) and quantify how they impact various audience responses (e.g., character evaluations, enjoyment, persuasion).

I contend that character networks ought to be conceptualized as a narrative structural element under the structuralist understanding of narrative. Given characters tend to be considered a narrative structural element through most narrative definitions (see Baldick, 2015), it seems safe to assume that the relationships that these characters hold with one another could also be considered a key feature that underlies narrative format. Moreover, as demonstrated by my results, the relationships provided by character networks can substantially influence how participants perceive and evaluate characters within a narrative via character interdependence. Thus, character networks seem to adhere to contemporary understandings of structural narrative elements, given they are both consistently featured in narratives and impact how audiences understand and evaluate narrative content.

With this in mind, the next step for character network research is to begin identifying different theoretical frameworks that can help explain how character networks are perceived by audiences, given their assumed role as a narrative structural element. One particularly valuable field that may assist in this endeavor is the body of work examining cognitive social structures, or research that examines how individuals perceive social networks. By integrating predictions from theories within cognitive social structure

research, I contend that this work could help inform character network research, as both topic areas focus on how perceptions of a network lead to specific individual responses. Thus, in the next section, I seek not only to highlight the conceptual overlap between cognitive social structures and character networks but also to begin mapping predictions from cognitive social structure models onto character networks.

Integrating Cognitive Social Structures into Narrative Research

Formalized by Krackhardt (1987), cognitive social structures (CSS) synthesize cognitive perception into traditional understandings of social networks and are thus characterized as an individual's perception of the relationships that exist within a social network. Within this body of research, these perceptual networks are compared to conventional metrics of social network analysis (i.e., proxies for objective social networks) to determine how one's perception of their social network diverges from the actuality of the social network. By comparing perceptual and objective networks, CSS researchers have been able to identify a multitude of effects that are caused by the degree of deviation between these two networks (see, Brands et al., 2015; Lee et al., 2020; Neal, 2008).

Although Heider's (1958) balance theory, which has been central to the character interdependence hypothesis (see Grizzard, Francemone, et al., 2020), is considered a foundational theoretical framework within the field of CSS, the CSS perspective is mostly, if not completely, absent from current research studying the effects of character relationships on narrative reception process. The lacuna in the literature is rather peculiar, given how well character networks map onto the CSS framework. Moreover, I suggest

using other CSS paradigms is necessary for character interdependence research, as limiting the study of character interdependence to balance theory may lead to potential problems for future research.

For example, several limitations of balance theory's application can be gleaned from the current dissertation. First, it is likely that balance theory's predictions tend to degrade as the character network becomes more complex. In Study 7, results demonstrated that Characters C and D were still assimilated despite being on opposite sides of the narrative conflict. Whether this result was due to the fact that Characters C and D are more secondary to the narrative has to be investigated more thoroughly, but, nonetheless, the findings demonstrate how balance theory's predictions may not be as strong for specific agents within a character network.

Second, as demonstrated by the differences found in the positive relationship conditions in Studies 1 to 5 and the positive relationship conditions in Studies 6 and 7, the magnitude of a narrative conflict may dilute the effects of character interdependence. When the narrative conflict was framed as a world-ending event, the fully positive character network did not adhere to balance theory's predictions. However, when the conflict was interpersonal, the fully positive character network adhered to balance theory more effectively than the character network with a negative relationship between the two main characters. Again, although future work should investigate how conflict changes perceptions of character networks, this finding suggests that there may be specific narrative contexts that make character interdependence more salient in a viewer's narrative evaluations. By expanding the scope of character interdependence outside of

balance theory, I suggest these contexts can be defined more effectively.

Finally, the results of all seven studies suggest that the rivals condition/negative relationship condition tends to function better than the friends condition/positive relationship condition when examining character interdependence using balance theory. Although this might suggest that explicitly negative information about character relationships might elicit stronger effects of character interdependence, another potential explanation could be that the simplistic categorization of character relationships in balance theory might limit how effectively one can quantify the effects of character interdependence. In other words, by considering various descriptors of social networks like directionality of relationships and density of nodes (i.e., characters) within the network, the effects of character interdependence may be defined more specifically in future research. Again, however, this potential direction would require researchers to investigate character interdependence outside the bounds of balance theory.

In sum, I would suggest future researchers work to potentially uncouple theoretical understandings of balance theory from character interdependence in order to more fully understand how relational networks impact narrative evaluations and effects. Thus, although more basic CSS frameworks (i.e., balance theory) can be beneficial for investigating character interdependence, current understandings of character interdependence may be limited by solely studying this phenomenon through the lens of balance theory given the theory's simplicity.

Given the conceptual overlap between these character interdependence and CSS, I suggest three elements of character networks that would allow the larger CSS paradigm

to be applied in a theory generating manner: the way audiences encounter character networks, the standardization of the narrative experience, and the methods by which character networks are measured. In doing so, I seek to demonstrate why the CSS perspective is a suitable framework for studying character networks.

First, the way in which audiences encounter character networks is functionally a perceptual process. That is, an audience member can only experience character networks through their perception of a narrative. Because character networks are preexisting, closed systems, audiences cannot integrate themselves into these networks. An individual's interpretation and evaluation of character networks are thus completely perceptual. This element of character networks is a direct result of the narrative experience being largely perceptual (van Alphen, 1990), and thus, character networks seem to fit well within the CSS paradigm given its focus on perceptual networks. The CSS paradigm provides theoretical frameworks that can be used to effectively explore the perceptual aspects of character networks.

Second, the narrative experience is standardized across audience members. All individuals who experience a specific narrative do so from the same vantage point. Whether the narrative is told from a first-person or third-person perspective, the viewpoint of a specific story will remain consistent for anyone who engages with the story. Thus, the narrative information used to establish character networks is uniform across all individuals (although it may be interpreted in somewhat distinct manners between individuals). This element is critical because it allows researchers to examine how systematic components of narrative influence the perceptions of character networks.

In other words, scholars can manipulate elements within the narrative and measure how they impact the audience's perceptions. Thus, the CSS paradigm again seems to be an advantageous approach in this case because of its focus on the differences between perceptual and actual networks. Using character networks, researchers can draw upon specific CSS perspectives to examine how changes and interactions within the narrative lead to distinct effects in the perceptions of character networks.

Finally, both the perceptual and objective components of character networks can be measured separately from one another. Perceived character networks can be gauged by using past CSS methodologies (e.g., the roster method; see Krackhardt, 1987) or by utilizing character appraisal theories (e.g., affective dispositions; see Grizzard, Francemone, et al., 2020). The perceptual networks are drawn from the audience's subjective evaluations of narrative characters, while the objective character networks, on the other hand, can be computationally derived through recent advances made in automated script processing (Hopp et al., 2020; Lee & Jung, 2019). This computational methodology combines tools from social network analysis and natural language processing to create a network of characters from a narrative script. Elements like script proximity, dialogue rate, and linguistic tone are utilized to determine where characters fall within a character network. Importantly, this technique can be considered an objective estimate of a character network that can be applied invariantly across narratives and is generally less subjective than human coding. Again, the CSS paradigm seems to be a valuable perspective in this case, as the two types of networks being compared (i.e., perceptual and objective networks) can be measured independently from one another.

Despite the benefit that balance theory has provided as a framework for studying character networks and character interdependence thus far, I offer two additional perspectives from the field of CSS that can also be used to test and more fully refine character networks and character interdependence, namely network-schema and interaction frequency. For each perspective, I describe some unique elements of the framework prior to integrating these ideas into potential research directions for character interdependence and character networks.

Network-schema

Network-schema (De Soto et al., 1968) are the heuristics or patterns of a social network that people rely on to make sense of social interactions. Network-schema provide mental shortcuts that one uses to organize and learn networks more efficiently (e.g., frequency of interaction; Freeman, 1992). Originally, network-schema research identified that social structures are more easily learned when "individuals are grouped by positive relations within group and negative relations between group" (Brands, 2013, p. S84). In other words, people can clearly identify clusters of individuals that maintain positive relationships toward each other and negative relationships toward others. Classifying network members in this way functionally creates a grouping-schema that members rely on to coordinate their social relationships. Moreover, these schemata are relatively easy to learn because of the basic relationship valence that is used to constitute the grouping-schema (i.e., positive and negative relationships). Elements of balance theory are also incorporated in these schemata given the focus on binary relational valence (e.g., balance schema, De Soto, 1960).

Network-schema research has also incorporated individual or member-schema into the learning of social networks. Initially, this work demonstrated that schema surrounding individual members are utilized in the creation of grouping-schema (De Soto & Bosley, 1962). For example, findings suggest that individuals can learn larger social networks when familial tags (e.g., uncle, father) were associated with the network (Brashears, 2013), as the tags are used as signals for the larger grouping-schema (e.g., family unit). This notion has been examined using other types of schemata such as gender (Brashears et al., 2016) and kinship (Machin & Dunbar, 2016). Thus, by providing additional contexts about individuals (i.e., schema), network members can organize and learn larger social networks in a more efficient manner.

Finally, network-schema research has demonstrated that individuals rely on structural-schema to "fill" the holes present in their network (Freeman, 1992). In other words, people will believe that ties exist within their perceived social networks to maintain balance (i.e., balance imposition). These ties may not actually exist within the social network, rather individuals create ties among network members that they assume to be related to one another. By utilizing structural-schema, individuals have an additional method of imposing balance in their social networks. Members will assume relationships exist to achieve balance, rather than perceptually adjusting the valence of extant relationships. Importantly, each of these research directions, namely grouping-schema, member-schema, and structural-schema, provide perceptual devices that audiences can use to categorize characters within character networks.

Grouping-schema. Grouping-schema provides a method for audiences to orient

their perceptual character networks. In its original conceptualization, grouping-schema focused on separating groups by the negative relationships that exist between them (De Soto et al., 1968). This idea is akin to the concept of a narrative "metastory." The narrative metastory is defined as the inherent conflict that exists within narrative format (i.e., "good" characters vs. "bad" characters; see Raney & Janicke, 2013). Without conflict, tension will not be created within the narrative, and audiences will lose interest (Abbot, 2002). Thus, conflict is a necessary facet of narrative form. Regarding character networks, audiences utilize the narrative metastory as a grouping-schema (i.e., whether characters align with the protagonist or the antagonist). The metastory fits well within the notion of grouping-schema as that inherent narrative conflict fundamentally fixes a negative relationship between the two major narrative groups (i.e., protagonists vs. antagonists) and thus helps audiences structurally cluster and more easily categorize characters through the relationships they have within a character network.

Member-schema. Individual or member-schema are used to develop larger grouping-schema in perceived networks (Brands & Mehra, 2019; Carnabuci et al., 2018; Lord et al., 2016). The schema that network members depict helps define the bounds of the network's grouping scheme, or what types of clusters exist within the perceived network (Karuza et al., 2016). This process also occurs in the perception of character networks. Audience members rely on individual character-schema to determine what side of the narrative conflict a character will be associated with. For example, if characters depict moral schema, they will likely be categorized as good, and if they depict immoral schema, they will likely be categorized as bad (see Grizzard et al., 2018). By engaging in

this process, viewers are functionally defining the boundaries of their narrative grouping-schema. Moreover, the types of character-schema constitute and define the typology of larger clusters in the network (e.g., "good" character groups versus "bad" character groups). By categorizing what characters fall inside and outside of these schematic groups, viewers are continually refining their perceived character networks. This process shares considerable overlap with existing character effects theories, as an abundance of character effects research has demonstrated that character-schema is vital to character evaluation processes (Raney, 2004; Eden et al., 2015; Grizzard et al., 2018). Thus, member-schema are necessary for both evaluating characters and establishing categorization schemes in character networks.

Structural-schema. Structural-schema is a mechanism that individuals use to establish balance within perceptual networks (Crockett, 1982; Freeman, 1992). Research has demonstrated that structural-schema are used to fill structural "holes" within one's perceptual network (Krackhardt & Killduff, 1999). In other words, audiences will assume there are relationships among members of a perceptual network to achieve balance. This process is likely used in the perception of character networks as well. For example, direct evidence is not necessarily required for an audience to assume there is a negative relationship between a protagonist and an antagonist (see Sherif et al., 1961). Audiences can safely conclude that a negative relationship exists between these two characters regardless of whether that relationship has been explicitly stated. Again, this is a function of the narrative's metastory and previously developed grouping-schema. It is safe to assume that viewers will impose a multitude of character relationships within a perceived

network in order to maintain balance between the character relationships and character evaluations. Importantly, these imposed relationships will likely correspond with the larger grouping-schema that one is using to cluster characters (e.g., narrative metastory). Thus, structural-schema provides a supplementary categorization scheme that audiences can utilize to organize characters within their perceived character network.

In sum, network-schema explicate perceptual processes that audiences utilize to create and structure their perceived character networks. Each of the specific network-schema elucidates different processes that individuals engage in when forming perceived character networks. Moreover, these network-schema focus on different facets of the narrative format (e.g., group conflict, individual characteristics, balance maintenance) and complement current applications of CSS to character networks (i.e., balance theory). By considering each of these schemata within character network research, scholars can determine which of these processes are most dominant during the perception of character networks and how audiences use each of these schemata as the primary mechanism during the creation of perceptual character networks. Moreover, by considering these additional frameworks within the scope of character interdependence, media entertainment scholars can increase the explanatory power and precision of character interdependence predictions through the utilization of these schema-based perspectives.

Interaction Frequency

An additional CSS framework that can be utilized to study character networks is interaction frequency. Past CSS research has demonstrated that individuals group others according to how frequently they interact with one another (Freeman, 1992). Individuals

who interact frequently with one another are grouped together, and those who interact infrequently are separated. These interactions demonstrate the centrality of members within a perceived network (Freeman & Webster, 1994; Simpson et al., 2011). People who frequently interact with others are more central to the network structure than those who do not have frequent interactions with others. Thus, perceived centrality, by means of interaction frequency, is an important element of perceptual networks.

Centrality within a perceived character network is somewhat different, however, and should be understood in two different capacities. The first is similar to the traditional understanding of centrality within the CSS paradigm. Characters who are seen frequently interacting with one another are likely more vital to one's perceived character network structure. Given their influence, these characters also likely have greater sway in network-based character evaluations. The second conceptualization, on the other hand, is a character's centrality to the narrative itself. Considering a character network is functionally tied to a narrative, centrality also indicates how important a character is to the narrative plot and the progression of the story (Jones et al., 2020). Thus, interaction frequency operates as a tool used to develop perceptions of the characters within a character network and their narrative. Characters that have a greater frequency of interaction with others will likely be considered main characters, and those who interact with others less frequently will likely be considered secondary or auxiliary characters. Moreover, the centrality classification creates a sense of hierarchy within a character network, or a designation of which characters are most important to the overall story. Interaction frequency thus provides a hierarchical order that can be used to determine

character centrality within the network. Put differently, interaction frequency is a ranking method that audiences may draw on when ordering characters within their perceptual network. This hierarchy is then assessed alongside the relational valence of balance theory and can be used to create network-schema.

Interaction frequency should affect a perceived character network in two ways. First, characters seen frequently interacting with other characters are likely going to be most central to the story. These characters will be the most influential within the perceived character network (i.e., the most central nodes). Second, interaction frequency can elucidate the strength of relationships that exist between multiple characters. The more two characters interact with one another, the stronger their perceived relationship will be. Importantly, relationship strength can be determined separately from relationship valence, which is determined through the balance theory perspective. In other words, the frequency of interaction (i.e., strength) is not contingent upon the type of interaction (i.e., valence), and vice versa. Relationship strength will likely be viewed in tandem with valence to contextualize the relational ties that exist between characters.

Both elements are critical to the structuring of a viewer's perceived character network. First, interaction frequency helps viewers identify which characters are most central to their perceived network structure. By seeing how frequently specific characters interact with each other, audiences can determine the proximity of each character and how close or distant characters are from one another in the network. Second, interaction frequency identifies the strength of the relationship between the characters. By using these two elements, the frame of a perceived character network can be identified. That is,

understanding where each character falls within the network and how closely related they are to one another. By incorporating the valence element of balance theory, this will also help audiences recognize where the main narrative conflict lies in their perceived network. Audiences will likely conclude that the strongest, negative relationship that exists between two central characters drives the narrative conflict. Thus, interaction frequency ought to be considered in perceptual character network processes as it can be utilized to provide more relational context to one's perceived character network.

Limitations

Of course, the current work is not without limitations. First, although the results of both studies demonstrate support for character interdependence, the character network that was created was relatively simple (i.e., a two-to-four-character network). The purpose of utilizing a simple network was to be able to make predictions that coincided with balance theory. However, it is unlikely that most real-world narratives utilize such a simple character network in their stories. Thus, future work should aim to develop other methodologies for measuring and testing larger character networks and how they are influenced by character interdependence. For example, by employing some of the previously discussed computational methods for creating character networks (see Hopp et al., 2020), larger character networks can be tested and evaluated in experimental settings. Scholars can utilize these methods to directly compare computationally derived networks with perceived networks and determine the extent to which they predict central narrative evaluation outcomes (i.e., enjoyment and appreciation).

Second, particularly regarding Study 2, I experienced a substantial amount of

participant attrition (~68%). The dropout of these participants was primarily because of incorrect responses to basic attention checks. Despite the results of the models tested in Study 2 largely replicating Study 1 and supporting the predictions of character interdependence, the quality of this data is still lower than one would hope. For instance, when examining some of the confidence intervals surrounding the betas included in the model, I found that these were drastically big for standardized estimates (i.e., confidence intervals spanning an absolute difference of .50). Thus, future work should aim to replicate this study with a larger more attentive sample to gain more specified and accurate estimates for the betas included within my hypothesized models.

Conclusion

The results of the current study demonstrate support for character interdependence in narrative evaluations. Across seven total studies, I demonstrated that perceptions of a single character ripple throughout a character network, such that that these perceptions bleed into evaluation of other characters based on how they are related to one another. This finding is largely absent from most media entertainment theories and indicates the importance of considering character networks in narrative evaluation processes. I suggest that other social network perspectives (i.e., cognitive social structures) should be integrated into this type of narrative research, as these frameworks may help specify how character interdependence and character network can influence a multitude of narrative outcomes. Thus, future character network and character interdependence research should focus on refining the predictions of the character interdependence by employing the cognitive social structures paradigm.

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Appendix A. Narrative Stimuli for Studies 1 to 5

Stimuli for Studies 1-3:

Super Caldera – Plot Summary

Volcanologists from all over the world are trying to understand the Yellowstone Super Caldera—a massive underground volcano that is a ticking time bomb. When this caldera explodes, 90% of the U.S. will be covered in ash, and tens of millions of people will lose their lives. Fame and fortune will go to the scientist who first figures out how to cool the budding terror below the U.S. landmark.

Two scientists, Harry Dalton and Mike Roark, are on the cusp of solving this potential ecological disaster. Both Harry and Mike are the two most well-known scientists in the field, and they have been competing with each other since their grad school days at MIT. Following grad school, both have been devout in their study of volcanology. However, Harry has been so devoted to his work that he

- **Character A Immoral Condition** – has purposefully destroyed young scientists' careers, abandoned his children, and done mind-enhancing drugs to gain a competitive edge in his research. Many think that Harry has even falsified his data to get his research funded.
- **Character A Moral Condition** – has donated millions of dollars and resources to young scientists and up-and-coming volcanologists. Many think that Harry has even given ideas away to help others get ahead.

Both Harry and Mike have developed a device that will be able to take direct readings of the compositional make-up of lava during an eruption. These devices will work even in the hottest and most intense eruptions. Many of the features of these machines are linked directly to classes both Harry and Mike took while attending MIT, resulting in nearly identical designs. Once they are tested on a smaller eruption, they can be perfect to solve the mysteries of the Yellowstone Super Caldera. But testing volcanic devices isn't easy OR SAFE! In order to test their devices, they'll need a slow moving lava flow so they can get in, take samples, and retrieve their devices after testing.

Both Harry and Mike are attending the International Summit of Geologists. This monumental event takes place every year in Washington D.C. and hundreds of the United States' top geologists, geophysicists, environmental scientists, and volcanologists are in attendance.

While at the summit, Harry and Mike both realize that an upcoming seismic event would allow for them to test their device and gather valuable data for perfecting it. A rare, slow moving lava release is predicted to occur in the mountain ranges outside Salt Lake City in the next two weeks. The event will lead to the release of a lava dome near the mountain range of Salt Lake City. Both characters realize this is the perfect event to test their machines, as the heat and intensity of the lava flow will mirror the conditions of Yellowstone's Super Caldera, and its slow speed will allow for them to retrieve their devices, if they're fast enough.

Following the presentation, Harry passes Mike while exiting the room.

"Hello, Mike," says Harry.

"Harry, you're looking rather… exhausted." Mike quickly responds.

"Well, being the top volcanologist in the field isn't easy," Harry rebuts.

"Yes, I know that feeling quite well, especially once I use my device to solve the Caldera crisis," Mike confidently replies.

Harry grins and says, "That's assuming that I don't beat you to it, Mike."

"Well, I'll see you in Salt Lake then!," Mike exclaims before storming out of the room.

- **Character C Present Condition** – Witnessing the tense encounter is Jonas Miller, a new graduate student from Stanford University and an emerging volcanologist. Jonas has longed to meet and work with Mike, as they both completed their undergraduate degrees at Oregon State University. Following Harry and Mike's argument, Jonas approaches Mike and offers to assist in any way he possibly can. Mike explains his strategy in utilizing the Salt Lake City lava flow to test his newest device and how it will provide enough data to solve the Super Caldera crisis. Enthralled with the offer, Jonas gladly accepts and they both exchange contact information and plan to meet in Utah. With Jonas's assistance, Mike can now collect the required equipment and resources twice as quickly as Harry.

Each volcanologist arrives in Salt Lake City a week prior to the seismic event. This gives both scientists enough time to prepare their devices for the upcoming test once the lava flow begins. The movie climaxes with both scientists racing towards the lava flow with their devices.

Stimuli for Study 4:

Super Caldera – Plot Summary

Volcanologists from all over the world are trying to understand the Yellowstone Super Caldera. When this caldera explodes, 90% of the U.S. will be covered in ash, and tens of millions will lose their lives. Fame and fortune will go to the scientist who first figures out how to cool the budding terror below the U.S. landmark.

- **Rivals Condition** - Two scientists, Harry Dalton and Mike Roark, have been fierce competitors since their grad school days at MIT. Both Harry and Mike are the two most well-known scientists in the field, and each is on the cusp of solving this potential ecological disaster.
- **Friends Condition** - Two scientists, Harry Dalton and Mike Roark, have been close friends since their grad school days at MIT. Both Harry and Mike are the two most well-known scientists in the field, and each is on the cusp of solving this potential ecological disaster.

Following grad school, both have been devout in their study of volcanology. However, Harry has been so devoted to his work that he

- **Character A Immoral Condition** – has purposefully destroyed young scientists' careers, abandoned his children, and done mind-enhancing drugs to gain a competitive edge in his research. Many think that Harry has even falsified his data to get his research funded.
- **Character A Moral Condition** – has donated millions of dollars and resources to young scientists and up-and-coming volcanologists. Many think that Harry has even given ideas away to help others get ahead.

Harry and Mike have each developed their own device that will be able to take direct readings of the compositional make-up of lava during an eruption. These devices will work even in the hottest and most intense eruptions. Many of the features of these machines are linked directly to classes they took while attending MIT, resulting in nearly identical designs. Once they are tested on a smaller eruption, they can be perfected to solve the mysteries of the Yellowstone Super Caldera. But testing volcanic devices isn't easy OR SAFE! In order to test their devices, they'll need a slow moving lava flow so they can get in, take samples, and retrieve their devices after testing.

Both Harry and Mike are attending the International Summit of Geologists. This monumental event takes place every year in Washington D.C. and hundreds of the United States' top geologists, geophysicists, environmental scientists, and volcanologists are in attendance.

While at the summit, Harry and Mike both realize that an upcoming seismic event would allow for them to test their device and gather valuable data for perfecting it. A

rare, slow moving lava release is predicted to occur in the mountain ranges outside Salt Lake City in the next two weeks. The event will lead to the release of a lava dome near the mountain range of Salt Lake City. Both characters realize this is the perfect event to test their machines, as the heat and intensity of the lava flow will mirror the conditions of Yellowstone's Super Caldera, and its slow speed will allow for them to retrieve their devices, if they're fast enough.

Following the presentation, Harry passes Mike while exiting the room.

"Hello, Mike," says Harry.

"Harry, you're looking rather… exhausted." Mike quickly responds.

"Well, being the top volcanologist in the field isn't easy," Harry rebuts.

"Yes, I know that feeling quite well, especially once I use my device to solve the Caldera crisis," Mike confidently replies.

Harry grins and says, "That's assuming that I don't beat you to it, Mike."

"Well, I'll see you in Salt Lake then!," Mike exclaims before leaving the room.

Witnessing the encounter is Jonas Miller, a new graduate student from Stanford University and an emerging volcanologist. Jonas has longed to meet and work with Mike, as they both completed their undergraduate degrees at Oregon State University. Following Harry and Mike's discussion, Jonas approaches Mike and offers to assist in any way he possibly can. Mike explains his strategy in utilizing the Salt Lake City lava flow to test his newest device and how it will provide enough data to solve the Super Caldera crisis. Enthralled with the offer, Jonas gladly accepts and they both exchange contact information and plan to meet in Utah. With Jonas's assistance, Mike can now collect the required equipment and resources twice as quickly as Harry.

Each volcanologist arrives in Salt Lake City a week prior to the seismic event. This gives both scientists enough time to prepare their devices for the upcoming test once the lava flow begins. The movie climaxes with both scientists racing towards the lava flow with their devices.

Stimuli for Study 5:

Super Caldera – Plot Summary

Volcanologists from all over the world are trying to understand the Yellowstone Super Caldera—a massive underground volcano that is a ticking time bomb. When the caldera explodes, 90% of the U.S. will be covered in ash, and tens of millions of people will lose their lives. Fame and fortune will go to the scientist who first figures out how to cool the budding terror below the U.S. landmark.

Two scientists, Harry Dalton and Mike Roark, are on the cusp of solving this potential ecological disaster. As their careers advanced, they each developed a reputation as one of the best scientists in the field of volcanology. Notably, Harry and Mike

- **Negative Relationship Condition** – have been bitter enemies since their grad school days at MIT. They hate each other so much that they make it a point to avoid one another when attending international volcanology conferences.
- **Positive Relationship Condition** – have been the best of friends since their grad school days at MIT. They like each other so much that they make it a point to hang out with one another when attending international volcanology conferences.
- **No Relationship Condition will not include any information here.**

Despite each of their reputations as top scientists, Harry and Mike have taken very different directions throughout their careers. Both have been devout in their study of volcanology; however, Harry has been so devoted to his work that he

- **Character A Immoral Condition** – has purposefully destroyed young scientists' careers, abandoned his children, and done mind-enhancing drugs to gain a competitive edge in his research. Many think that Harry has even falsified his data to get his research funded.
- **Character A Moral Condition** – has donated millions of dollars and resources to young scientists and up-and-coming volcanologists. Many think that Harry has even given ideas away to help others get ahead.

Now, Harry and Mike have each developed their own devices that will be able to take direct readings of the compositional make-up of a volcano prior to an eruption. These devices will work even in the hottest and most intense eruptions, and many of the features of these machines are linked directly to classes both Harry and Mike took while attending MIT, resulting in similar designs. Each scientist hopes to test their device on a smaller volcano, so they can show that it works and further perfect the design to solve the mysteries of the Yellowstone Super Caldera. But testing volcanic devices isn't easy OR SAFE! In order to test their devices, they'll need an eruption with a slow-moving lava flow so they can get in, take samples, and retrieve their devices before the main eruption. Both Harry and Mike will present their plans to the International Summit of Geologists to have it evaluated by other scientists. This monumental event takes place every year in

Washington D.C., and the world's top geologists, geophysicists, environmental scientists, and volcanologists are in attendance.

While at the summit, Harry and Mike are attending the same session and realize that an upcoming seismic event would be perfect for them to test their devices. A rare, slow moving lava release is predicted to occur in the mountain ranges outside Salt Lake City in the next two weeks. This lava release is the perfect event to test their machines, as the heat and intensity of the lava flow will mirror the conditions of Yellowstone's Super Caldera. In addition, its slow speed should allow them to retrieve their devices—if they're fast enough.

Also attending the conference is Jonas Miller, a new graduate student from Stanford University and an emerging volcanologist. Jonas has longed to meet and work with Mike, as they both completed their undergraduate degrees at Oregon State University. Following the session, Jonas approaches Mike and offers to assist in any way he possibly can. Mike explains his strategy in utilizing the Salt Lake City lava flow to test his device and asks Jonas for his help. Enthralled with the opportunity to work with his idol, Jonas gladly accepts and make plans to meet in Utah.

Harry and Mike, with Jonas in tow, arrive in Salt Lake City a week prior to the seismic event. This gives both scientists enough time to prepare their devices for the upcoming test once the lava flow begins. As the eruption begins, both scientists begin racing towards the lava flow with their devices…

Appendix B. Narrative Stimuli for Studies 6 and 7

Plot Synopsis: *Overcoming Resistance*

Exposition

In 1954, the US Supreme Court ruled that racial segregation in schools was unconstitutional. Despite this ruling, many southern states tried strategies to circumvent the Supreme Court's ruling. One state that stood out in its resistance to racial desegregation was Virginia, where powerful politicians enacted laws and even shut down school systems to prevent desegregation. These legal maneuvers to thwart racial justice became known officially as the "Massive Resistance." The current story takes place during the Massive Resistance and centers on a school that has yet to desegregate.

Act 1

It's August 1964, and the new school year is right around the corner. James Bradshaw—or Mr. B to his students—is the 11th grade English teacher at Southampton School. In addition to teaching, Mr. B also helps the athletics department by acting as the assistant coach to the track team. Mr. B can't wait to get back into the classroom after a relaxing summer. But he knows that the new school year might bring some new challenges. The school's previous head coach for the track team has retired, and who knows how Mr. B and the new track coach, Coach Anderson, will get along.

Act 2

Light from the early morning sun poured in, bathing Coach Anderson's office in a warm glow. He was unpacking all his trophies and awards that he brought with him from his former school. He got fired from his last job… but it wasn't because he was a bad coach. He had three state championship trophies to prove he was one of the best track coaches in the state. He got fired because of his beliefs.

- **Character A Moral:** You see, Coach Anderson wanted to desegregate his track team. He didn't see any reason why the color of a runner's skin mattered. He had had heated conversations with the administration of his former school about how he wouldn't allow Virginia's politicians prevent him from recruiting students of color. As soon as he made his feelings known, that was it. He had to pack up and find a new place to coach.
- **Character A Immoral:** You see, Coach Anderson refused to desegregate his track team. He believed that the color of a runner's skin mattered. At least to him.

He had had heated conversations with the administration of his former school about how he wouldn't allow the Supreme Court to tell him he had to recruit students of color. As soon as he made his feelings known, that was it. He had to pack up and find a new place to coach.

The hiring committee at Southampton School was not aware of why Coach Anderson left his previous school. They just knew he had a winning record, and they needed a new track coach for the upcoming season.

It was almost 9am and Coach Anderson had just finished setting up his office. As he walked out of his office and began his walk to the main building, he started to smile. The school year was almost here, and he was looking forward to meeting the rest of the teachers at the first faculty meeting, which was starting in just a few minutes.

Act 3

"… and so, we want you to have a great year and will devote as much time as possible to helping you get settled in." Principal Jefferson was droning with platitudes about the joys of teaching at Southampton School. Mr. B had heard this pep talk for 5 years now and could probably recite it word for word. After the meeting was concluded, the faculty were given an opportunity to mingle with one another. Mr. B saw a face he didn't recognize across the room and thought, "That must be Coach Anderson. Better go introduce myself."

As he approached, Coach Anderson and Principal Jefferson were finishing a conversation. "We're so excited to have you join us, Coach. I hope you can bring as many championships to Southampton as you did your previous school."

"I hope so too. There's nothing like the feeling of winning," replied Coach Anderson.

"Oh Coach, this is Mr. B. He is going to be your assistant coach this year."

- **A/B Negative Relationship:** Mr. B reluctantly put out his hand for a handshake. He couldn't describe why, but there was something about Coach Anderson that made him feel uneasy. They chatted for several minutes. After the conversation was over, Mr. B thought to himself, "This is going to be a horrible year. I can tell Coach Anderson and I are complete opposites. We're never going to get along."
- **A/B Positive Relationship:** Mr. B enthusiastically put out his hand for a handshake. He couldn't describe why, but there was something about Coach Anderson that made him feel at ease. They chatted for several minutes. After the conversation was over, Mr. B thought to himself, "This is going to be a fantastic year. I can tell Coach Anderson and I are completely compatible. We're going to get along great."

Act 4

Walking through the front door of his home, Coach Anderson was greeted by Carol, his wife of 10 years. Coach Anderson knew that she would be eager to hear about how his first day went. After sitting down for dinner, Coach began describing his day.

- **A/B Negative Relationship:** "The first day went well. But I got a weird feeling about my new assistant coach. He's been here a while and teaches English. Everyone calls him Mr. B. There's something about him that I really dislike. I think we're going to have a hard time working together," said Coach Anderson.
  "Well, he better know his place and listen," Carol replied. "You are one of the most accomplished track coaches in the state."
  Coach though for a minute. "You're right honey. I'll make sure he doesn't do anything to ruin my team. At the end of the day, what I say goes and he better understand that."
  "Definitely. And he best not act like the last school and try to force you to change how you do things," Carol said encouragingly.
- **A/B Positive Relationship:** "The first day went well. I got a great feeling about my new assistant coach. He's been here a while and teaches English. Everyone calls him Mr. B. There's something about him that I really like. I think we're going to have a good time working together," said Coach Anderson.
  "Well, I'm sure he'll be a great help to you," Carol replied. "You are one of the most accomplished track coaches in the state."
  Coach though for a minute. "You're right honey. I'll make sure I listen to his ideas. At the end of the day, we're both running this team."
  "Definitely. And I'm sure you two will grow even closer if you let him know why you had to leave your last school," Carol said encouragingly.

After they finish dinner, Carol kissed Coach Anderson on the cheek before cleaning off the dinner table. Coach knew he wouldn't have gotten as far as he did without Carol. She always supported his beliefs about his team and knew what to say to make him feel better. Carol firmly believed that Coach's ideals are what made him so successful. After dinner, Coach headed off to work on the track team's practice schedule for the season while Carol finished cleaning up the kitchen.

While Coach Anderson and Carol were having their dinner, Mr. B. was arriving home from work. He found his spouse, Debra, outside working on their garden. Debra knew how anxious Mr. B. was about meeting the new head coach and she was interested to hear how the faculty meeting went. She invited Mr. B. to work on the garden with her. Kneeling down next to Debra, Mr. B. opened up about his interaction with Coach Anderson.

- **A/B Negative Relationship:** "I'm worried about how the season will go. My gut tells me to not trust the new coach. Something about him seems really unnerving, and totally the opposite of me." Mr. B. said.

"That's hard. Do you know why he left his last school?" Debra asked.
"No, not really. It never came up," Mr. B. responded.
"Well, I trust your judgment sweetheart. You have a 6th sense about how people are. Make sure to follow your instinct."

- **A/B Positive Relationship:** "I'm excited about how the season will go. My gut tells me that the new coach is trustworthy. Something about him seems really calming, and totally similar to me." Mr. B. said.
  "That's great. Do you know why he left his last school?" Debra asked.
  "No, not really. It never came up," Mr. B. responded.
  "Well, I trust your judgment sweetheart. You have a 6th sense about how people are. Make sure to follow your instinct."

Throughout their marriage, Debra had always supported Mr. B to the fullest. She trusted his judgments, and if Mr. B. felt a certain way about Coach Anderson, Debra did too. She hoped that the upcoming track season would be good for him, and she was willing to do anything to make him feel at ease.