THE ROLE OF CAUSAL REASONING IN CHILDREN'S SOCIAL INFERENCES ABOUT LEADERS

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2023

THE ROLE OF CAUSAL REASONING IN CHILDREN'S SOCIAL INFERENCES ABOUT LEADERS

Thesis submitted to the

Institute for Graduate Studies in Social Sciences

in partial fulfillment of the requirements for the degree of

Master of Arts

in

Psychology

by

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Boğaziçi University

2023

DECLARATION OF ORIGINALITY

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ABSTRACT

The Role of Causal Reasoning in Children's Social Inferences About Leaders

Attributional processes influence children's status-based attitudes. Children approach high-status individuals more positively when the status is attributed to internal factors. The present aimed to understand the influence of different causal attributions (internal vs. external) on 6-7-years-old and 9-10-years old children's attitudes toward leaders by comparing two leaders who attained equally high statuses due to different causes. Parental education of the children was also examined to understand its role in children's attributional processes and status-based judgments. Children (N = 64) saw two presidents, one of whom became a president due to internal reasons, and one due to external reasons. Children were asked how much they supported presidents and to infer presidents' intelligence and success in their roles. Finally, children were asked whether they expected these presidents to become presidents in different contexts as well. Both younger and older children thought leaders who attained their position due to internal factors (vs. external factors) were more successful and intelligent, and the difference was larger for older children. Older children supported leaders with internal explanations more than leaders with external explanations but younger children's support for the leaders did not differ based on causal attributions. Furthermore, as parental education increased, children tended to support leaders less. Older children thought that leaders who attained their role due to internal factors would be more likely to have a leadership position also in different cities, while younger children were at chance level. Moreover, as parental education increased, children were more likely to attribute less stability to the leadership status of the leaders with external explanations.

Overall, results revealed that children's evaluations of leaders interact with attributional processes and contextual factors throughout their development.

ÖZET

Nedensel Açıklamaların Çocukların Liderler Hakkındaki Çıkarımlarında Rolü

Atıfsal süreçler, çocukların statüye dayalı tutumlarını etkilemektedir. Çocuklar yüksek statünün içsel faktörlere atfedildiği durumlarda yüksek statülü bireylere daha olumlu yaklaşırlar. Bu çalışma, aynı yüksek statüyü farklı nedenlerden dolayı elde eden iki lideri karşılaştırarak farklı nedensel atıfların (içsel ve dışsal) 6-7 yaş ve 9-10 yaş çocuklarının liderlere yönelik tutumları üzerindeki etkisini anlamayı amaçlamıştır. Çocukların atıf süreçleri ve statüye dayalı değerlendirmelerindeki rolünü anlamak için çocukların ebeveynlerinin eğitim düzeyleri ayrıca incelenmiştir. Çocuklar (N = 64) birisi içsel sebeplerden, diğeri de dışsal sebeplerden başkan olmuş iki başkan gördüler. Çocuklardan başkanları ne kadar destekledikleri, başkanların ne kadar zeki ve yaptıkları işte başarılı olduğunu düşükleri söylemeleri istendi. Son olarak, çocuklara başkanların başka yerlerde de başkan olmasını bekleyip beklemedikleri soruldu. Hem küçük hem de büyük çocuklar, liderlerden pozisyonunu içsel faktörlere bağlı olarak elde etmiş olanının (dışsal faktörlere bağlı olana göre) daha başarılı ve zeki olduğunu düşündüler ve bu fark daha büyük çocuklar için daha belirgindi. Büyük çocuklar içsel nedenlerden lider olan başkana daha fazla destek verirken, küçük çocukların liderlere olan desteği nedensel atıflara dayalı olarak farklılık göstermedi. Ebeveynlerin eğitim düzeyi arttıkça çocukların liderlere olan destekleri azaldı. Son olarak, büyük çocuklar, görevlerini içsel nedenlere dayanarak elde eden liderlerin başka bir şehirde de liderlik pozisyonu elde edeceğini düşünürken, küçük çocukların beklentileri şans seviyesindeydi. Ayrıca, ebeveynlerin eğitim düzeyi arttıkça, çocuklar dışsal nedenlerden dolayı lider olan kişilerin statüsüne daha az devamlılık atfetti. Genel olarak, sonuçlar çocukların liderler

hakkındaki değerlendirmelerinin gelişimsel atıf süreçleri ve bağlamsal faktörlerle etkileşim içinde olduğunu göstermektedir.

ACKNOWLEDGEMENTS

First of all, I would like to thank my supervisor, Assoc. Prof. Gaye Soley for her guidance in my academic journey, her feedback, and for her support and understanding in allowing me to explore my research interests. I would also like to thank my committee members, Asst. Prof. Burcu Ünlütabak and Asst. Prof. Nur Soylu Yalçınkaya for their support and contribution to this thesis.

I am thankful to my BCL Family, Mahmut Kurupınar, Özdeş Çetin, Neslihan Oğuz, Oya Serbest, Güneş Öner, Pınar Karan, Simge Ersönmez, Ceren Boynuk. I am genuinely grateful that I've had a chance to do research in such a supportive environment that showed me the importance of companionship to have fun while conducting research. The time I spent getting to know my labmates' creative and colorful minds was truly inspirational.

I am thankful to my best friend, Salih Özdemir, who helped me with almost everything and, importantly, discovering my research interests in explanations and concepts. I feel lucky to know such a fantastic researcher with an incredibly kind spirit.

I am and always will be heartfully grateful to my partner and favorite researcher, Mert Yüksekgönül, for his continuous support, patience, and encouragement. Knowing that he is always there to help and motivate me to do my best has been priceless. Thanks to his incredible mind, our discussions have always fostered my research enthusiasm. I am also grateful to him for making me question Gaussian assumptions and many other statistical tendencies I used to hold.

Lastly, I thank TÜBİTAK for financial funding.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

Status is generally considered as possessing "*privilege or power"* (Kalish, 2013). Members of social groups tend to be quickly arranged themselves by hierarchically based on the magnitude of the power or the privilege they possess (Koski et al., 2015). The reason for such a tendency is that hierarchical organizations serve essential functions for the survival of groups (e.g., Fiske, 2010; Koski et al., 2015). One such function of hierarchies is to maintain successful social interaction and cooperation by defining social roles and dividing labor within groups (e.g., Halevy et al., 2011; Tomasello, 2020). Given the functional importance of hierarchies, it is essential to infer others' relative ranking by detecting status cues within hierarchies (Koski et al., 2015). From early on, children infer the hierarchical structure of the world and represent different dimensions of social status (e.g., Enright et al., 2020; Gülgöz & Gelman, 2017; Terrizi et al., 2020). For example, they agree that people who control the resources, achieve their goals, and give permissions are the ones who are in charge (Gülgöz & Gelman, 2017). Children also go beyond understanding who has higher or lower status. They utilize social status when evaluating others. For example, they expect high-status individuals to be less helpful than low-status individuals (Terrizi et al., 2020), they trust high-status individuals more (e.g., Margoni et al., 2022) or expect high-status individuals to hold greater competency (e.g., Roussos, & Dunham, 2016; Shutts et al., 2016).

One particular identifier of social status is social roles, such as occupational roles (Kalish, 2013; Searle, 1995, 2010). Social roles involve deontic properties such as rights or duties expected to be performed by the members of social role groups

(e.g., Kalish, 2013; Noyes et al., 2021). Around age 4, children can understand that social roles possess deontic properties (e.g., Foster-Hanson & Rhodes, 2019). However, social roles, specifically occupational roles, differ depending on the power and the prestige they provide to their occupiers (Gottfredson, 1981; Searle, 1995, 2010; Stockard & McGee, 1990). In this regard, compared to informal occupations (e.g., farmers), formal occupations that are connected to institutions assign legitimate deontic powers (e.g., authorized rights, duties, privileges) to their members (Noyes et al., 2021; Searle, 1995, 2010). Around age 6, children expect that only those people with relevant occupations (e.g., judge) can perform relevant institutional actions by virtue of their status (e.g., punishing rule breakers), (Noyes et al., 2020). Moreover, occupations also serve as a source of prestige for those who attain them (e.g., Gottfredson, 1981; Stockard & McGee, 1990; Walker & Tracey, 2012). Around 5 years of age, children understand status differences between occupations (McGee & Stockard,1991; Weisgram et al., 2010). For example, they attribute higher status to occupations like the President of the United States or judge, than occupations like mail carrier or elevator operator (Weisgram et al., 2010).

The presidency role is regarded to be one of the most prestigious occupations (Bigler et al., 2008). Societies have sophisticated institutional hierarchies, including many versions of presidency roles such as the president of a country, a school, or a club. Yet, children's understanding of the presidency role has not been extensively studied except a few works (e.g., Bigler et al., 2008; Patterson et al., 2019; Santhanagopalan et al., 2022). These studies showed that around age of 5, children understand the concept of president (e.g., Bigler et al., 2008; Santhanagopalan et al., 2022). Further, children hold expectancies about who is going to be a president. For example, 5-10 years old children expect White students to hold the president position

in a class (Santhanagopalan et al., 2022). Even though competence is rated as one of the essential qualities of a president (Kinder et al., 1980; Fiske et al., 2007), and children generally view high status individuals as competent (e.g., Roussos, & Dunham, 2016; Shutts et al., 2016), it is unknown whether children would expect every president to be successful in their roles regardless of how they achieved presidency.

Status is a broad concept with a multicausal structure. Namely, there could be a multitude of underlying reasons why an individual attained their status. For instance, there can be internal causes (e.g., being hardworking) or external causes (e.g., having access to good schools) that determine how people attain their social status (e.g., Browman et al., 2019; Hussak & Cimpian, 2015; Laurin et al., 2019). Importantly, underlying causes of social status can be identified early in development (e.g., Hussak & Cimpian, 2015; Peretz-Lange et al., 2021; Rizzo et al., 2020). A few developmental studies explored the causal reasoning of social status and its social consequences by focusing on dominance-based hierarchies (e.g., winning or losing) or economic hierarchies (e.g., having less or more resources) (e.g., Hussak & Cimpian, 2015; Peretz-Lange et al., 2021; Rizzo et al., 2020). Their findings show that children, around age 5, can represent both internal and structural causes of social status and shape their judgments accordingly (e.g., Hussak & Cimpian, 2015; Peretz-Lange et al., 2021). In particular, the literature shows that causal reasoning of social status might influence children's friendship, resource allocation, and fairness decisions (e.g., Hussak & Cimpian, 2015; Peretz-Lange et al., 2021; Rizzo et al., 2020). For example, children prefer to be friends with high-status individuals if the underlying cause of high status is internal (Peretz-Lange et al., 2021).

While it is known that children understand different causes leading individuals to gain status (e.g., wealth), whether children can understand that different causes lead people to attain prestigious roles is yet to be investigated. Similar to children's friendship choices based on causes of high-status (Peretz-Lange et al., 2021), causal reasoning of prestigious role attainment might be influential on children's other social judgments as well. For instance, knowing why people become presidents may also be informative about their success in the role or the possibility of their social status mobility. Thus, the current study aims to explore whether causal explanations about how people attain prestigious roles influence children's inferences about these people.

1.1 Development of social status conceptualizations

Among both human and non-human species, social groups tend to be organized into hierarchical structures. The term "hierarchy" states the implicit or explicit status-based ranking of group members within their groups, where some are positioned in higher positions than others across different dimensions (e.g., Fiske, 2010; Halevy et al., 2011; Koski et al., 2015; Magee & Galinsky, 2008). These dimensions can vary from dominance (e.g., Peretz-Lange et a., 2021; Pun et al., 2016; Thomsen et al., 2011) to deontic power (e.g., Searle, 1995; 2020; Stevanovic, 2018). Thus, the general concept is that hierarchies are a product of the differences between individuals' power. The ones with greater power occupy the highest positions (e.g., Henrich & Gil-White, 2001; Koski et al., 2015). The hierarchical structure of the social groups is not only pervasive but also formed spontaneously and quickly (e.g., Halevy et al., 2011; Koski et al., 2015), which suggests a solid preferential bias for this organization type (e.g., Fiske, 1991, 2010; Gruenfeld & Tiedens, 2010; Mazur,

1985). From an evolutionary perspective, the reason for this bias is that hierarchical organization serves critical adaptive value for species' survival by facilitating the group's chances to survive (Fiske, 1991, 2010; Halevy, 2011). Especially allocation of essential resources (Sapolsky, 2005) and defining social roles (Halevy, 2011) are the crucial functions of hierarchical organizations. Given the limited resources such as food, hierarchies provide an organized and effective way to allocate resources (Sapolsky, 2005). Also, members of the social groups show high individual variation in their skills, traits, and knowledge. Therefore, according to Halevy et al. (2011), another essential function of hierarchical organization is to define social roles to allocate workload among group members and consequently promote group functioning. Within organizations, most of the joint tasks require distinction of labor and a high level of coordination. For example, to be completed successfully, a surgical operation (a joint task) in a hospital (an organization) requires the occupation of different social roles (e.g., surgeon vs. nurse) with diverged status levels (e.g., different levels of authorizations). Thus, hierarchically differentiating social roles and labor division facilitates efficient social interaction and coordination within groups and organizations (Halevy et al., 2011). Given the omnipresence and adaptive importance of hierarchies, the ability to encode social status cues and draw status-based inferences becomes a fundamental social skill.

From very early on, humans can detect appearances, behaviors, and traits as cues that convey status. These cues can be roughly separated into perceptual and knowledge-based status cues (Halevy et al., 2011). Children can detect both perceptual status cues, including group size (Pun et al., 2016), physical proportions of individuals (Thomsen et al., 2011), and knowledge-based status cues, including prestige (e.g., Kajanus et al., 2020; Margoni et al., 2022), decision-making power

(e.g., Enright et al., 2020; Gülgöz & Gelman, 2017) and wealth (e.g., Enright et al.,2020; Gülgöz & Gelman, 2017; Li et al., 2014; Shutts et al., 2016). Children's sensitivity to perceptual status cues develops earlier, around first age (e.g., Pun et al., 2016; Thomsen et al., 2011). Pun et al. (2016) demonstrated that infants around 6 months of age could represent a dominance-based hierarchy based on the group size of agents. In particular, when infants were presented with two agents with competing goals, they were more surprised when the agent from the small group won, suggesting that they expected members of larger group to prevail (Pun et al., 2016). Children's conceptualization of social status becomes complex in the following years. They become tuned into less salient knowledge-based cues, including giving orders, possessing valued skills, achieving goals, and forcing opinions (e.g., Enright et al., 2020; Gülgöz & Gelman, 2017; Kajanus et al., 2020). Around age of 2, children start to recognize authority figures who give orders, and they can distinguish different type of authorities by looking at how they give the orders (Margoni et al., 2018). In Margoni et al. (2018), 21 months old children were presented with either respected authority who gave an order to subordinates without harming them or fear-based authority who gave an order to subordinates by hitting them. Children who saw the respected authority figure, expected subordinates to obey the order even if the authority was no longer present. However, children who saw the fear-based authority figure did not hold any obedience or disobedience expectation from subordinates when the authority was no longer present. Gülgöz and Gelman (2017) investigated 3- to 9-years-old children's conceptualization of social power in five dimensions: controlling resources, setting norms, giving permissions, achieving goals, and giving orders. Children were presented with two characters for every dimension: one possesses power in a particular dimension while the other does not.

For example, in the resource control dimension, there was one toy, and only one character played with it (high power), while the other character watched (low power). After every scene, children were asked, "Who is in charge?" Findings showed that younger and older children represented controlling resources, achieving goals, and giving permissions as social status cues. However, only older children aged 7- to 9-years-old utilized norm-setting and giving orders as cues to social status. In a similar study, Enright et al. (2020) showed that around the age of 3, children also consider prestige (i.e., performing better) as a cue to social status and infer that a prestigious person is the one who is in charge.

1.2 Children's inferences based on status

In addition to perceiving social status cues, reasoning about others in response to those cues is also critical to maintain the functions of social hierarchies (Koski et al., 2015; Thomsen, 2020). Individuals show apparent variability in the personal traits and knowledge they possess. Hence when deciding whom to learn from, ask for help, or be friends with, it is crucial to choose the ones with the most appropriate characteristics or knowledge. From an early age, children begin using status cues such as wealth (e.g., Sigelman, 2012; Shutts et al., 2016), authority (e.g., Gülgöz & Gelman, 2017; Terrizi et al., 2020), prestige (e.g., Enright et al., 2020) to make inferences and to guide their preferences and learning. When evaluating others, children draw social inferences about competence (e.g., Sigelman, 2012; Shutts et al., 2016; Roussos, & Dunham, 2016), prosociality (Terrizi et al., 2020), and niceness (e.g., Terrizi et al., 2020; Yang & Dunham, 2022) from the status cues they encounter. For instance, Shutts et al. (2016) found that when 4- and 6-years-old children were presented with wealth cues (e.g., houses, possessions) they expected

individuals who were associated with high-status wealth cues to be have greater academic success than individuals with the lower-status cues. Terrizi et al. (2020) conducted two experiments to investigate whether children infer status from individuals' behaviors and infer behaviors from individuals' status. In their first experiment, 4- to 7-years-old children and adults were presented with two individuals: one helped someone who needed help while the other did not. Children of all ages and adults thought that the individual who did not provide help was in charge by attributing more authority to an unhelpful individual. However, all participants attributed more niceness to the individual who helped someone in need. In their second experiment, participants were presented with three agents differing in their authority status: one was always in charge, one was sometimes in charge, and the last was never in charge. Then participants were given a scene where someone needed help and asked to infer who would help. Older children aged 6- to 7-years-old and adults, but not younger children, consistently inferred that agents with a high authority would be less likely to provide help (Terrizi et al., 2020).

1.3 Children's decisions based on status

Children also take advantage of status cues when to decide whom to trust (Margoni et al., 2022), which knowledge to endorse (Bernard et al., 2016), whom to be friends with (e.g., Li et al., 2014; Shutts et al., 2016), or whom to share resources with (e.g., Elenbaas & Killen; 2016; Elenbaas et al., 2016; Li et al., 2014). Margoni et al., (2022) investigated whether children selectively trust to authorities depending on the type of authority. In an economic trust game, 4- to 5-years-old and 7- to 8-years-old children were given candies and introduced to a respected leader (who was obeyed without harming others), a bully leader (who gained power by hitting others) and two

neutral characters. Then children were asked to either invest their candies to these characters or keep candies for themselves. According to the results, children's investment decisions differed depending on the authority type and children's age. Younger children were more likely to trust and invest their possessions in respected leader and neutral characters more than the bully leader, whereas older children trusted and invested in only the respected leader (Margoni et al., 2022). Children use social status cues in epistemic trust contexts when evaluating the reliability of the information (Bernard et al., 2016). In particular, in a study by Bernard et al. (2016), when a dominant and subordinate agent provided two different pieces of information about a novel object, 3-to 5-year-old children were more likely to trust the information provided by the dominant agent. Moreover, children consider status cues when choosing whom to affiliate with (e.g., Ahl & Dunham, 2017; Li et al., 2014; Shutts et al., 2016). For example, 4- to 6-years-old children prefer to be friends with children who possess wealth-related cues like new clothes (Shutts et al., 2016), and 4 and 5-years-old children tend to choose to be friends with other children with more resources (Li et al., 2014).

Children's behaviors toward, and evaluations of others by using status cues is not a unidimensional process. Indeed, it is a sophisticated form of reasoning that can vary throughout development depending on the dimensions of social status. For example, children do not always make positive attributions to high-status individuals (e.g., Mistry et al., 2015; Terrizi et al., 2020; Yang & Dunham, 2022), and children's decisions do not always favor high-status individuals (e.g., Elenbaas & Killen, 2016; Elenbaas et al., 2016; Li et al., 2014). Supporting this complex reasoning, Li et al. (2014) found that 4- and 5-years-old children decided to distribute more prizes to low-status individuals who had less playdough than high-status individuals while still

preferring to be friends with high-status individuals. In a similar vein, Yang and Dunham (2022) showed a noticeable developmental trend in children's conceptualization of wealth when making status-based inferences. Their results revealed that when children were around 5 years old, they attributed more positivity to high-status individuals by liking them more, considering them more prosocial and more talented. However, around the age of 7, children's social preferences and evaluations for high-status individuals can start to decrease. In particular, in the same study, when children reached 9 years of age, they no longer showed a preference towards high- or low-status individuals. Strikingly, 9-years-old children hold a pro-poor bias by evaluating low-status people as more prosocial compared to high-status people (Yang & Dunham, 2022). These studies imply that children's conceptualization of social status goes far beyond dividing people simply as high or low status and associating high-status cues with positivity. The nuanced implications of status cues in children's social inferences may offer an insight into their capacity to deeply represent underlying mechanisms of social status (Shutts & Kalish, 2021). In fact, these nuances can lead us to explore the factors and underlying reasoning that lie behind children's social inferential processes.

1.4 Social roles as a class of social status

Social cognition literature commonly conceptualized social status in terms of dominance (e.g., winning or losing) or monetary (e.g., rich or poor) hierarchies. Yet, social status is a broad concept exceeding dominance and monetary relations (Kalish, 2013). One critical subset of social status is social roles. Human civilizations are constructed on countless social organizations such as governmental institutions, universities, or families, each requiring a set of distinct social roles for successful

functioning. Social roles, in the most general sense, are the social positions in social organizations characterizing a group of deontic expectations (i.e., what an individual is ought to or allowed to do, such as duties and rights) from their occupiers (Biddle, 1979; Kalish, 2013; Searle, 1995, 2010). Children, around 3-year-olds can successfully reason about deontic concepts such as rules and obligations and expect others to follow the rules (Clément et al., 2011; Cummins, 1996b). Around age 4, children start associating deontic properties with relevant social role categories, inferring deontic features from social role categories (Foster-Hanson & Rhodes, 2019; Lawson & Kalish, 2008). For example, they expect individuals who belong to specific social role categories (e.g., neighbor, teacher, doctor) to possess relevant deontic properties (i.e., something that person must do) more than psychological properties (i.e., something that person enjoys doing) (Lawson & Kalish, 2008). Children also infer social roles from deontic features. Foster-Hanson and Rhodes (2019) found that 4-5-years-old children think that individuals possessing the deontic obligations of social roles (e.g., supposed to rescue others during fires) are "real and deep down" members of such role categories (e.g., firefighter). These results demonstrate that children around the age of 4 understand social role concepts and can map deontic features onto these concepts (Foster-Hanson & Rhodes, 2019; Lawson & Kalish, 2008).

Social roles encompass a wide variety of different roles. These roles can be classified on a continuum from informal (e.g., family roles, such as father and mother) to formal roles (e.g., occupational roles, such as a doctor or lawyer) depending on the status they assign to their occupiers (Kalish, 2013). For example, informal roles, such as neighbors, do not provide clearly defined legitimized obligations or rights to their occupiers. On the other hand, in the case of formal roles,

there are regulations providing power and permissions, thereby status, to the occupiers of these roles. (Biddle, 1979; Kalish, 2013; Searle, 1995; 2010). Occupational roles also show variance within themselves based on the status they provide to their occupiers. Thus, occupations can provide people with status through deontic power (Searle, 1995; Searle, 2010) or occupational prestige (e.g., Gottfredson, 1981; Stockard & McGee, 1990; Walker & Tracey, 2012).

The concept of deontic power is fundamentally related to institutional rules. According to Searle's *status function theory,* members of specific occupational roles are assigned deontic powers such as privileged institutional rights, authorizations, duties, obligations, or permissions (Searle, 1995, 2010). These occupations endow individuals with legitimized deontic power to perform institutional actions that they could not perform without attaining required occupational positions. For example, a country's president can veto legislation, which cannot be performed without relevant occupation and deontic power (Searle, 2010), or one can pronounce a couple married if only they are a marriage officiant (Noyes et al., 2020). However, other occupations that are not directly connected to institutions are expected to perform actions that do not require deontic power. These actions can be performed by individuals with and without relevant social roles, regardless of their status or power. For example, farmers are supposed to be engaged in farming. However, people who are not farmers can also plant seeds or harvest. Indeed, children around the age of 8 can differentiate social roles comprising institutional vs. standard actions (Noyes et al., 2020). In Noyes et al. (2020), 4- to 9-year-old children were introduced to a community including different social roles with either standard actions (e.g., Wingles who build things) or institutional actions (e.g., Cauters who punish rule breakers). Then, children were told about a change in social roles (e.g., one day, the community

decided that a different group of individuals to be Cauters or Wingles) and asked whether these ex-Wingles or ex-Cauters could perform their social roles. Children around the age of 6 could discriminate standard actions from institutional actions, and after the age of 8, they could robustly distinguish between two actions. To clarify, during elementary school, children think that individuals can continue to perform standard actions even though they are no longer members of the relevant social role category. However, individuals cannot perform institutional actions if they are not members of the relevant social role category (Noyes et al., 2020). These results indicate that during elementary school, children start to conceptualize occupational roles based on deontic power and can discriminate institutional actions from other actions.

The other factor differentiating occupations is the prestige level of the occupations. Occupational prestige simply refers to the social position or status that an individual gains by holding an occupation (Fujishiro et al., 2010; Hauser & Warren, 1997). In turn, social status is the respect and admiration people are afforded based on their occupations (Anderson, 2015). Literature shows that adults use occupational titles as a social status cue (Weeks & Leavitt, 2017) and shape their attitudes accordingly (Goodman & Grais, 1993; Ratcliff et al., 2011). In a study by Goodman and Grais (1993), two individuals, one claimed to be a lawyer and the other one claimed to be a gas station attendant, requested help from others. Results showed that individuals with a lawyer title received far more help than individuals with a gas station attendant title. Ratcliff et al. (2011) showed that participants tend to remember faces more quickly and accurately if the face was matched with high-status job titles (e.g., CEO, judge) than with low-status job titles (e.g., farmer, plumber).

Few developmental study revealed that children around the age of 5 understand that occupations differ in their status (McGee & Stockard,1991; Weisgram et al., 2010). Toward the age of 6, children understand differences in occupational status between social groups based on race (Bigler et al., 2003) and gender (Liben et al., 2001). In a study by McGee and Stockard (1991), 10 years old children thought that the most prestigious jobs (important, admired, and respected) included scientist, judge, and surgeon, and the least prestigious jobs included hairdresser, truck driver, and fast-food worker. In a more recent study by Weisgram et al. (2010), 5- to- 10 years old children and adults rated occupations' value (such as income and decision-making power). All ages rated doctors, lawyers, supreme court judges, and the president of the U.S. as the occupations with the highest income and power. In contrast, participants rated jobs grocery bagger, mail carrier, and elevator operator as the occupations with the least income and power. Children also hold stereotypes regarding high-prestige occupations. For instance, 6- to -12 years old Black children thought that White people were more likely to attain high-prestige occupations (e.g., politician, doctor), whereas Black people were more likely to attain low-prestige occupations (e.g., garbage collector, waiter). Moreover, children rated unfamiliar occupations higher in prestige if White people held the occupations than Black people (Bigler et al., 2003). Similarly, children evaluated masculine occupations (e.g., banker, dentist) as more prestigious than feminine occupations (e.g., nurse, teacher) (Liben et al., 2001).

1.5 The presidency role

Given that occupational roles might signal an individual's social standing in society, the presidency role stands out from other roles as it can be considered the most

prestigious occupation in the world (Bigler et al., 2008). Children around 5 years can successfully comprehend the presidency role (Bigler et al., 2008; Patterson et al., 2019; Santhanagopalan et al., 2022). In an illustrative study by Santhanagopalan et al. (2022), 5- to 10-year-old children were presented with different roles, including president (responsible for the crucial decisions in the class), welcomer (responsible for welcoming others), treasurer (responsible for money for the class), and notetaker (responsible for writing down what others say). Then, children were asked to choose the person to fill the position (varied in race and gender). Results revealed that regardless of age and gender, all children wanted to attain the president role rather than other roles. However, all children chose light skin toned and White people as presidents more than dark skin toned and Black people. Besides, children who were younger than 9 chose their gender as the president, while children older than 9 years old chose boys as the president (Santhanagopalan et al., 2022). These findings might relate to research indicating that children around the age of 5 associate boys with more resources (Charafeddine et al., 2020), and boys and White people with more decision-making power and wealth (Mandalaywala et al., 2020). Similarly, children might perceive the presidency role as a cue for high status from a young age by associating it with group-based hierarchies based on race and gender.

The president figures are abundantly present in many different social contexts and roles and adults expect ideal presidents to be competent (Fiske et al., 2007; Kinder et al., 1980). Nevertheless, the research on children's expectations from or inferences about the president figures is limited (Santhanagopalan et al., 2021; Stavans & Diesendruck, 2021). It has been found that when 5- to 6- years-old-children were introduced to the president role (called the head of the group), they expected leaders to contribute more to the group's common goal. Yet, they do not

view leaders as entitled to take more resources for themselves (Stavans & Diesendruck, 2021). Moreover, in a study, 5- to 10-year-old children from India were presented with different characters who spoke different languages (Tamil, Hindi, Indian-English, or British-English). Then, children were requested to answer the question "who is a better leader?". According to the results, children thought British speakers were better leaders than others, followed by Indian-English speakers and Hindi speakers (Santhanagopalan et al., 2021). These studies reveal that children understand the role of the president, hold presidency stereotypes, and judge leaders' competence based on their language. One of the open questions is, what cues other than language are available to children when they infer presidents' success in their roles?

1.6 Causal reasoning of social status

Even though two individuals may have attained the same occupation or social status and are ranked similarly within their groups, the underlying causes of such ranking may differ. Therefore, *why* some people possess specific social roles might carry critical significance while drawing inferences about the members of such social categories. To explore how children make causal attributions for social status and the social consequences of those attributions, it is essential to understand how they evaluate others and complex social structures. Limited research examined the role of causal mechanisms in the social inferential process of dominance-based status (Hussak & Cimpian, 2015; Peretz Lange et al.,2021; Peretz- Lange & Muentener, 2021; Rizzo et al., 2020; Rizzo & Killen; Rizzo et al., 2022) and only one study investigated the relationship between causal reasoning and occupational roles (Noyes et al., 2021).

According to early causal reasoning literature, at around 10 months, infants can infer the hidden causes of the motion when they observe the spontaneous motion of an object (e.g., Saxe et al., 2005; 2007). Around 24 months, they can infer hidden causes for novel physical events (e.g., a light turned on) (Muentener & Schultz, 2014). However, inferring the causes of social concepts, such as wealth or social roles, can be more complex since the underlying causes of social concepts vary enormously (e.g., Elenbaas et al., 2020; Hussak & Cimpian, 2015; Peretz-Lange et al., 2021). For example, to explain why men outnumber women in high-paid jobs, both internal attributions (e.g., intelligence) and external attributions (e.g., the opportunity gap) can be made (e.g., Amemiya et al., 2022; Haslanger, 2016; Hussak & Cimpian, 2015; Peretz-Lange et al., 2021; Vasilyeva & Lombrozo, 2020). On the one hand, essentialism research has investigated the causal reasoning of social status (Davoodi et al., 2020; Rhodes & Mandalaywala, 2017). According to essentialist construal, individuals who are the members of the same social group (e.g., gender) possess an internal essence (e.g., traits) that causes within-category similarities (e.g., possessing low-paid jobs) (Gelman, 2003). In the domain of social status, the essentialist view may characterize the causes of having low status as individuals' internal deficiencies, such as being less knowledgeable (Peretz-Lange et al., 2021; Peretz-Lange, 2021). Thus, it may foster stereotyping and prejudice against low-status individuals (Rhodes & Mandalaywala, 2017; see Elenbaas et al., 2020, for a review). On the other hand, *the causal discounting framework* claims that essentialist or internal explanations for social status discount external causes of social status. Thus, highlighting the external causes of social status may impact children's status-based stereotype endorsements and decisions (Peretz-Lange, 2021).

Both adults and children have a strong tendency for essentialist explanations and make internal attributions to explain the differences between social categories (e.g., Betz & Kayser, 2017; Cimpian & Salomon, 2014; Sigelman, 2012). This tendency also holds across cultures yet children's essentialist views for social status seems to be less robust than other social categories such as nationality (Davoodi et al., 2020). A cross-cultural study examined 5- to 10-years-old children's and adults' essentialist views for multiple categories including religion, nationality, gender, social status (poor or rich), and support for a sports team (Davoodi et al., 2020). According to the results of this study, among populations in the US and Turkey, children's essentialist beliefs for social status were significantly less than gender, nationality, and religion. Participants' essentialist views for social status did not differ from their essentialist views for supporting a sports team (Davoodi et al., 2020). Results children's low essentialism scores for social status may imply that children incorporate other factors (e.g., external) into their social status concepts. Indeed, research shows that there are a vast number of external factors causing people to attain their positions in the social hierarchy (e.g., Browman et al., 2019; Haslanger, 2016). External causes refer to all types of factors external to the individuals, such as historical events or natural events (e.g., Cimpian & Salomon, 2014; Hussak & Cimpian, 2015). One specific type of external cause is structural causes (e.g., Amemiya et al., 2022; Haslanger, 2016; Vasilyeva & Lombrozo, 2020; Vasilyeva et al., 2018). Structural causes refer to stable institutional practices (e.g., social policies) and cultural beliefs within the social systems that systematically provide an advantage to some part of the society while providing a disadvantage to others (Amemiya et al., 2022; Haslanger, 2016).

Structural causes are prevalent and impose a skew in the distribution of individuals within social hierarchies. Around 6 years, children start to understand information about structural causes lying behind the social outcomes (Vasilyeva et al., 2018) and highlighting structural factors impacts their negative evaluations about others (Dunlea & Heiphetz, 2022). In a study by Dunlea and Heiphetz (2022), 6-to-8 years old children were introduced different individuals who were incarcerated. Children evaluated incarcerated individuals more positively if the underlying cause was structural (not having very much money when growing up) than it was internal (being a bad person) or behavioral (doing something wrong).

Some developmental studies compared the effect of structural vs. internal causal attributions on children's status-based attitudes (e.g., Hussak & Cimpian, 2015; Peretz Lange et al., 2021; Peretz-Lange & Muentener, 2021; Rizzo et al., 2020; Rizzo & Killen, 2020; Rizzo et al., 2022). Among these, Rizzo et al. (2020) investigated 3- to 8-years-old children's behaviors toward resource inequalities originating either from structural causes (gender-based discrimination) or internal causes (merit). Researchers found that children of all ages allocated more resources to those who received less due to their gender and those who received more due to their hard work. These findings show that children tend to rectify social disparities by allocating more resource to disadvantaged individuals if the cause is structural and perpetuate social inequalities by giving more to advantaged individuals if the cause of disparity is internal (Rizzo et al., 2020). These findings claims that children distribute more resources to people with low-status by considering causes of social status during resource allocation (Li et., 2014; Rizzo et al., 2020). Furthermore, causes of social status also shape children's attitudes toward others (Peretz-Lange & Muentener, 2021; Peretz-Lange et al., 2021) and approval of the status quo (Hussak

& Cimpian, 2015). In Peretz-Lange et al., (2021) 5- to 6- and 9- to 10-year-olds and adults watched a novel game that could be won or lost due to either internal causes (citing the physical characteristics of the players) or structural causes (citing the physical characteristics of the game). Participants watched one of the two teams winning, and both internal and structural causes could account for winning. Then, participants were asked about their causal attributions regarding why they thought the winners won the game and whom they wanted to be friends with. Results showed that younger children made more internal causal attributions for winning, older children had no systematic choice, and adults made more structural causal attributions for winning. Both children and adults preferred to be friends with the high-status group only if they made internal attributions to their high status. However, those who considered social status to reflect others' structural advantages did not show such preference.

Husak and Cimpian (2015) explored 5- and 8-year-olds' explanatory biases and support for the status quo. Children were told about status disparities regarding different dimensions of status, such as being rich or boss. Children were presented with either an internal or an external causal explanation for each disparity. Even though researchers did not intentionally define social roles, two of the four status disparities they used were resembling social roles. In one of them, status was conceptualized as being the boss and the internal explanation revealed that one group was always the bosses "*Because they are much better decision-makers and are better at being in charge than the others*" In contrast, the external explanation revealed the reason as "*The town they live in has a lot more office buildings and a lot more jobs for bosses.*" In the other one, status was the working place, one group was working in offices (high-status), while the other group working in farmlands (low status).

Internal explanation cited the reason for that as "*They are better with numbers, and much better at computers.*" External explanation cited that "*The town they live in happens to not have any farmland, and only has office jobs available."* Then children were asked which group they preferred, which group deserved its status and whether it was fair. Children's answers to questions were combined into one composite score to explain their support for the status quo. Results showed that both 5- and 8-year-olds' scores were significantly higher in internal explanations suggesting that they supported the status quo when the underlying reason of status was internal. Notably, older ages did not support the status quo when the underlying reason was external. For example, they did not think that people deserve to work in offices and did not like them if the reason was the structure of their city (Hussak & Cimpian, 2015).

There is no developmental study directly investigating the role of causal reasoning in children's social inferences about occupational role-holders. However, Noyes et al. (2021) investigated whether the way individuals attained their occupations influenced adults' inferences about different features of these individuals (e.g., their deontic obligations, and psychological traits). They compared two causal processes explaining how people attain institutional occupations: intentional membership (i.e., individuals who intentionally pursue the particular occupation as a career and are hired by the company through selection) or random membership (i.e., individuals are hired randomly). Then, participants were asked to infer deontic, functional, psychological, personality and skill-based properties of occupation holders based on causal processes of category membership. According to their results, the selection process is also a robust source for personality and skill inferences. Participants thought that individuals who were intentionally selected for

the role had more typical personality traits and skill of roles compared to those who were selected randomly.

CHAPTER 2

THE CURRENT STUDY

The present study aims to explore whether causal explanations for why individuals attain prestigious occupations (i.e., the presidency) influence children's social inferences about these individuals. Considerable research evidence revealed that adults (e.g., Oldmeadow & Fiske, 2007) and children (e.g., Roussos & Dunham, 2016; Shutts et al., 2016) perceive high-status individuals as more competent. However, it is still unclear whether individuals generalize this high status-competency association to infer individuals' performance in their occupations regardless of how status is achieved. A study done with adult participants (Brescoll et al., 2010) showed that individuals use gender-occupation congruency as a cue to infer people's competency in high-status occupations. Their results showed that individuals who attained high-status and gender-incongruent occupations (i.e., the president of a women's college position for men, the police chief position for women) were seen as less competent when they made a mistake. For children, I expect causes of occupation attainment to serve as a cue for individuals' success in their high-status occupations.

This study presented 6-7- and 9-10-years old children with two cities and the presidents of these cities. The presidents of the cities were responsible for running the city and deciding how to use the city's money. These two presidents attained their roles due to internal (e.g., working hard) or external causes (e.g., financial opportunities). After each president's introduction, participants were asked about their success inferences about the presidents, their support for the presidents, their perceived intelligence of the presidents, and the stability of the leadership status of

presidents. Also, after the individual evaluation of the presidents, participants were presented with the two presidents at the same time and were asked to tell which one of the presidents was more successful at his job.

At the end of the trials, participants were introduced to four different characters to check whether children associate the presidency role with higher status. The characters were two different presidents of two different cities, a notetaker (responsible for writing down what everybody says) and a welcomer (responsible for welcoming people who come to this building). Across two trials, presidents were introduced together with the notetaker or the welcomer. Every trial had a scenario regarding resource control, and children were asked to choose who obtained the resource: the president or the other employee.

This study had three hypotheses. First, children were expected to infer higher success for the presidents with internal explanations, but this tendency was expected to be more robust for older children. Second, children were expected to support the presidents who attained the role due to internal causes the most. Third, older children we expected to predict more status stability in the internal explanation condition. Older children were expected to think that the president with internal explanations would more likely become a president in a different city. However, younger children were expected to think that all presidential figures, regardless of explanations, would become presidents in new cities. This expectation was based on a previous study by Crosby (2001) showing that 8-year-olds, but not 10-to-12-year-olds, expect status to be stable by assuming that rich people will always be rich. There was no prior hypothesis regarding children's intelligence inferences, but given that internal explanations might cause children's social inferences about groups to be more

positive (e.g., Dunlea & Heiphetz, 2022; Peretz-Lange et al., 2021), children could infer greater intelligence for the presidents with internal causes.

Furthermore, parental education was added as an explanatory variable. The reason behind the exploration of parental education was that children's explanations and explanatory biases are not independent of the socio-cultural environment they grow up, including school and family contexts (Flanagan & Tucker, 1999; Goudeau & Cimpian, 2021). Yet, the limited research on how children's life experiences affect their tendency to explain social events reveals inconsistent findings. On the one hand, findings show that high education impacts individuals' explanatory beliefs in a way that they put more emphasis on external factors or less on essentialist thinking. For example, a study by Flanagan and Tucker (1999) found that adolescents whose mothers had higher education, relied on situational causes to explain social problems (e.g., unemployment, poverty). In a more current study by Peretz-Lange et al. (2023), it has been found that university students who completed social science coursework exhibited less essentialist thinking about racial disparities. Also, parents' socioeconomic status was shown to have an impact on 9- to 10- years old children's institutional socialization (Lareau, 2011). According to Lareau's (2011) institutional socialization conceptualization, parents, especially those from middle to high SES, tend to motivate their children to participate in multiple events, including interacting with authority figures, to make them more active and comfortable in the decision-making processes of the social structures. These results might indicate that children from educated families might have a higher awareness and knowledge of external factors underlying social events, and they might feel more comfortable when incorporating this knowledge into their social decisions in a way that considers status attainment through external factors less desirable. Based on these, current study

explored whether and how parental education plays a role in how children evaluate political authority figures by looking at the causes of their status attainment.

2.1 Method

2.1.1 Participants

For the study, 6- to 7- and 9- to 10- years old children were recruited through schools and Bogazici University Baby and Child Development Laboratory database. Around 5- to 6- years of age, children can think about external/structural causes of social events, but their performance continues to develop through adulthood (e.g., Vasilyeva et al., 2018). Similarly, children can understand occupational status around 5- to 6 years of age (e.g., Bigler et al., 2003). Moreover, in the present study, children were also introduced to governmental positions, and children's institutional reasoning starts to develop around the age of 6 (Noyes et al., 2020). Therefore, the selection of these two age categories provides an opportunity to capture children's early understanding of explanations and development of institutional concepts together with their developmental trajectory in both domains. Before data collection, the sample size was planned to be 64 (32 participants for each age group). The sample size was determined based on the previous studies on the development of the explanatory framework and leadership cognition (e.g., Bernard et al., 2016; Hussak & Cimpian, 2015; Santhanagopalan et al., 2022).

As planned, the final sample included 32 6-to-7- year- olds (14 girls, M = 6.93, SD = .47, range = 6.20 – 7.97) and 32 9-to 10- year-olds (20 girls, M = 9.96, SD = .56, range = 9.90 – 10. 90). Additional three children were tested but eliminated from the final sample due to failure to repeat explanations (N = 2) and

being distracted during the experiment (*N* =1). Thirty-five children were tested online via Zoom, and 29 were tested at schools.

All mothers (*N* = 64) and most fathers (*N* = 61) reported their education level. The most common education level among mothers was bachelor's degree (45.3%), followed graduate (20.3%) and high school degree (15.6%). More than half of the fathers had bachelor's degrees (54.1%), and the most reported degrees for the other half were high school (16.4%) and graduate degrees (14.8%). Only some parents reported their income (*N* = 44). According to the reported annual income information (on a scale with eight categories ranging from "under 100.00 Turkish liras" to "over 800.000 Turkish liras"), 54.5% of the parent's annual income was less than 400.00 Turkish liras. Parent's SES was measured by using self-reported MacArthur scale from 1 to 10 (Adler et al., 2000), where higher scores represent higher income, higher education level and better jobs. Among the parents who reported their MacArthur SES (*N* = 46) information, the mean of SES was 5.89 (*SD* = 1.34, range = 2-8).

The Ethics Committee approved this study for Master's and Ph.D. Theses in Social Sciences and Humanities at Bogazici University (See Appendix A).

2.1.2 Materials

2.1.2.1 Stimuli

During the familiarization trials, children were introduced to a five-point scale consisting of 5 circles, with varying degrees of fill from an empty circle to a completely filled circle. Each circle conveyed a different score: 5 = "a lot", 4 = "quite a little", 3 = "a little" 2 = "very little" 1 = "not at all".

All visual stimuli were created via an online tool and presented via PowerPoint. For the test trials, visual stimuli consisted of drawings of two presidents. President characters were White and middle-aged male adults. Since the gender of the presidents may affect individuals' competence attributions (Brescoll et al., 2010), all the president figures were decided to be male for both boy and girl participants. All president characters wore suits, and the color of their suits, haircuts, and hair color differed. Each president appeared next to a different city drawing representing different geographical location. The cities were similar, and a salient building was marked to indicate where the president worked in each city. The marked buildings resembled big and prestigious buildings. The only difference between the two presidential buildings was the color of the star symbol standing at the top of the building. For the forced choice success question, the same president figures were presented next to each other, and there was a colored column behind them to make it easy for children to refer to the presidents.

For the manipulation check trials, four new character drawings were used (two presidents, a notetaker, and a welcomer). All characters were White, middle-aged males. President characters were wearing suits. The color of their suits and hair, together with their haircut, were varied. Other characters, the notetaker and the welcomer wore casual pants and jackets similar to the president figures to ensure that participants inferred status only from the occupational title. Each character duo (president vs. welcomer or president vs. notetaker) appeared on the two sides of the screen at the same time, with a city picture appeared in the middle of them. Similar to the test trials, big buildings were marked for each duo. During the manipulation check trials, depending on the scenario, a picture of an elevator or shelf with a single sandwich appeared instead of the city picture.

A parental questionnaire was sent parents to collect demographic information. To measure socioeconomic status of the parents, MacArthur Self-Reported Socioeconomic Status Scale on 10 points was used (Adler et al., 2000) (see Appendix B).

2.1.3 Design and procedure

A within-subject design was used. Children were tested individually, either online or in schools. In schools, the experimenter asked the child to come to a quiet room. The experimenter met up with the children via Zoom for the online procedure. The experiment started with familiarization trials. The experimenter explained that they would play a child game in these trials. Children were informed about the essential concepts in the study and how to play the game. The test trials followed the familiarization phase. At the end of the study, the manipulation check trials were introduced.

2.1.3.1 Familiarization trials

The familiarization trials served as an introduction to the game. First, children were shown a five-point scale and explained what it meant and instructed on how to convey their answers using the scale (e.g., "if your answer means not at all, you need to choose this one" or "if your answer is quite a little you need to choose this one"). Then children were asked to show each circle to ensure they understood the scale (e.g., "Can you show me which one you will point to if your answer is a little?'). Then the experimenter explained the procedure by saying, "In this game, you will see different cities. In each city, there is one president who makes important decisions

about the city. I will ask you what you think about these presidents, but there is no wrong or correct answer.".

2.1.3.2 Test trials

During the test trials, the experimenter first showed two president figures from the test trials next to each other and briefly introduced them by saying, "Look, these are the presidents that I'm going to show you. I want to say something important about them. All these presidents have many similar features. However, one crucial difference between them is that all became presidents for different reasons." Then experimenter introduced presidents one by one with causal explanations "Look, this is T. T is the president of a city because T is hard working and responsible, and Look, this is B. B is the president of a different city because B has a wealthy family and grew up in a big city" The order of the introductions was counterbalanced. Then the experimenter said, "Let us closely look at the cities where these presidents work." Then, participants were introduced to two test trials. Children were introduced to a president of a different city far away in each trial. The only differences between the two president figures were the cities they lived in and the causal explanations regarding why they became a president (i.e., internal, external, see Table 1). Internal and external causal explanations were adapted from Hussak and Cimpian (2015). The introduction order of the presidents was counterbalanced. Half of the participants heard about the president with an internal explanation first, and the other half heard about the president with an external explanation first.

For the first part of the test questions, children saw the president characters one at a time. The experimenter pointed to the president and provided information about the city where that president works, what responsibilities he has as a president,

and a causal explanation. After hearing information about a particular president, children were asked seven questions about that president. Questions were about the success of the presidents on a five-point scale; "How much do you think people living in the city where T works, trust T?", "How happy do you think people are, in the city where T works?" and "How well do you think T runs the city he works in?" about children's support for the president on a five-point scale: "How much do you think T deserves to be a president?" and "How much do you like T?", about the stability of the leadership status of the presidents: "Let us say, T moved to a new city and started to live there. Do you think T would become a president in the new city as well?" and intelligence of the presidents on a five-point scale: "How smart do you think T is?". Children were given a forced choice question about presidents' success in the second part of the test questions. Two presidents appeared on the screen simultaneously, and children were reminded of who they were and how they attained the presidency role. Then children were asked which president was more successful: "Which of these two presidents do you think runs the city they work in better?" (see Table 2).

Table 1. Causal Explanations Regarding the Attainment of Presidency

Cause	Explanation
Internal	T is the president of this city because T is hard working and responsible
External	B is the president of this city because B has a wealthy family and B grew up in a big city

Table 2. Test Questions

Domain	Question
Success	How much do you think people living in the city where T works, trust T?
Success	How happy do you think people are, in the city where T works?
Success	How well do you think T runs the city he works in?
Success Forced Choice	Which of these two presidents do you think runs the city they work in better?
Support	How much do you think T deserves to be a president?
Support	How much do you like T?
Status Stability	Let us say, T moved to a new city and started to live there. Do you think T would become a president in the new city as well?"
Intelligence	How smart do you think T is?

2.1.3.3 Manipulation check trials

During manipulation check trials, children received two trials. In each trial, they saw a president character and another employee (either a welcomer or a notetaker). The notetaker and welcomer roles were taken from Santhanagopalan et al. (2022) to represent less-prestigious occupations. In each trial, the president and the other employee simultaneously appeared at the two sides of the screen, and a city picture with a marked building appeared in the middle of them. For the comparison between the president and the notetaker, the experimenter said, "These people live in this city and work in this building. This is the president of the city, responsible for running the city and deciding how to use the city's money. This is the notetaker responsible for listening to people and taking note of what they say". Then the city picture

disappeared, and a picture of an elevator appeared in the middle of the screen. The experimenter said, "One day, these two people wanted to use the elevator at work. However, there was only room for one person in the elevator, and only one could board the elevator. Who do you think got on, the president or the notetaker?" For the second trial, a different city picture appeared in the middle of the pictures of second president and the welcomer. The experimenter introduced characters by saying, "These people live in this city and work in this building. This is the president of the city, responsible for running the city and deciding how to use the city's money. This is the welcomer, responsible for opening the door to people who come to the workplace and welcoming them." Then, the city picture disappeared, and a picture of a shelf with a single toast appeared. The experimenter continued, "One day, they both wanted to buy a toast in the canteen. However, there was one toast left. One got it. Who do you think took the toast? The president or the welcomer?" The order of trials, the sides where the presidents and employees appear, and the pictures of cities, presidents, and other employees were counterbalanced. (see Appendix C for the original Turkish script).

2.2 Results

2.2.1 Preliminary analyses

To measure parents' education level, their degrees were turned into years of education (ranging from "0 = no education" to "24 = doctorate level education"). Then, the mean score of both parents' total education year was taken as the Parental Education variable (M = 15.1, SD = 3.48, range = 4 - 21). If there was only one parent's education information (N = 3), then this score was taken as the Parental Education without dividing. There was no significant difference in Parental

Education between older (*M* = 14.5, *SD* = 4.04) and younger (*M* = 15.8, *SD* = 2.72) age groups (*t*(62) = -1.56, *p* = .12, *d* = -.39). However, since the number of parents who did not provide income (31.25%) and subjective SES (%25) information was high, these variables were not included in analyses (see Table 3 and Table 4).

Table 3. Parent's Annual Income

Parent's Annual Income		
	N	Percentage
Less than 100.000	5	11.4
100.000 – 200.000	5	11.4
200.000 – 300.000	5	11.4
300.000- 400.000	9	20.5
400.000-500.000	4	9.1
500.000-600.000	9	20.5
600.000-700.000	3	6.8
700.000-800.000	0	0
More than 800.000	4	9.1

Table 4. Parent's Subjective SES

Parent's Subjective SES (McArthur Scale)										
	1	2	3	4	5	6	7	8	9	10
N	0	1	1	5	7	18	9	5	0	0
Percentage	0	2.2	2.2	10.9	15.2	39.1	19.6	10.9	0	0

2.2.2 Main statistical analyses

R statistical software (R version 4.1.2; R Core Team, 2021) was used to conduct all the analyses. By implementing *the glmer* and *lmer* functions of the "lme4" package

(Bates et al., 2015), Linear Mixed Models (LMM) and Generalized Linear Mixed Models (GLMM) analyses were conducted to account for the random variance. For the scope of this study, two potential random effects might account for the variance in the outcome: participants and trials. That is why all the mixed models included participants' random intercept to control the variance coming from participants' tendencies, like giving similar answers across trials. Models also included a random intercept for the items if there were multiple items to control the variance coming from items like revealing related answers. (Muradoglu et al., 2023). LMM analyses were conducted to analyze children's (1) Success inferences for the leaders, (2) Support for the leaders and (3) Intelligence attribution to the leaders, and GLMM analysis was conducted to analyze (1) children's stability expectations for the leaders' status. Lastly, tests of Chi-square Independent sample and Goodness of fit were conducted for the forced choice success question and manipulation check questions.

The forward selection method was used for each LMM and GLMM analysis, and each predictor was included in the model sequentially. Chi-square tests were used for the model comparison steps to evaluate the predictors' contribution to the model. First, a null model that only included random intercepts for participants or trials was generated. Then, a new model was generated by adding Age to the null model, and it was compared with the null model. In the following step, a different model was generated by adding an Explanation to the Age model and was compared with the Age model. In order to evaluate the last predictor, a fourth model was created by adding Parental Education to the Explanation model and was compared with the previous Explanation model. All the main predictors were kept in the model

even if they did not significantly contribute to the model. Then, one by one, interactions were added to the model and kept in the model only if they contributed.

After constructing the final model, the effects of Gender, Order, or Experiment place (online vs. school) were controlled. Each variable was added separately to the final model, and these extended versions were compared with the final model. According to the results, none of the three control variables significantly contributed to the models, so they were excluded from further analyses.

As a last step, after each analysis, two-tailed binomial tests, or one-sample t-tests were conducted to see whether children's answers differed from chance level.

2.2.2.1 Children's success inferences

To understand how causal explanations regarding the role attainment of the presidents affect children's success inferences about those presidents, an LMM analysis was conducted. The outcome variable was the children's success inference score which included three questions (all on a Likert scale from 1 to 5): the perceived happiness level of the community, the community's perceived trust for the president, and the perceived performance of the president.

The model comparison results revealed that Age Group ($\chi 2$ =4.08, df = 1, p = .04), Explanation ($\chi 2$ =12.87, df = 1, p < .001), Parental Education ($\chi 2$ =9.63, df = 2, p = .008) and the interaction term between Age Group and Explanation ($\chi 2$ =17.02, df = 1, p < .001) significantly improved the model. However, other two-way and three-way interactions did not improve the model (all p's> .05), so they were dropped from the final model. In the final model, there were Age Group (6-7, 9-10-year-olds), Explanation (External, Internal), and Parental Education

(continuous) as the fixed effects and interaction between Age Group and Explanation. The model also included a random intercept of Participants and Trials.

Age Group had a significant effect, revealing that younger children inferred more success to the presidents than older children (*Estimate* = .69, *SE* = .15, $p <$ .001) (See Table 5 for the model summary). Results also revealed a significant effect of Explanation, indicating that children inferred more success when given an internal explanation than an external explanation (*Estimate* = 1.17, *SE* = .12, $p < .001$). The main effect of Parental Education was marginally significant (*Estimate* = -.03, *SE* = .02, $p = .09$), showing a trend where children's success inferences tend to decrease as parental education increases. Age Group and Explanation interaction were also significant (*Estimate* = .66, *SE* = .16, $p < .001$). Pairwise comparisons adjusted by Bonferroni showed that for the presidents who attain their role due to external causes, both younger (*Estimate* = -.51, *SE* = .12, $p = .004$) and older children (*Estimate* = -1.17, *SE* = .12, $p < .001$) inferred less success compared to the presidents who attain their role due internal causes. Also, older children inferred less success for the presidents who attained their role due to external causes than younger children (*Estimate* = -.69, *SE* = .15, $p < .001$) (Figure 1).

Further, one sample t-tests were conducted separately for every age group across explanation types to investigate whether children's success inferences differed from chance level. According to the results, older children's success inferences for both presidents with internal ($t(31) = 21.08$, $p < .001$) and presidents with external explanations ($t(31) = 2.36$, $p = .03$) were above chance. Also, younger children's success inferences for the presidents were above chance when they were given internal ($t(31) = 18.06$, $p < .001$) and external ($t(31) = 9.07$, $p < .001$) explanations.

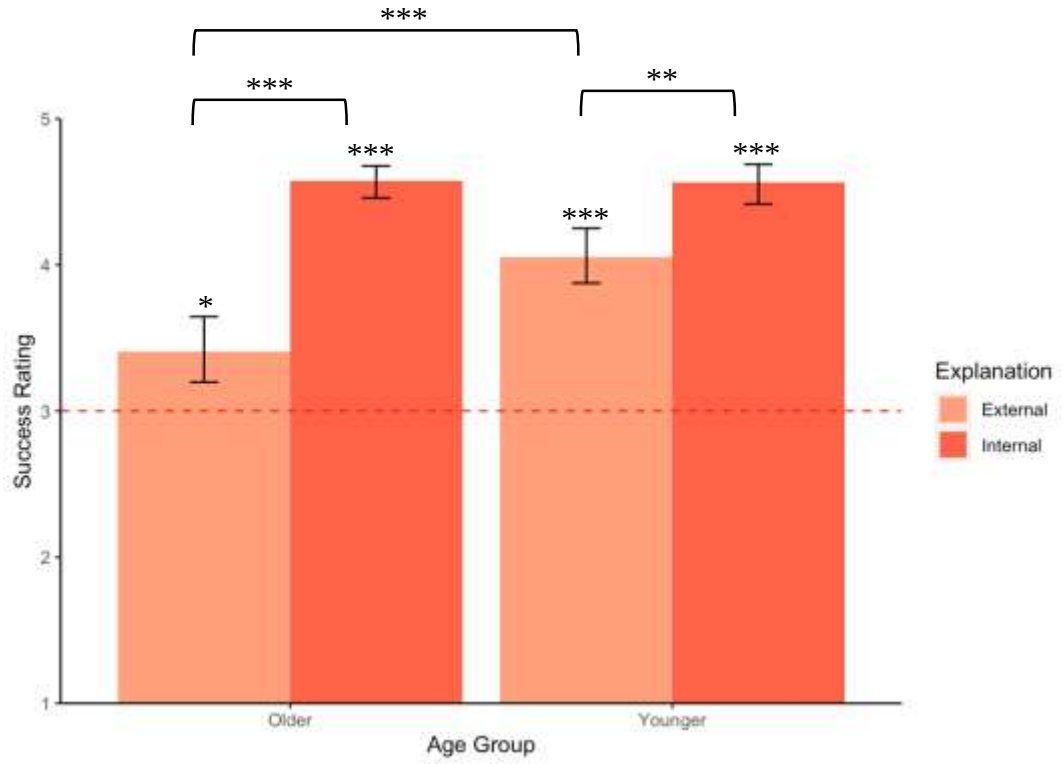

Figure 1. Children's success inferences across age group and explanations. Note: Error bars represent 95% bootstrapped confidence intervals. Significance codes, *** .001, ** .01, * .05

Table 5. The Model Summary of the Final Model of Success

Fixed Effects	*Estimate*	*SE*	*t*	*p*
(Intercept)	3.39	.11	32.03	< .001
Age Group	.69	.15	4.69	< .001
Explanation	1.17	.12	10.02	< .001
Parental Education	-.03	.02	-1.70	.09
Age Group X Explanation	-.66	.16	-4.18	< .001
Random Effects				*Variance*
Participants				.14
Trials				.002

2.2.2.2 Children's forced choice success inferences

Children's responses to the forced-choice success question were binary; they either chose the president with an internal explanation or the president with an external explanation as more successful. Most children chose the president who attained the role due to internal causes as more successful (Younger: 27 out of 32 children,

Older: 30 out of 32 children). The Chi-square test of independence was conducted and revealed that the proportion of children's success attributions to the one president over the other did not differed between age groups ($\chi 2$ (1, N = 64) = 1.44, p = .23). According to the two-tailed binomial tests, both older children (Percentage: 94%, 95% CI [.85- .98], p < .001) and younger (Percentage: 84%, 95% CI [.73 - .92], p < .001) children expected the president who attain the role due to internal causes to be more successful above chance level.

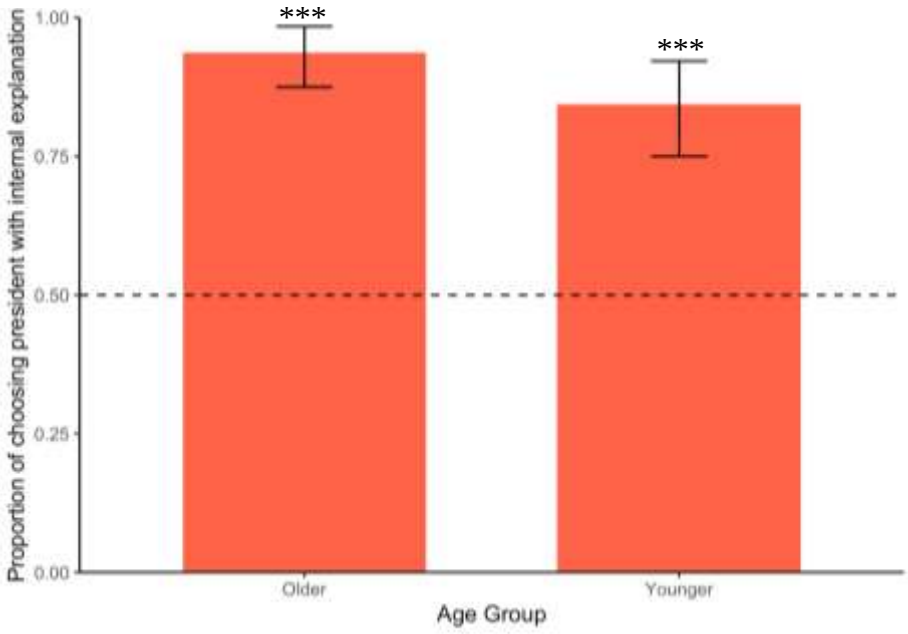

Figure 2. Percentage of children's attributing success to the president with internal explanation over external explanation.
Note: Error bars represent 95% bootstrapped confidence intervals. Significance codes, *** .001, ** .01, * .05

2.2.2.3 Children's support for the leaders

Children's support ratings for the leaders across different causal explanations were investigated with an LMM analysis. The outcome variable was children's support ratings, consisting of two measures (both on a 5-point Likert scale): how much children think the presidents deserve their role and how much children like the

presidents. Model comparisons showed that the contributions of Age Group ($\chi 2$ =12.03, *df* = 1, $p < .001$), Explanation ($\chi 2$ =7.28, *df* = 1, $p = .007$) and the interaction between Age Group and Explanation ($\chi 2$ =15.26, *df* = 1, $p < .001$) were significant. However, the main effect of Parental Education did not contribute to the model ($\chi 2$ =0, *df* = 1, $p = 1$). All other two-way interactions and the three-way interaction's contributions were insignificant (all *p*'s < .05) and dropped from the model. Therefore, the final model included the main effects of Age Group (6-7, 9-10-year-olds), Explanation (External, Internal), and Parental Education (continuous), together with the interaction term between Age Group and Explanation and random intercepts for Participants and Trials.

The results from the model summary showed a significant main effect of the Age Group (see Table 6 for model summary), indicating that younger children supported presidents more than older children (*Estimate* = 1.03, *SE* = .17, $p < .001$). There was also a main effect of Explanation suggesting that hearing internal causal explanations resulted in higher support for the presidents (*Estimate* = 1.75, *SE* = .25, $p = .006$). Also, a main effect of Parental Education was found, and it showed that as parental education increased, children supported leaders less (*Estimate* = -.04, *SE* = .02, $p = .03$). Finally, there was an interaction between Age Group and Explanation (*Estimate* = -.89, *SE* = .22, $p < .001$) and Bonferroni corrected post hoc tests showed that for the older children, exposure to external explanations resulted in less support for the presidents compared to younger children (*Estimate* = -1.03, *SE* = .17, $p < .001$). Also, older children supported presidents less when they were given external explanations compared to internal explanations (*Estimate* = -1.75, *SE* = .25, $p = .04$). (See Figure 3)

Further, one sample t-test showed that older children's support for the president with external explanations did not differ from the chance level ($t(31) = -1.42$, $p = .16$). However, their support for the presidents with internal explanations was above chance level ($t(31) = 14.90$, $p < .001$). For the younger children, their support for both the presidents with external ($t(31) = 6.45$, $p < .001$) and internal explanations ($t(31) = 16.20$, $p < .001$) was above the chance level.

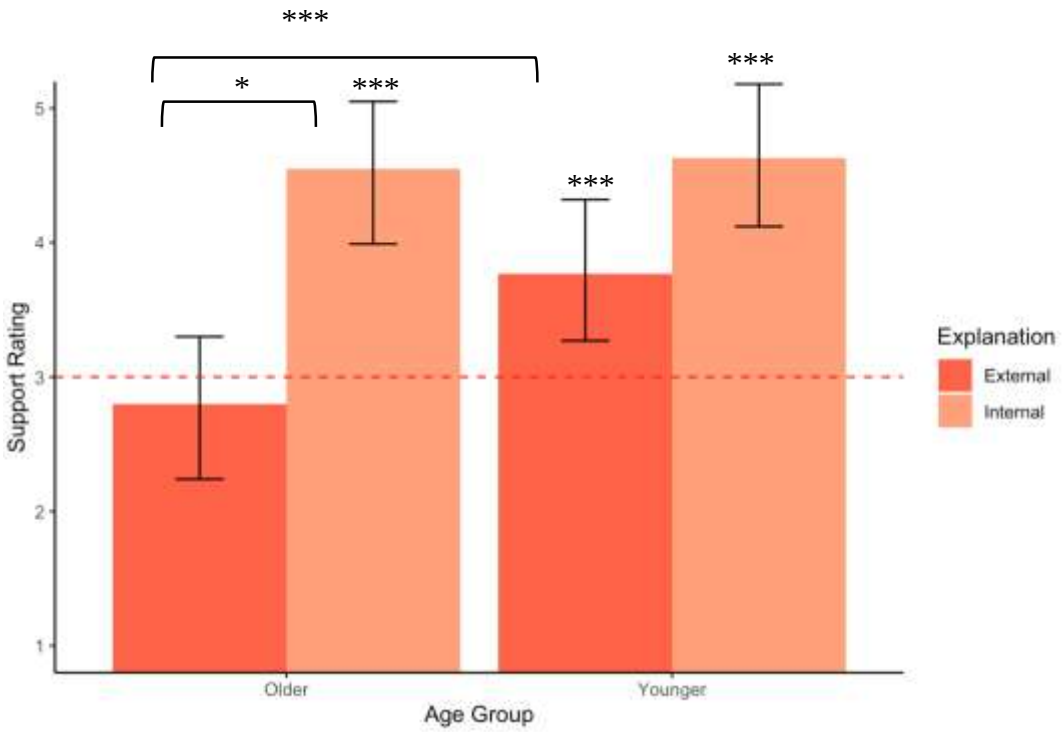

Figure 3. Children's support ratings for the leaders across age group and explanations.
Note: Error bars represent 95% bootstrapped confidence intervals. Significance codes, *** .001, ** .01, * .05

Table 6. The Model Summary of the Final Model of Support

Fixed Effects	*Estimate*	*SE*	*t*	*p*
(Intercept)	2.77	.18	15.10	< .001
Age Group	1.03	.17	6.09	< .001
Explanation	1.75	.25	7.02	.006
Parental Education	-.04	.02	-2.33	.03
Age Group X Explanation	-.89	.22	-4.14	< .001
Random Effects				*Variance*
Participants				.08
Trials				.04

2.2.2.4 Children's stability expectancies

To identify children's stability expectancies for the presidents' leadership status, a GLMM analysis was conducted. The outcome variable was children's binary answers (yes or no) to whether the targeted president would become a president in a different city. Age Group ($\chi 2$ = .12, *df* = 1, *p* = .73) and Parental Education ($\chi 2$ = .05, *df* = 1, *p* = .83) did not improved the model but Explanation did ($\chi 2$ = 9.19, *df* = 1, *p* = .002). Also, the interactions between Age Group and Explanation ($\chi 2$ = 5.73, *df* = 1, *p* = .02) and Parental Education and Explanation ($\chi 2$ = 11.80, *df* = 1, *p* < .001) significantly contributed to the model. The other two-way and the three-way interaction were insignificant (all *p's*> .05) and dropped from the model. Thus, the final model included the main effects of Age Group (6-7, 9-10-year-olds), Explanation (External, Internal), and Parental Education (continuous), together with the interaction terms between Age Group and Explanation, and Parental Education and Explanation and random intercept for the Participants.

According to the model summary (see Table 7), there was no main effect of age (*Estimate* = .006, *SE* = .33, *p* = .99) and parental education (*Estimate* = .04, *SE* = .09, *p* = .68). There was a significant main effect of Explanation indicating that children expected more stability for the leadership status when they were given

internal explanations (*Estimate* = 1.73, *SE* = .54, *p* = .002). Results also showed a significant interaction between Age and Explanation (*Estimate* = -1.69, *SE* = .64, *p* = .008). According to the Bonferroni adjusted post hoc analyses, older children expected less stability for the leadership status when the president attained the role due to external causes compared to internal causes (*Estimate* = -3.46, *SE* = 1.09, *p* = .009) (see Figure 4). There was a significant interaction between Explanation and Parental Education (*Estimate* = .25, *SE* = .09, *p* = .008). Bonferroni adjusted post hoc analyses showed that as the parental education increased, children expected less stability for the leadership status of presidents with external explanations than internal explanations (*Estimate* = -1.76, *SE* = .63, *p* = .005) (see Figure 5).

Two-tailed binomial tests for each Age Group across Explanation were conducted for the chance level analyses. Older children's stability expectancies were above chance when they were exposed to internal explanations (Stability Expectation: 78%, 95% CI [.60- .91], *p* = .002), but it was at the chance level when they were given external explanations (Stability Expectation: 34%, 95% CI [.19- .53], *p* = .11). Young children's stability expectations were at the chance level both when they were given internal explanations (Stability Expectation: 63%, 95% CI [.44- .79], *p* = .62) and external explanations (Stability Expectation: 56%, 95% CI [.38- .74], *p* = .60).

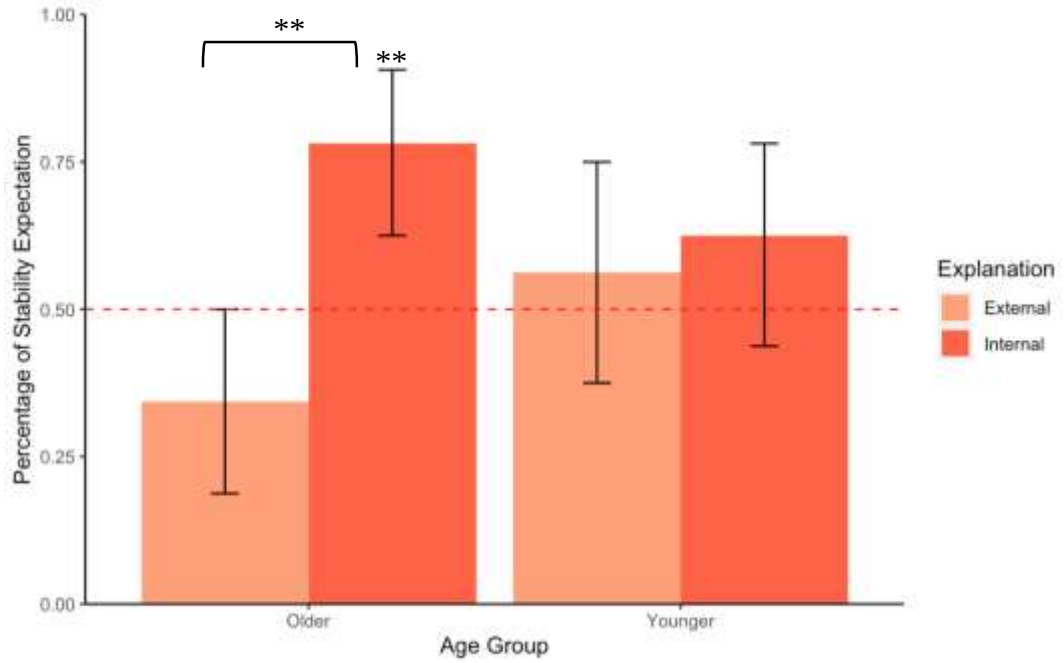

Figure 4. Percentage of children's stability expectations for the leadership status across age group and explanations.
Note: Error bars represent 95% bootstrapped confidence intervals. Significance codes, *** .001, ** .01, * .05

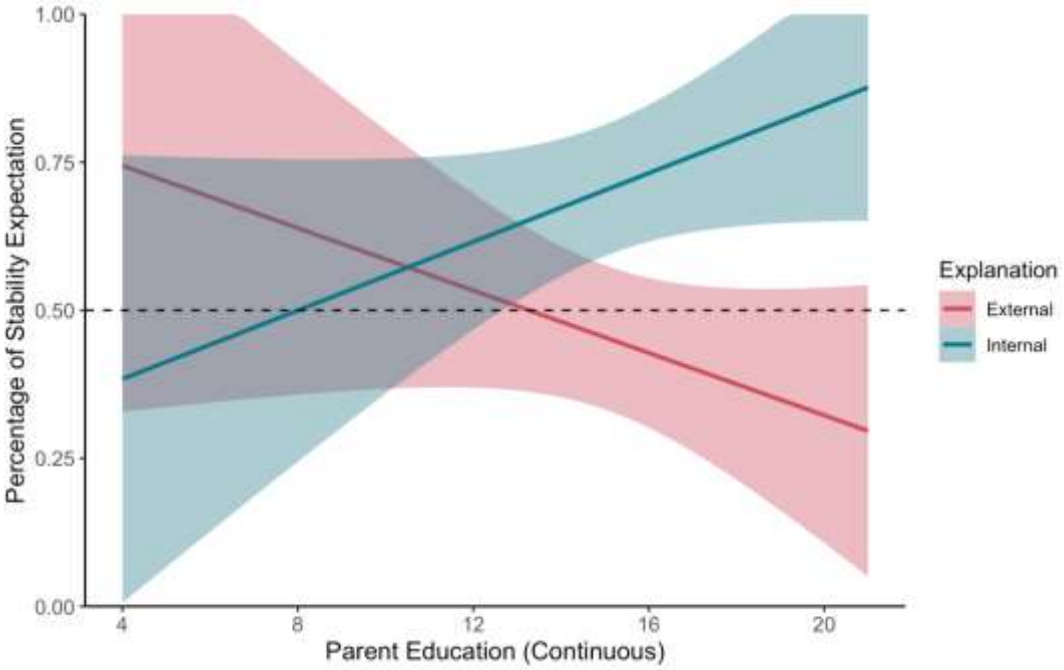

Figure 5. Children's stability expectations across explanations and parental education.

Table 7. The Model Summary of the Final Model of Stability

Fixed Effects	*Estimate*	*SE*	*z*	*p*
(Intercept)	.58	.34	1.69	.09
Age Group	.01	.33	.02	.99
Explanation	1.73	.54	3.17	.002
Parental Education	.04	.09	.43	.68
Age Group X Explanation	-1.69	.64	-2.66	.008
Explanation X Parental Education	.25	.09	2.66	.008
Random Effects				*Variance*
Participants				2.40

2.2.2.5 Children's intelligence inferences

In order to examine how different causal explanations affect children's intelligence inferences about the presidents, an LMM analysis was conducted. The outcome variable was children's intelligence ratings about presidents (on a 5-point Likert scale). According to the model comparisons, Age Group ($\chi 2$ = 1.46, *df* = 1, *p* = .23) and Parental Education ($\chi 2$ = 0, *df* = 1, *p* = 1) did not improve the model, but Explanation did ($\chi 2$ = 39.64, *df* = 1, *p* < .001). There is an interaction between Age Group and Explanation that significantly contributed to the model ($\chi 2$ = 4.37, *df* = 1, *p* = .04). However, all other interaction terms' contributions were non-significant (all *p*'s > .05). The final model included the main effects of Age Group, Explanation, and Parental Education together with the interaction term between Age Group and Explanation. The random intercept for the participants was also added.

According to the model summary of the final model (see Table 8), there was a main effect of Age Group revealing that younger children inferred more intelligence for the presidents compared to older children (*Estimate* = .74, *SE* = .25, *p* = .004). There was a main effect of Explanation showing that internal explanations resulted in higher intelligence inferences for the presidents compared to external explanations (*Estimate* = 1.59, *SE* = .25, *p* < .001). Also, the interaction

between Age Group and Explanation was significant (*Estimate* = -.75, *SE* = .35, *p* = .032), and Bonferroni adjusted post hoc follow-ups showed that external explanations lead older children to make less intelligence inference for the presidents compared to younger children (*Estimate* = -.74, *SE* = .25, *p* = .02). Both older (*Estimate* = -1.59, *SE* = .25, *p* < .001) and younger children ((*Estimate* = -.84, *SE* = .25, *p* = .006) make less intelligence inference when they were given external explanations compared to internal explanations. (see Figure 6)

Furthermore, to investigate whether children's intelligence inferences differ from the chance level, one sample t-test was run for each age group across explanations. Older children's intelligence inferences when they were given internal explanations were above the chance level ($t(31) = 14.03$, $p < .001$). However, it was at the chance level when they were given external explanations ($t(31) = 0$, $p = 1$). Younger children's intelligence inferences were above chance both when they were given internal ($t(31) = 11$, $p < .001$) and external explanations ($t(31) = 4.25$, $p < .001$).

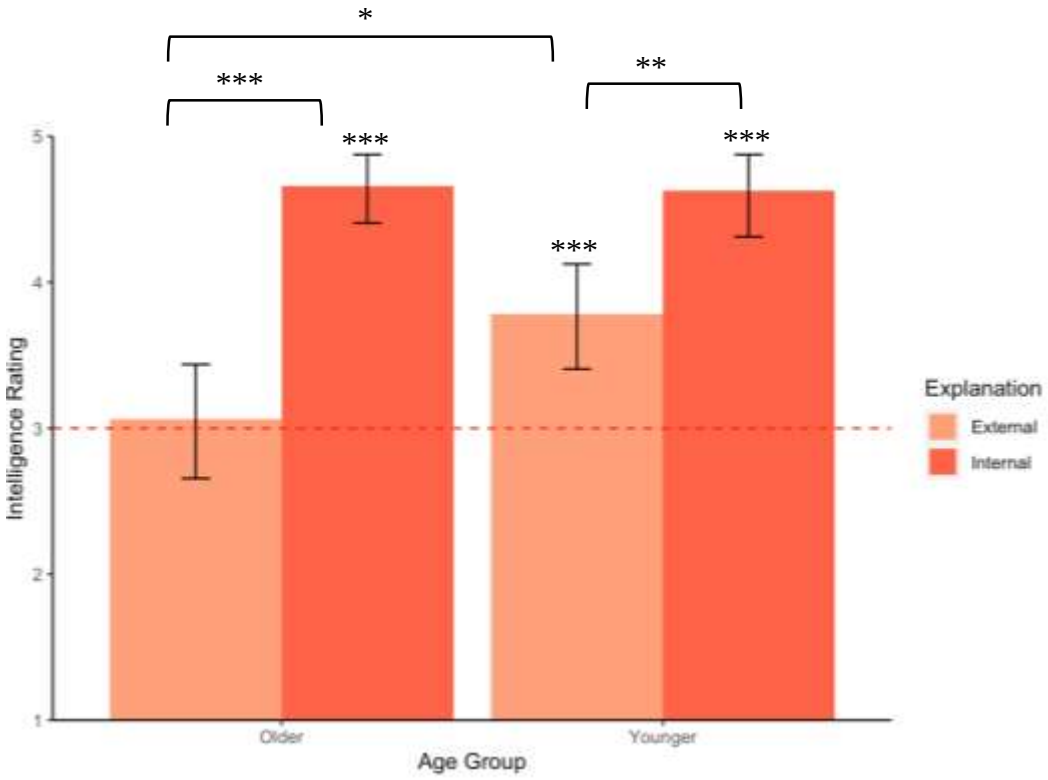

Figure 6. Children's intelligence attributions for the leaders across age group and explanation.
Note: Error bars represent 95% bootstrapped confidence intervals. Significance codes, *** .001, ** .01, * .05

Table 8. The Model Summary of the Final Model of Intelligence

Fixed Effects	*Estimate*	*SE*	*t*	*p*
(Intercept)	3.05	.17	17.56	< .001
Age Group	.74	.25	3.01	.004
Explanation	1.59	.25	6.52	< .001
Parental Education	-.02	.03	-.73	.47
Age Group X Explanation	-.75	.35	-2.17	.03
Random Effects				*Variance*
Participants				.00

2.2.2.6 Manipulation check questions

In order to check whether children attributed high status to the president figures, their answers to the resource control questions were investigated with Chi-square test. Across two trials, children either attributed resource control power to the presidents or one of the other two employees working in the same building with the presidents. Across trials younger and older children's proportion of power attribution to the

president was the same (Younger: 37 out of 64 and Older: 37 out of 64 trials). Children's answers were investigated separately for each trial. In the first trial, most children attributed the power to the president figure over the other employee regardless of which employee they encountered. Two-tailed binomial tests revealed that this choice was above the chance level (Attributing Power to the President: 76%, 95% CI [.65- .86], $p < .001$). However, in the second trial, children showed a different trend by attributing power to the president at the chance level (Attributing Power to the President: 39%, 95% CI [.27- .52], $p = .10$) (see Figure 7). Almost half of the children (43.75%) followed this trend by attributing power to the president in the first trial but attributing it to the other employee in the second trial.

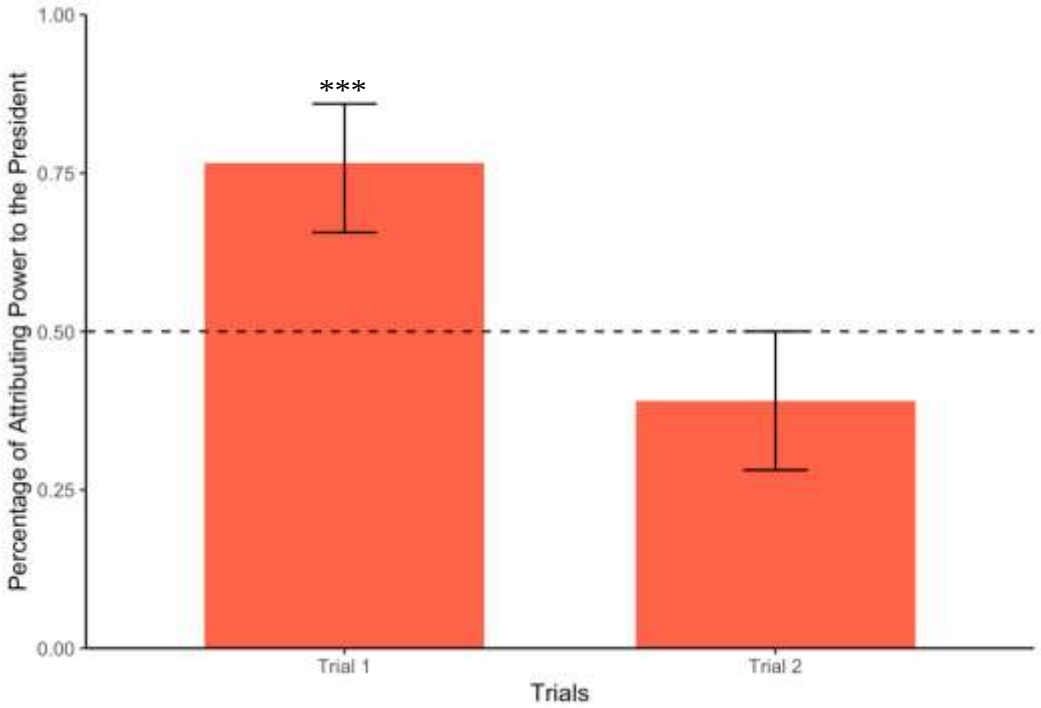

Figure 7. Percentage of children's power attributions to the leader figure over other employees across trials.
Note: Error bars represent 95% bootstrapped confidence intervals. Significance codes, *** .001, ** .01, * .05

CHAPTER 3

DISCUSSION

The present study investigated how different causal explanations about why leader figures, particularly presidents, attained their role influenced children's attitudes toward leaders. Specifically, it focused on whether children's success and intelligence inferences about leaders, support for the leaders, and stability expectations for the leadership status are susceptible to internal and external explanations, and if so, how this susceptibility shapes throughout the development. Also, the present work explored how contextual factors, parental education in particular, are related to children's attitudes toward leaders based on different causal explanations.

Overall, internal explanations led children to exhibit more positive attitudes toward leaders than external explanations. In line with our hypothesis, when children were exposed to internal explanations (compared to external explanations), both younger (6- and 7-year-olds) and older (9- and 10-year-olds) children inferred more success for the presidents, and this difference was larger for older children. Also, in response to the forced choice question, children robustly chose the president with an internal explanation (vs. an external explanation) as the more successful one. Children's intelligence inferences revealed similar patterns: Internal explanations led children to infer greater intelligence for the presidents, and this tendency was more robust for older children.

Different explanations shaped older children's support for the presidents, and they supported presidents more when given internal explanations than external ones. However, younger children did not show a difference in their support for the

presidents based on the explanations, which was unexpected. Thus our hypothesis regarding children's support for the leaders was partially supported. Finally, as hypothesized, older children inferred that presidents who attain their role due to internal causes would continue to be presidents in a different city than those who attain their role due to external causes. However, contrary to expectations, younger children did not show a preference in their stability expectations regardless of the explanations.

An effect of parental education was found on children's support for the leaders and stability inferences. As parental education increased, children supported presidents less. Besides, as parental education increased, children thought presidents who attained their role due to external causes would not become presidents in different cities. Together, these findings illustrate the developmental trend of how explanations influenced children's thinking about high-status authority figures in a nuanced way and highlights the role of parental factors in this process.

3.1 Explanations' influence on children's inferences about leaders

Results revealed main effect of age on both children's success and intelligence inferences for the presidents. Younger children's (6- and 7- year-olds) both success and intelligence inferences for the presidents were higher than older children's (9- and 10-year-olds) success and intelligence inferences. This age-related decrease in children's success and intelligence inferences aligns with the previous findings on children's status-based attitudes. There are studies showing that around preschool age, children attribute more positivity to high-status individuals (e.g., Charafeddine et al., 2015; Sigelman, 2012), and around middle childhood, children's positive attitudes towards high-status others starts to decrease (e.g., Yang & Dunham, 2022).

The decrease in status-based positivity might be due to their attributional tendencies (Peretz-Lange & Muentener, 2021). Specifically, the decrease in their reliance on inherence heuristics and in their essentialist beliefs (e.g., Cimpian & Steinberg, 2014; Davoodi et al., 2020; Rhodes et al., 2018; Sutherland & Cimpian, 2019) might encourage children to view higher status as less related to internal features of individuals; hence as less positively.

In fact, children in the current study thought that presidents who worked hard and were responsible for getting their positions were more successful at their roles (both in the composite success measure and the forced choice question), and were smarter than the presidents who attained their role through their families' wealth and geographical advantages. These findings revealing the main effect of explanations strengthen the argument that children's status-based attitudes might be rooted in their attributional tendencies (Peretz-Lange & Muentener, 2021) and internal attributions might be the underlying factors of children's positive attitudes towards high-status others (e.g., Peretz-Lange et al., 2021). Together, these results extend social status literature by showing that children do not perceive every high-status individual as equally competent. Therefore, one of the reasons why findings of past studies indicated that children perceive high-status others as more competent (e.g., Sigelman, 2012; Shutts et al., 2016; Roussos & Dunham, 2016), could be their internal attributions to the high-status individuals (e.g., perceiving them as intrinsically better than others) instead of simply associating status itself with competency. Hence, when attributions were manipulated by introducing a high-status individual with external attributions, their competency inferences decreased. However, even when exposed to external explanations, children did not think that these presidents were not successful at their jobs or were not intelligent. For the

success attributions, chance level analyses indicated that children thought all the presidents were successful above the chance level. This result implies the existence of other mechanisms, in addition to attributional ones, interfering with children's judgments about leaders. One of the interfering mechanisms can be children's early political socialization (for a review, Reifen-Tagar & Cimpian, 2022) and their potential awareness of the common practices in politics (see Patterson et al., 2019). In political institutions, it is not uncommon for individuals with external advantages to fill the highest positions. According to Carnes (2018), less than 10% of the elected officials in the U.S. belong to the working class. In the case of Turkey, there is high political control over the bureaucracy, which increases the appointment of high-rank officials based on their political connections (Akkoyunlu & Öktem, 2016; Üstüner & Yavuz, 2017; OECD, 2015, p. 49). These patterns might become available to the children through early political socialization. Relatedly, after the age of 6, children expect wealthy individuals to become leaders (Yang & Dunham, 2022). Besides, having external advantages might also signal the possession of internal advantages like better knowledge. Past research showed that parental wealth predicts their children's educational attainment (Pfeffer, 2018). Wealthy parents can provide a better education for their children through education investments, like paying for good schools or living in better neighborhoods with high-quality state schools (Haellsten & Pfeffer, 2017; Owens, 2016). The current study conceptualized external advantages as family wealth and geographic location. Therefore, children might have considered having wealthy parents as an indirect indicator of some merit. In sum, while emphasizing effort (e.g., hard work) provides highly salient evidence for the greater success of the leaders, external advantages of the current study may

not provide enough evidence to infer the leaders' failure in their roles or may provide less salient evidence for success.

In addition, children's conceptualization of social roles and their deontic features (e.g., one is supposed to help sick people) might also explain these findings. Merely occupying a role entails performing role-related actions (Leslie, 2015). A study by Foster-Hanson and Rhodes (2019) showed that 4- and 5-year-olds think that deontic features are more important to be a member of the role category (e.g., doctor) than psychological properties (e.g., caring about helping sick people). However, adults prioritize psychological properties more than deontic obligations for category membership (Foster-Hanson & Rhodes, 2019). In the current work, children were told that both people have already become presidents (members of the category), they have had specific responsibilities (deontic obligations), and they have been actively performing role-related actions (i.e., "…he is doing important things like deciding where to build roads"). This information altogether seems to create a scenario where presidents are doing what they are supposed to do. Therefore, fulfilling the role's requirements can be enough for children to assume that presidents are successful, regardless of the quality of their work. This might also explain age and explanation interaction where older children inferred less success for the presidents with external explanations than younger children. Older children's conceptualization of social roles might become more complex and even resemble adults' conceptualization. Therefore, for older children, compared to younger children, sole fulfillment of role-related responsibilities can be a weaker indicator of success in the absence of additional psychological trait information that might be relevant to competence (e.g., working hard). To address these, using different wording, like saying "he is supposed to do" instead of "he is doing," could affect

children's success inferences. Besides, an informative follow-up could ask children to predict the future success of target characters with different advantages (internal or external) in leadership if they ever become leaders. Such a study could minimize the effects of ongoing category membership in social roles on children's success inferences.

For intelligence inferences, only older children's intelligence attributions for the presidents who attained their position due to external reasons were at the chance level; children in all other conditions attributed intelligence to presidents above chance level. Again, this might reflect children's general positivity towards leaders due to their high status (e.g., Shutts et al., 2016), or children might consider being smart as a trait that leaders possess. Considering the latter explanation, developmental literature on children's expectations regarding leaders is very limited. So far, we know that children expect leaders to be more responsible but not more entitled (Stavans & Diesendruck, 2021), and they expect leaders to conform to group norms (Tian & Bian, 2023). Besides, adult literature reveals that intelligence is not the only distinctive feature of leaders; instead, being assertive and competitive are the features that adults expect leaders to have (Eagly & Carli, 2007). Moreover, people known for their high-quality decision-making strategies are more likely occupy leadership positions (Garfield et al., 2019). Therefore, eliminating or supporting the latter explanation may be possible only with systematic research on children's conceptualizations of leadership qualities and their expectations for the traits that leaders should possess.

Furthermore, the former explanation regarding children's general positivity towards leaders and their attributional biases, can be more illustrative to understand their intelligence attributions. According to Yang and Dunham (2022, study 1), after

age 8, children do not associate high status with being smart. However, in the current study, older children associated leaders with being smart above chance level if they were given internal explanations as the cause of leadership. This finding further supports the malleability of status-based attributions by attributional manipulations. Also, the interaction between age and explanation showed that younger children tended to attribute more intelligence to the leaders with external explanations than older children. The reason for that might be younger children's higher positivity towards high-status others (e.g., Charafeddine et al., 2015; Yang & Dunham, 2022). Since younger children may approach more positively to both characters due to their leadership status, the external attributions may become less salient for younger children and less disruptive of their pro-high-status inferences compared to older children.

Future studies should continue to investigate the developmental trajectory of how children's status-based attitudes intertwine with their attributional tendencies. The saliency of causal explanations regarding social events or facts might be affected by the strength of children's dispositional preferences towards those events or facts. For instance, attributional manipulations might be less effective in changing children's attitudes toward what they highly prefer. Besides, one limitation of the present research was the need for a baseline measurement of children's attitudes toward leaders. A presidential figure without explanation could be informative to understand to what degree children attribute success and intelligence to the leaders and which explanation influence children's attributes in which direction. Another future direction can be measuring children's success inferences for the leaders by controlling their intelligence inferences. To explain, telling children that leaders are

equally smart and then asking them to infer leaders' success may help understand whether children think intelligence is required for a leader to succeed.

3.2 Explanations' influence on children's support for the leaders

In terms of children's support for the leaders (deservingness of the leadership and their preference for the leaders), younger children supported leaders more than older children, and all children supported leaders more when they heard internal explanations. Children's tendency to justify socio-political systems can explain these results (e.g., Jost & Banaji, 1994; Hussak & Cimpian, 2015). System justification theory emphasizes that people tend to explain ongoing sociopolitical systems in a positive way and accept current conditions just because they are present (Jost & Banaji, 1994, p.11). Thus, developmental research showed that, children's proto-political behaviors like supporting existing sociopolitical systems emerged early, around preschool ages. Past research also revealed that children, at younger ages, exhibit higher tendency to endorse ongoing status-quo (Hussak & Cimpian, 2015; Hussak & Cimpian, 2017; Olson et al., 2011). These previous findings align with the current study's findings that younger children supported leaders more by thinking they deserved their role more and showing a higher preference for them.

This age-related variations in children's proneness to support existing systems or current leaders can be explained by children's greater reliance on inherent or intrinsic factors to explain events (Cimpian & Steinberg, 2014) and higher essentialist beliefs (Rhodes et al., 2018; Sutherland & Cimpian, 2019). Thus, a higher tendency to perceive social facts as occurring due to biological factors might lead younger children to perceive them as more acceptable and more willing to perpetuate them. In sum, in the current study, younger children's higher tendency to support leaders may

be because they are more likely to think that the leadership status of the presidents is related to their intrinsic traits. Relatedly, past research supported the argument that children's explanatory processes shape their proto-political behaviors (Hussak & Cimpian, 2015; Hussak & Cimpian, 2017). That is, when status disparities are explained with external causes (vs. internal causes), children show a tendency to support the status quo less by perceiving high-status groups as less deserving of their social position (Hussak & Cimpian, 2015) and become less opposed to change the current system (Hussak & Cimpian, 2017). This aligns with the main effect of explanation in the current study and accumulates the evidence revealing the existence of cognitive mechanisms (i.e., explanatory processes) that might be underlying children's sociopolitical behaviors.

Interestingly, our results showed that only older children supported leaders with internal explanations more than leaders with external explanations. Younger children did not show a significant difference in their support for the leaders based on explanatory manipulation, and their support was above chance for both leaders. These results contradict past research indicating that different explanatory manipulations (internal vs. external) also influenced younger children's status-quo endorsements. For example, around the age of 4, children's status quo endorsements were significantly higher when they were given internal compared to external explanations (Hussak & Cimpian, 2015; Hussak & Cimpian, 2017), and 6- to 8-years old children chose to rectify the status-quo by allocating less resource to others who previously had more resource due to external reasons (Rizzo et al., 2020). This inconsistency between previous and current research findings can be explained by the potential interference of children's moral development, especially fairness, with their explanatory processes when shaping their political attitudes. In these past

studies, the existence of social disparities gave one group an advantage over another: supporting status-quo meant perpetuating this vivid disadvantage. Thus, perceiving it as unfair could be easier for younger children. Yet in the current study, there is no disadvantaged group since both characters were leaders. The absence of disadvantaged person might be the factor leading younger children to perceive the current social order as more acceptable, hence, to give similar support to both leaders. However, this might not be the case for older children. Since meritocratic thinking and integrating effort into the fairness concept increases with age (Noh et al., 2019), it might be more challenging for older children to perceive status gain without effort as fair and support it. To specify, it might be hard for older children to like people who attain their status due to external causes and see them as deserving of their high status even though they do not see someone negatively affected by this situation. Current study contributes to the developmental literature by highlighting that throughout development, children's moral values, such as prioritizing merit, may interact with their explanatory processes when shaping their proto-political beliefs.

Another striking finding concerned the role of parental education. As parental education increased, children showed a tendency to support leaders less. The reason behind this tendency might be the role of parental education in children's political socialization. Indeed, Flanagan et al. (2014) showed a positive correlation between parent's education level and family discussions about politics and current events. Besides, one study showed that objectively measured SES (income and education) negatively correlated with people's tendency to believe in a just world (Garcia-Sanchez et al., 2020). Therefore, children from more educated families might be more exposed to criticisms about political issues in their homes. Thus, they may perceive the current sociopolitical order as less fixed, endorse the status quo less, and

may be more open to changes in the ongoing political patterns. This finding contributes to the literature on children's political attitudes by showing a potential connection between socialization and early political attitudes and supports the argument that socialization can powerfully shape political behaviors (Reifen-Tagara & Cimpian, 2022). Nevertheless, the current study considered only parental education, not income, which can limit the interpretation of results. Future research should identify which and how parental factors influence children's political behaviors, like endorsement of status-quo or authority support.

3.3 Explanations' influence on children's expectations of leadership stability

Children attributed more stability to the leadership status of presidents with internal explanations than those with external explanations. That is, children thought that leaders who occupied the presidency due to internal reasons were more likely to become leaders in a new city compared to leaders with external explanations. Further, age had no effect on children's stability expectations. These findings are in line with past research revealing that children tended to see properties that were explained with external factors as more mutable than properties that were explained with internal factors (Vasilyeva et al., 2018). To illustrate, Vasilyeva et al. (2018) presented 3- to 6-year-olds with characters who like to play a particular game (property of the character) either due to internal factors (because of their gender) or due to external factors (it was easy to play that game in character's class). Then, they asked children whether the characters would still play this game if they transferred to a different class. All children thought that characters were more likely to continue to play the same game if the initial reason for the game preference was internal (Vasilyeva et al., 2018). The logic behind the current study's stability question was

similar to that of Vasilyeva et al. (2018). Change in the cities implied change in the systems. Thus, a decrease in stability expectations for presidents with external explanations supported the argument that children had the ability to understand external factors, and the outcomes they caused were embedded in the social structures, even in the scope of complex systems like politics.

However, only the older children's stability expectations significantly diverged based on the explanations. Younger children were at chance level in their expectations regarding the stability of the leadership status of both presidents. This finding is inconsistent with Vasilyeva et al. (2018)'s previous findings. This inconsistency might be because reasoning about macro systems like sociopolitical structure can be more challenging than reasoning about personal preferences like enjoying a game. Current study's interaction was partly expected; we hypothesized that younger children would not differ in their stability expectations based on explanations. Yet, we also expected younger children to expect status stability for both leaders because a previous study showed that until the age of 8, children expected wealthy individuals to maintain their high status (Crosby, 2001). The reason for younger children not showing any preference in their stability expectations might also be about younger children's still developing cognitive skills. Reasoning about politics and complex structures is demanding and requires improved decision-making skills like hypothetical reasoning (Patterson et al., 2019). Indeed, some young children showed some confusion in this question by saying that the president would not become a president in the new city if it already had a president, indicating that they might have failed to reason hypothetically. This argument may also explain why we found an interaction between parental education and explanation. Children with highly educated parents expected less stability for

leaders with external explanations than leaders with internal explanations. Past research showed that highly educated parents tend to engage in more causal talk with their children, and the proportion of causal talk was related to children's systematic investigation of physical-causal mechanisms (Callanan et al., 2020). Moreover, a study showed that highly educated parents who majored in engineering or science-related areas encouraged their children's critical thinking and formal reasoning strategies (e.g., hypothesis evaluation) on different topics like the discussion about the builders of Egyptian pyramids (Valle, 2006). Hence, it may be easier for children from highly educated families to form hypotheses about what would happen if the presidents moved out of the new city and test these hypotheses with the evidence (explanations) they had. Political socialization may also interfere with children's hypothetical reasoning abilities. As discussed in the previous section, a positive correlation exists between parents' education and the proportion of discussion about politics at home (Flanagan et al., 2014). Children of these families might have more knowledge about how complex systems work. They might be more knowledgeable about how structural advantages/disadvantages are related to the social systems so they are congruently interconnected, and a change in the system may make these advantages invalid.

3.4 Children's power attribution to leaders

In order to check whether children perceived presidents as high-status individuals, two power questions about resource control were asked. In each question, presidents were accompanied by a different person with lower-status occupation (the welcomer and the notetaker). In one of the scenarios, both characters (the president and the welcomer) wanted to buy the last sandwich in their workplace's cafeteria. In the

other one, both characters (president and notetaker) wanted to get on to the elevator, but there was a place only for one person. When children's answers across two questions collapsed, children's power attribution to leaders was marginally significant. However, a different pattern was observed when children's answers were controlled trial by trial. In the first trial, children thought presidents were more likely to buy the last sandwich or get on the elevator, so they attributed the power to the presidents above chance. However, their power attribution was at the chance level at the second trial.

These results can be explained in different ways. First, looking at the overall collapsed results, it is possible that children did not associate leaders with having higher power. Yet, this contradicts previous literature where children around the age of 5 associated the presidency role with higher prestige (Bigler et al., 2003). Also, some children in the present study explicitly stated that the presidents had higher status than the other workers. Therefore, another explanation can be made by looking at trial-by-trial findings. Children's tendency to associate presidents with higher power only in the first trial cannot be explained by the scenario type since the scenarios were presented in a counterbalanced order. Instead, other methodological limitations might have a role in this pattern, like the number of questions and potential interference from children's fairness concerns. Namely, after attributing power to the president in the first trial, children might consider it unfair to the other employees if the president always has the resources. Therefore, choosing a single question or more than two questions would have been an alternative way to check whether children considered presidents as high status. Besides, some children indicated that they expected presidents intentionally to give resources to the other lower-status employees because presidents should have been considerate of others.

3.5 Limitations and future directions

The current study has limitations that are worth considering. First, all children saw male presidents. The reason behind this choice was the role congruity theory of prejudice (Eagly & Karau, 2002). According to this theory, political environment and roles are strongly associated with masculinity, increasing prejudice against women in politics and causing women to be underrepresented in politics. Supporting gender congruency between males and political roles, children start to associate leadership with boys as they get older (Santhanagopalan et al., 2022). Accordingly, changing the gender of the presidents according to children's gender could have led to confounds. Thus, we kept the gender of the presidents constant across children. Yet, the generalizability of the current study's findings is limited since it may only reflect children's evaluations of stereotypical leaders. Future studies should investigate whether the role of attributional processes in children's evaluations of leaders shows differences based on the gender of the leader. For instance, one might expect children to evaluate a woman taking advantage of external factors to become a leader more negatively than a man doing the same.

Another limitation was that parental education was the only parental factor used in the current study. Many parents did not provide income information or fill out the MacArthur SES scale (Adler et al., 2000). Nevertheless, investigating the effect of multiple parental factors on children's status-based attitudes and proto-political behaviors might help better understand the role of political socialization in this process. Having said this, coherently evaluating multiple information related to socioeconomic status might be challenging in the case of Turkey. Turkey is among the countries with the highest wage inequality in Europe (Torul & Öztunalı, 2018). Notably, after 2012, the increase in the real wages of people with higher education

started to slow down (Bakis & Polat, 2023). One explanation for this stagnation is the rapid increase in the number of universities without enough funding, equipment, and institutional planning (Popli & Yilmaz, 2017). This development is one of the factors behind the drastic differences in the qualifications of and income people with similar higher education (Bakis & Polat, 2023; Popli & Yilmaz, 2017). Therefore, the income and the education information might not correlate and provide congruent measurements of people's socioeconomic status in Turkey. Another factor that can be critically relevant to this study's findings is the parent's political orientation, especially toward social dominance (SDO). Past research showed that children's reactions to unequal resource distribution were predicted by their parent's SDO scores (Reifen-Tagar et al., 2017). A fruitful follow-up could investigate how parents' orientation in social dominance affects the role of attributional biases in children's status-based attitudes and proto-political behaviors. Since people high in SDO consider social stratification as natural (see Reifer-Tagan & Cimpian, 2022; Sidanius & Pratto, 1999), their children might think that taking advantage of external or structural factors to attain status is more acceptable than children with parents low in SDO. Another potential direction can be measuring parents' authoritarianism levels and investigating whether it affects children's evaluations of leaders. People with high authoritarian beliefs tend to emphasize the importance of group cohesion and strong authority (e.g., Kessler & Chors, 2008). Therefore, children from households with strong authoritarian beliefs might hold higher positivity toward authority figures or abstain from not supporting the current leaders.

In the current study, children were presented with only high-status occupations. Future studies should investigate the effects of different causal attributions regarding attaining low-status occupations. Finally, as mentioned in the

previous sections, a current study presented children with only two presidents. However, including a third president without any explanation regarding the role attainment process could provide a baseline measurement of children's evaluations of leaders.

3.6 Conclusions

This study aimed to understand how different causal attributions influence children's evaluations of political leaders. Results showed that internal attributions led children to evaluate leaders more positively by inferring success and intelligence and supporting leaders more. However, age-related changes in the results, particularly findings from children's stability expectations, implied that children's attitudes are not merely driven by attributional tendencies or positivity toward high status others. In fact, their attitudes toward leaders reflected a potential complex interplay between children's socialization processes, developing cognitive abilities, and moral development, in addition to their attributional biases.

APPENDIX A

ETHICS COMMITTEE APPROVAL

Evrak Tarih ve Sayısı: 24.01.2023-109744

T.C.
BOĞAZİÇİ ÜNİVERSİTESİ
SOSYAL VE BEŞERİ BİLİMLER YÜKSEK LİSANS VE DOKTORA TEZLERİ ETİK İNCELEME KOMİSYONU
TOPLANTI KARAR TUTANAĞI

Toplantı Sayısı	:	39
Toplantı Tarihi	:	18.01.2023
Toplantı Saati	:	16:00
Toplantı Yeri	:	Zoom Sanal Toplantı
Bulunanlar	:	Prof. Dr. Feyza Çorapçı, Dr. Öğr. Üyesi Yasemin Sohtorik İlkmen, Dr. Öğr. Üyesi Ayşegül Metindoğan
Bulunmayanlar	:	Dr. Öğr. Üyesi Harun Muratoğulları, Doç. Dr. Arhan S. Ertan, Doç. Dr. Senem Yıldız

Duygu Yılmaz
Psikoloji

Sayın Araştırmacı,

"Nedensel Açıklamaların Çocukların Liderler Hakkındaki Çıkarımlarında Rolü" başlıklı projeniz ile ilgili olarak yaptığınız SBB-EAK 2023/05 sayılı başvuru komisyonumuz tarafından 18 Ocak 2023 tarihli toplantıda incelenmiş ve uygun bulunmuştur.

Bu karar üyelerin toplantıya çevrimiçi olarak katılımı ve oy birliği ile alınmıştır. Onay mektubu üye ve raportör olarak Yasemin Sohtorik İlkmen tarafından toplantıya katılan bütün üyeler adına e-imzalanmıştır.

Saygılarımızla, bilgilerinizi rica ederiz.

Dr. Öğr. Üyesi Yasemin
SOHTORİK İLKMEN
Öğretim Üyesi

e-imzalıdır
Dr. Öğr. ÜyesiYasemin Sohtorik
İlkmen
Öğretim Üyesi
Raportör

SOBETİK 39 18.01.2023

Bu belge, güvenli elektronik imza ile imzalanmıştır.

APPENDIX B

PARENTAL QUESTIONNAIRE

1. Çocuğunuzun cinsiyeti: K ☐ E ☐ Çocuğunuzun doğum tarihi: _____/_____/_____

2. Çocuğunuzda bilinen herhangi bir görme ya da işitme bozukluğu var mı? c Evet c Hayır

   Eğer varsa, lütfen açıklayın:

_____

3. Çocuğunuzun gelişimi hakkında herhangi bir endişeniz var mı? c Evet c Hayır

   Eğer varsa, lütfen açıklayın:

_____

Ebeveyn 1

4. Cinsiyet: K ☐ E ☐ Doğum tarihi ve yeri: _____/_____/_____,_____

5. Anadil(ler)i: _____

6. Mesleği: _____

7. Eğitim seviyesi: ☐ İlkokul-ortaokul mezunu ☐ Lise terk ☐ Lise mezunu

   ☐ Üniversite terk ☐ Lisans mezunu ☐ Yüksek Lisans mezunu
   ☐ Doktora mezunu
   ☐ Diğer profesyonel aktiviteler (lütfen açıklayın: _____)
   ☐ Diğer (lütfen açıklayın: _____)

Ebeveyn 2

8. Cinsiyet: K☐ E ☐ Doğum tarihi ve yeri: _____/_____/_____,_____

9. Anadil(ler)i: _____

10. Mesleği: _____

11. Eğitim seviyesi: ☐ İlkokul-ortaokul mezunu ☐ Lise terk ☐ Lise mezunu

    ☐ Üniversite terk ☐ Lisans mezunu ☐ Yüksek Lisans mezunu
    ☐ Doktora mezunu

☐ Diğer profesyonel aktiviteler (lütfen açıklayın_____)

☐ Diğer (lütfen açıklayın: _____

12. Çalışmalarımız tamamlandığında sonuçlarımızı sizinle paylaşmamızı isterseniz lütfen e-posta adresinizi belirtiniz:

_____

13. İleride çocuğunuzun uygun olabileceği başka çalışmalar için çocuğunuzun ismini veri tabanımıza eklememizi ve sizi bu çalışmalardan haberdar etmemizi ister misiniz?

☐ Evet ☐ Hayır

14. Cevabınız evet ise, sizinle nasıl iletişime geçmemizi tercih edersiniz?

☐ E-posta ☐ Telefon

15. Eğer telefonu tercih ediyorsanız, lütfen telefon numaranızı belirtiniz:

_____

16. Eğer telefonu tercih ediyorsanız, günün hangi saatlerinde sizinle iletişime geçebileceğimizi lütfen belirtin:

☐ Gündüz ☐ Öğleden sonra ☐ Akşam

17. Hanenizin ortalama yıllık gelirinin aşağıdaki aralıklardan hangisinde bulunduğunu lütfen işaretleyiniz:

☐ 100.000 TL ve altı

☐ 100.000 TL – 200.000 TL

☐ 200.000 TL – 300.000 TL

☐ 300.000 TL – 400.000 TL

☐ 400.000 TL – 500.000 TL

☐ 500.000 TL – 600.000 TL

☐ 600.000 TL – 700.000 TL

☐ 700.000 TL – 800.000 TL

☐ 800.000 TL ve üzeri

☐ Cevaplamak istemiyorum.

18. Yandaki merdivenin Türkiye'de insanların sosyal ve ekonomik olarak bulunduğu konumları temsil ettiğini düşünün. Merdivenin en üst basamağında sosyo-ekonomik olarak en iyi durumda olan yani en çok paraya, en yüksek eğitim seviyesine ve en saygı duyulan mesleklere sahip kişiler var. Merdivenin en alt basamağında ise; sosyo-ekonomik olarak en kötü durumda olanlar yani, en az paraya en düşük eğitim seviyesine, en az saygı duyulan mesleklere sahip ya da işsizler var. Merdivende ne kadar üst basamaktaysanız, en iyi durumda olan kişilere o kadar yakınsınız, merdivende ne kadar alt basamaktaysanız, en kötü durumda olan kişilere o kadar yakınsınız demektir. Kendinizi bu merdivenin hangi basamağına konumlandırırdınız? Lütfen yaşamınızın bu döneminde Türkiye'deki diğer insanlara kıyasla kendinizi merdivenin hangi basamağında gördüğünüzü, o basamağı temsil eden sayıyı aşağıdaki ölçekte işaretleyerek belirtiniz.

☐ 1
☐ 2
☐ 3
☐ 4
☐ 5
☐ 6
☐ 7
☐ 8
☐ 9
☐ 10
☐ Cevaplamak istemiyorum

APPENDIX C

SCENARIOS (TURKISH)

Başkanların Tanıtımı (Giriş):

Bu oyunda sana farklı şehirler göstereceğim. Her şehirde, o şehir ile ilgili önemli kararları 1 başkan var. Ve sana bu başkanlarla ilgili ne düşündüğünü soracağım. Yanlış ya da doğru cevap yok, sadece ne düşündüğünü merak ediyorum. Bak bunlar bugün sana göstereceğim başkanlar. Sana onlarla ilgili bir şey söylemek istiyorum. Bu başkanların çok fazla benzer özellikleri var. Fakat çok önemli bir farklılıkları var, ikisinin de başkan olma nedenleri farklı.

Bak bu T. T bir şehrin başkanı çünkü T çalışkan ve sorumluluk sahibi birisi.

Bak bu B. B bu şehrin başkanı çünkü B'nin zengin bir ailesi var ve B büyük bir şehirde büyüdü.

Gel hadi şehirleri ve başkanlarını tanıyalım.

İçsel Sebeplerden Başkan Olunan Senaryo:

Bak burası çok uzaklardaki bir şehir. Bu şehirde insanlar şehirlerini iyileştirmek için birlikte para biriktiriyorlar. Bak burası onların biriktirdikleri parayı koydukları yer. Burada çalışan, biriken paradan ve şehri yönetmekten sorumlu bir şehir başkanı var. Bu başkan şehir ile ilgili önemli işleri yapıyor mesela şehrin parasıyla nerelere yollar yapılacağına karar veriyor.

Bak bu T. T bu şehrin başkanı. Bu şehri T yönetiyor, mesela şehrin parasının nasıl kullanılacağına, nerelere yollar yapılacağına T karar veriyor. T bu şehrin başkanı çünkü T çalışkan ve sorumluluk sahibi birisi.

Dışsal Sebeplerden Başkan Olunan Senaryo:

Bak burası çok uzaklardaki bir şehir. Bu şehirde insanlar şehirlerini iyileştirmek için birlikte para biriktiriyorlar. Bak burası onların biriktirdikleri parayı koydukları yer. Burada çalışan, biriken paradan ve şehri yönetmekten sorumlu bir şehir başkanı var. Bu başkan şehir ile ilgili önemli işleri yapıyor mesela şehrin parasıyla nerelere yollar yapılacağına karar veriyor.

Bak bu B. B bu şehrin başkanı. Bu şehri B yönetiyor, mesela şehrin parasının nasıl kullanılacağına, nerelere yollar yapılacağına B karar veriyor. B bu şehrin başkanı çünkü B'nin zengin bir ailesi var ve B büyük bir şehirde büyüdü

Test Soruları (1-5 ölçek üzerinde):

1. Sence T/B başkan olmayı ne kadar hak ediyor?
2. Sence T/Bnin çalıştığı şehirde yaşayanlar T'ye ne kadar güveniyor?
3. Sence T/B çalıştığı şehri ne kadar iyi yönetiyor?
4. Sence T/Bnin çalıştığı şehirde yaşayan insanlar ne kadar mutlu?
5. Diyelim ki T/B yeni bir şehre taşındı ve orada yaşamaya başladı. Sence T orada da başkan olabilir mi?
6. Peki sence T/B ne kadar akıllı?
7. Peki sen T/Byi ne kadar sevdin?

Test Sorusu (çoktan seçmeli):

Bak sana tanıttığım başkanları bir de yan yana görelim ve kim olduklarını hatırlayalım.

Bak bu T, T şehir başkanı çünkü T çalışkan ve sorumluluk sahibi birisi.

Bak bu B, B başka bir şehrin başkanı çünkü B'nin zengin bir ailesi var ve B büyük bir şehirde büyüdü.

Sence bu iki başkandan hangisi çalıştığı şehri daha iyi yönetiyordur?

Manipülasyon Kontrol Senaryoları ve Soruları:

1. Bak bunlar farklı iki kişi. İkisi de aynı yerde çalışıyor. Burası onların çalıştığı yer .

   Bu kişi L, L o binada çalışan karşılayıcı. Her gün iş yerine gelen kişilere kapıyı açıyor, onları kapıda karşılıyor.

   Bak bu K, K o binada çalışan şehir başkanı. şehri K yönetiyor ve şehrin parasının nasıl kullanılacağına karar veriyor.

   Bir gün ikisi de iş yerindeki kantinde tost almak istedi. Ancak bir tane tost kalmıştı. Sadece alabildi. Sence tostu kim aldı? Karşılayıcı mı yoksa şehir başkanı mı?

2. Bak bunlar farklı iki kişi. İkisi de aynı yerde çalışıyor. Burası onların çalıştığı yer.

   Bu kişi S, S o binada çalışan not alıcı. Her gün iş yerine gelen insanları dinliyor ve söylenilenleri not alıyor

   Bak bu M, M o binada çalışan şehir başkanı. şehri M yönetiyor ve şehrin parasının nasıl kullanılacağına karar veriyor.

   Bir gün bu iki kişi de iş yerindeki asansörü kullanmak istedi. Ancak asansörde sadece bir kişilik yer vardı ve sadece biri asansöre binebildi. Sence kim bindi? Not alıcı mı yoksa şehir başkanı mı?

REFERENCES

Ahl, R. E., & Dunham, Y. (2019). "Wealth makes many friends": Children expect more giving from resource-rich than resource-poor individuals. *Child Development, 90*(2), 524–543. https://doi.org/10.1111/cdev.12922

Akkoyunlu K., & Öktem K., (2016) Existential insecurity and the making of a weak authoritarian regime in Turkey. *Southeast European and Black Sea Studies, 16(4),* 505-527. https://doi.org/10.1080/14683857.2016.1253225

Amemiya, J., Mortenson, E., Heyman, G. D., & Walker, C. M. (2022). Thinking structurally: A cognitive framework for understanding how people attribute inequality to structural causes. *Perspectives on Psychological Science, 18*(2) 259–274. https://doi.org/10.1177/17456916221093593

Anderson, C., Hildreth, J. A. D., & Howland, L. (2015). Is the desire for status a fundamental human motive? A review of the empirical literature. *Psychological Bulletin, 141*(3), 574–601. https://doi.org/10.1037/a0038781

Bakis, O., Polat, S. (2023). Wage inequality dynamics in Turkey. *Empirica 50,* 657–694. https://doi.org/10.1007/s10663-023-09579-8

Bernard, S., Castelain, T., Mercier, H., Kaufmann, L., Van der Henst, J. B., & Clément, F. (2016). The boss is always right: Preschoolers endorse the testimony of a dominant over that of a subordinate. *Journal of Experimental Child Psychology, 152*, 307-317. https://doi.org/10.1016/j.jecp.2016.08.007

Betz, T., & Kayser, L. B. (2017). Children and society: Children's knowledge about inequalities, meritocracy, and the interdependency of academic achievement, poverty, and wealth. *American Behavioral Scientist, 61*(2), 186-203. https://doi.org/10.1177/0002764216689121

Brescoll, V. L., Dawson, E., & Uhlmann, E. L. (2010). Hard won and easily lost: The fragile status of leaders in gender-stereotype-incongruent occupations. *Psychological Science, 21*(11), 1640-1642. https://doi.org/10.1177/0956797610384744

Browman, A. S., Destin, M., Kearney, M. S., & Levine, P. B. (2019). How economic inequality shapes mobility expectations and behaviour in disadvantaged youth. *Nature Human Behaviour*, *3*(3), 214-220. https://doi.org/10.1038/s41562-018-0523-0

Bigler, R. S., Averhart, C. J., & Liben, L. S. (2003). Race and the workforce: Occupational status, aspirations, and stereotyping among African American children. *Developmental Psychology, 39*(3), 572–580. https://doi.org/10.1037/0012-1649.39.3.572

Bigler, R. S., Arthur, A. E., Hughes, J. M., & Patterson, M. M. (2008). The politics of race and gender: Children's perceptions of discrimination and the US presidency. *Analyses of Social Issues and Public Policy, 8*(1), 83-112. https://doi.org/10.1111/j.1530-2415.2008.00161.x

Carnes, N. (2018). *The cash ceiling: Why only the rich run for office--and what we can do about it*. Princeton University Press. http://www.jstor.org/stable/j.ctv39x4w6

Callanan, M. A., Legare, C. H., Sobel, D. M., Jaeger, G. J., Letourneau, S., McHugh, S. R., Willard, A., Brinkman, A., Finiasz, Z., Rubio, E., Barnett, A., Gose, R., Martin, J. L., Meisner, R., & Watson, J. (2020). Exploration, explanation, and parent–child interaction in museums. *Monographs of the Society for Research in Child Development*, *85*(1), 7-137. https://doi.org/10.1111/mono.12412

Charafeddine, R., Zambrana, I. M., Triniol, B., Mercier, H., Clément, F., Kaufmann, L., ... & der Henst, V. (2020). How preschoolers associate power with gender in male-female interactions: A cross-cultural investigation. *Sex Roles, 83*(7), 453-473. https://doi.org/10.1007/s11199-019-01116-x

Charafeddine, R., Mercier, H., Clément, F., Kaufmann, L., Berchtold, A., Reboul, A., & Van der Henst, J.-B. (2015). How preschoolers use cues of dominance to make sense of their social environment. *Journal of Cognition and Development, 16*(4), 587607. https://doi.org/10.1080/15248372.2014.926269

Clément, F., Bernard, S., & Kaufmann, L. (2011). Social cognition is not reducible to theory of mind: When children use deontic rules to predict the behaviour of others. *British Journal of Developmental Psychology, 29*(4), 910–928. https://doi.org/10.1111/j.2044-835X.2010.02019.x

Cimpian, A., & Salomon, E. (2014). The inherence heuristic: an intuitive means of making sense of the world, and a potential precursor to psychological essentialism. *The Behavioral and Brain Sciences*, *37*(5), 461–480. https://doi.org/10.1017/S0140525X13002197

Cimpian, A., & Steinberg, O. D. (2014). The inherence heuristic across development: Systematic differences between children's and adults' explanations for everyday facts. *Cognitive Psychology*, *75*, 130–154. https://doi.org/10.1016/j.cogpsych.2014.09.001

Crosby, D. A. (2001). *Children's causal attributions for economic inequality: Relation to age and socioeconomic environments.* Doctoral Dissertation. ProQuest Information & Learning. (2001-95010-241)

Dunlea, J. P., & Heiphetz, L. (2020). Children's and adults' understanding of punishment and the criminal justice system. *Journal of Experimental Social Psychology*, *87*, Article 103913. https://doi.org/10.1016/j.jesp.2019.103913

Dunlea, J. P., & Heiphetz, L. (2022). Language shapes children's attitudes: Consequences of internal, behavioral, and societal information in punitive and nonpunitive contexts. *Journal of Experimental Psychology. General*, *151*(6), 1233–1251. https://doi.org/10.1037/xge0001127

Davoodi, T., Soley, G., Harris, P. L., & Blake, P. R. (2020). Essentialization of social categories across development in two cultures. *Child Development*, *91*(1), 289–306. https://doi.org/10.1111/cdev.13209

Eagly, A. H., & Carli, L. L. (2007). Women and the labyrinth of leadership. *Harvard Business Review*, *85*(9), 62–146.

Eagly, A. H., & Karau, S. J. (2002). Role congruity theory of prejudice toward female leaders. *Psychological Review*, *109*(3), 573–598. https://doi.org/10.1037/0033-295x.109.3.573

Enright, E. A., Alonso, D. J., Lee, B. M., & Olson, K. R. (2020). Children's understanding and use of four dimensions of social status. *Journal of Cognition and Development*, *21*(4), 573-602

Elenbaas, L., Rizzo, M. T., Cooley, S., & Killen, M. (2016). Rectifying social inequalities in resource allocation task. *Cognition,155*, 176187. https://doi.org/10.1016/j.cognition.2016.07.002

Elenbaas, L., & Killen, M. (2016). Children rectify inequalities for disadvantaged groups. *Developmental Psychology, 52*(8), 1318–1329. https://doi.org/10.1037/dev0000154

Elenbaas, L., Rizzo, M. T., & Killen, M. (2020). A developmental-science perspective on social inequality. *Current Directions in Psychological Science, 29*(6), 610-616. https://doi.org/10.1177/0963721420964147

Fujishiro, K., Xu, J., & Gong, F. (2010). What does "occupation" represent as an indicator of socioeconomic status?: Exploring occupational prestige and health. *Social Science & Medicine, 71*(12), 2100-2107. https://doi.org/10.1016/j.socscimed.2010.09.026

Fiske, S. T. (2010). Interpersonal stratification: Status, power, and subordination. In S. T. Fiske, D. T. Gilbert, & G. Lindzey (Eds.), *Handbook of Social Psychology* (pp. 941–982). John Wiley & Sons, Inc. https://doi.org/10.1002/9780470561119.socpsy002026

Fiske, S. T., Cuddy, A. J., & Glick, P. (2007). Universal dimensions of social cognition: Warmth and competence. *Trends in Cognitive Sciences, 11*(2), 77-83. https://doi.org/10.1016/j.tics.2006.11.005

Flanagan, C. A., & Tucker, C. J. (1999). Adolescents' explanations for political issues: Concordance with their views of self and society. *Developmental Psychology, 35*(5), 1198–1209. https://doi.org/10.1037/0012-1649.35.5.1198

Flanagan, C. A., Kim, T., Pykett, A., Finlay, A., Gallay, E. E., & Pancer, M. (2014). Adolescents' theories about economic inequality: why are some people poor while others are rich?. *Developmental Psychology, 50*(11), 2512–2525. https://doi.org/10.1037/a0037934

Foster-Hanson, E., & Rhodes, M. (2019). Normative social role concepts in early childhood. *Cognitive Science, 43*(8), e12782. https://doi.org/10.1111/cogs.12782

Garfield, Z. H., Hubbard, R. L., & Hagen, E. H. (2019). Evolutionary models of leadership : Tests and synthesis. *Human Nature (Hawthorne, N.Y.), 30*(1), 23–58. https://doi.org/10.1007/s12110-019-09338-4

García- Sánchez, E., Osborne, D., Willis, G. B., & Rodríguez- Bailón, R. (2020). Attitudes towards redistribution and the interplay between perceptions and beliefs about inequality. *British Journal of Social Psychology, 59*(1), 111–136. https://doi.org/10.1111/bjso.12326

Gelman, S. A. (2003). *The essential child: Origins of essentialism in everyday thought*. USA: Oxford University Press. https://doi.org/10.1093/acprof:oso/9780195154061.001.0001

Gilbert, M. (2013). *Joint commitment: How we make the social world*. Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199970148.001.0001

Goodman, M. D., & Gareis, K. C. (1993). The influence of status on decisions to help. *The Journal of Social Psychology, 133*(1), 23 31.https://doi.org/10.1080/00224545.1993.9712115

Gottfredson, L. S. (1981). Circumscription and compromise: A developmental theory of occupational aspirations. *Journal of Counseling Psychology, 28*(6), 545–579. https://doi.org/10.1037/0022-0167.28.6.545

Goudeau, S., & Cimpian, A. (2021). How do young children explain differences in the classroom? Implications for achievement, motivation, and educational equity. *Perspectives on Psychological Science, 16*(3), 533–552. https://doi.org/10.1177/1745691620953781

Goudeau, S., Sanrey, C., Autin, F., Stephens, N. M., Markus, H. R., Croizet, J. C., & Cimpian, A. (2023). Unequal opportunities from the start: Socioeconomic disparities in classroom participation in preschool. *Journal of Experimental Psychology. General*, 10.1037/xge0001437. Advance online publication. https://doi.org/10.1037/xge0001437

Gruenfeld, D. H., & Tiedens, L. Z. (2010). Organizational preferences and their consequences. In S. T. Fiske, D. T. Gilbert, & G. Lindzey (Eds.), *Handbook of Social Psychology* (pp. 1252–1287). John Wiley & Sons, Inc. https://doi.org/10.1002/9780470561119.socpsy002033

Gülgöz, S., & Gelman, S. A. (2017). Who's the boss? Concepts of social power across development. *Child Development, 88*(3), 946–963.https://doi.org/10.1111/cdev.12643

Hauser, R. M., & Warren, J. R. (1997). Socioeconomic indexes for occupations: A review, update, and critique. *Sociological Methodology*, *27*(1), 177-298. https://doi.org/10.1111/1467-9531.271028

Haslanger, S. (2016). What is a (social) structural explanation?. *Philosophical Studies*, *173*(1), 113-130. https://doi.org/10.1007/s11098-014-0434-5

Halevy, N., & Chou, Y. E., & D. Galinsky, A.(2011). A functional model of hierarchy. *Organizational Psychology Review*, *1*(1), 32-52. https://doi.org/10.1177/2041386610380991

Hällsten, M., & Pfeffer, F. T. (2017). Grand advantage: Family wealth and grandchildren's educational achievement in Sweden. *American Sociological Review*, *82*(2), 328–360. https://doi.org/10.1177/0003122417695791

Henrich, J., & Gil-White, F. J. (2001). The evolution of prestige: freely conferred deference as a mechanism for enhancing the benefits of cultural transmission. *Evolution and Human Behavior : Official Journal of the Human Behavior and Evolution Society*, *22*(3), 165–196. https://doi.org/10.1016/s1090-5138(00)00071-4

Hussak, L. J., & Cimpian, A. (2015). An early-emerging explanatory heuristic promotes support for the status quo. *Journal of Personality and Social Psychology, 109*(5), 739-752. http://dx.doi.org/10.1037/pspa0000033

Hussak, L. J., & Cimpian, A. (2018). Investigating the origins of political views: biases in explanation predict conservative attitudes in children and adults. *Developmental Science, 21*(3), e12567. https://doi.org/10.1111/desc.12567

Jost, J. T., & Banaji, M. R. (1994). The role of stereotyping in system-justification and the production of false consciousness. *British Journal of Social Psychology, 33*(1), 1–27. https://doi.org/10.1111/j.2044-8309.1994.tb01008.x

Kalish, C. W. (2013). Status seeking: The importance of roles in early social cognition. In M. R. Banaji & S. A. Gelman (Eds.), *Navigating the social world: What infants, children, and other species can teach us* (pp. 216–219). Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199890712.003.0039

Kalish, C. W., & Lawson, C. A. (2008). Development of social category representations: early appreciation of roles and deontic relations. *Child Development*, *79*(3), 577–593. https://doi.org/10.1111/j.1467-8624.2008.01144.x

Kajanus, A., Afshordi, N., & Warneken, F. (2020). Children's understanding of dominance and prestige in China and the UK. *Evolution and Human Behavior*, *41*(1), 23-34. https://doi.org/10.1016/j.evolhumbehav.2019.08.002

Kessler, T., & Cohrs, J. C. (2008). The evolution of authoritarian processes: Fostering cooperation in large-scale groups. *Group Dynamics: Theory, Research, and Practice*, *12*(1), 73–84. https://doi.org/10.1037/1089-2699.12.1.73

Koski, J. E., Xie, H., & Olson, I. R. (2015). Understanding social hierarchies: The neural and psychological foundations of status perception. *Social Neuroscience*, *10*(5), 527–550. https://doi.org/10.1080/17470919.2015.1013223

Kinder, D. R., Peters, M. D., Abelson, R. P., & Fiske, S. T. (1980). Presidential prototypes. *Political Behavior*, *2*(4), 315-337. https://doi.org/10.1007/BF00990172

Leslie, S. (2015). "Hillary Clinton is the only man in the Obama administration": Dual character concepts, generics, and gender. *Analytic Philosophy*, *56*, 111-141.

Lareau, A. (2011). *Unequal childhoods: class, race, and family life.* 2nd ed., with an update a decade later. Berkeley, University of California Press.

Li, V., Spitzer, B., & Olson, K. R. (2014). Preschoolers reduce inequality while favoring individuals with more. *Child Development*, *85*(3),1123 1133.https://doi.org/10.1111/cdev.12198

Liben, L. S., Bigler, R. S., & Krogh, H. R. (2001). Pink and blue collar jobs: Children's judgments of job status and job aspirations in relation to sex of worker. *Journal of Experimental Child Psychology*, *79*(4), 346-363. https://doi.org/10.1006/jecp.2000.2611

Margoni, F., Nava, E., & Surian, L. (2022). Do children selectively trust leaders and prosocial agents in an economic exchange?. *Developmental Psychology*, *58*(1), 152–160. https://doi.org/10.1037/dev0001282

Mandalaywala, T. M., Tai, C., & Rhodes, M. (2020). Children's use of race and gender as cues to social status. *PloS one*, *15*(6), e0234398. https://doi.org/10.1371/journal.pone.0234398

Mazur, A. (1985). A biosocial model of status in face-to-face primate groups. *Social Forces, 64*(2), 377–402. https://doi.org/10.2307/2578647

Mistry, R. S., Brown, C. S., White, E. S., Chow, K. A., & Gillen-O'Neel, C. (2015). Elementary school children's reasoning about social class: A mixed-methods study. *Child Development*, *86*(5), 1653–1671. https://doi.org/10.1111/cdev.12407

Muentener, P., & Schulz, L. (2014). Toddlers infer unobserved causes for spontaneous events. *Frontiers in Psychology*, *5*, 1496. https://doi.org/10.3389/fpsyg.2014.01496

Muradoglu, M., Cimpian, J. R., & Cimpian, A. (2023). Mixed-effects models for cognitive development researchers. *Journal of Cognition and Development*, 1-34. https://doi.org/10.1080/15248372.2023.2176856

Noyes, A., Keil, F. C., & Dunham, Y. (2020). Institutional actors: Children's emerging beliefs about the causal structure of social roles. *Developmental Psychology*, *56*(1), 70–80. https://doi.org/10.1037/dev0000847

Noyes, A., & Keil, F. C. (2020). Collective recognition and function in concepts of institutional social groups. *Journal of Experimental Psychology. General*, *149*(7), 1344–1359. https://doi.org/10.1037/xge0000711

Noyes, A., Dunham, Y., Keil, F. C., & Ritchie, K. (2021). Evidence for multiple sources of inductive potential: Occupations and their relations to social institutions. *Cognitive Psychology*, *130*, 101422. https://doi.org/10.1016/j.cogpsych.2021.101422

Noh, J. Y., D'Esterre, A., & Killen, M. (2019). Effort or outcome? Children's meritorious decisions. *Journal of Experimental Child Psychology, 178*, 1–14. https://doi.org/10.1016/j.jecp.2018.09.005

Oldmeadow, J., & Fiske, S. T. (2007). System-justifying ideologies moderate status = competence stereotypes: Roles for belief in a just world and social dominance orientation. *European Journal of Social Psychology, 37*(6), 1135–1148. https://doi.org/10.1002/ejsp.428

Olson, K. R., Dweck, C. S., Spelke, E. S., & Banaji, M. R. (2011). Children's responses to group-based inequalities: Perpetuation and rectification. *Social Cognition, 29*(3), 270–287. https://doi.org/10.1521/soco.2011.29.3.270

Organization for Economic Co-operation and Development (OECD). (2015). *Sigma baseline measurement report: Principles of public administration (Turkey).* Paris, France: OECD. Retrieved from http://www.sigmaweb.org/publications/Baseline-Measurement-2015-Turkey.pdf

Owens, A. (2016). Inequality in children's contexts: Income segregation of households with and without children. *American Sociological Review, 81*(3), 549–574. https://doi.org/10.1177/0003122416642430

Patterson, M. M., Bigler, R. S., Pahlke, E., Brown, C. S., Hayes, A. R., Ramirez, M. C., & Nelson, A. (2019). Toward a developmental science of politics. *Monographs of the Society for Research in Child Development, 84*(3), 7-185. https://doi.org/10.1111/mono.12410

Peretz-Lange, R., Perry, J., & Muentener, P. (2021). Developmental shifts toward structural explanations and interventions for social status disparities. *Cognitive Development, 58*, 101042. https://doi.org/10.1016/j.cogdev.2021.101042

Peretz-Lange, R. (2021). Why does social essentialism sometimes promote, and other times mitigate, prejudice development? A causal discounting perspective. *Cognitive Development, 59*, 101085. https://doi.org/10.1016/j.cogdev.2021.101085

Peretz-Lange, R., Pitt, E., & Coley, J. D. (2023). How does higher education in the social sciences impact social essentialist thinking? *Proceedings of the Annual Meeting of the Cognitive Science Society*, 45.

Pfeffer F. T. (2018). Growing wealth gaps in education. *Demography, 55*(3), 1033–1068. https://doi.org/10.1007/s13524-018-0666-7

Pun, A., Birch, S. A., & Baron, A. S. (2016). Infants use relative numerical group size to infer social dominance. *Proceedings of the National Academy of Sciences of the United States of America*, *113*(9), 2376–2381. https://doi.org/10.1073/pnas.1514879113

Popli, G., & Yılmaz, O. (2017). Educational attainment and wage inequality in Turkey. *LABOUR*, *31*(1), 73-104. https://doi.org/10.1111/labr.12083

Ratcliff, N. J., Hugenberg, K., Shriver, E. R., & Bernstein, M. J. (2011). The allure of status: high-status targets are privileged in face processing and memory. *Personality & Social Psychology Bulletin*, *37*(8), 1003–1015. https://doi.org/10.1177/0146167211407210

Reifen- Tagar, M., & Cimpian, A. (2022). Political ideology in early childhood: Making the case for studying young children in political psychology. *Political Psychology*, *43*, 77-105. https://doi.org/10.1111/pops.12853

Rhodes, M., & Mandalaywala, T. M. (2017). The development and developmental consequences of social essentialism. *Wiley Interdisciplinary Reviews: Cognitive Science*, *8*(4), e1437.

Rhodes, M., Leslie, S. J., Saunders, K., Dunham, Y., & Cimpian, A. (2018). How does social essentialism affect the development of inter-group relations?. *Developmental Science*, *21*(1), 10.1111/desc.12509. https://doi.org/10.1111/desc.12509

Rizzo, M. T., Green, E. R., Dunham, Y., Bruneau, E., & Rhodes, M. (2022). Beliefs about social norms and racial inequalities predict variation in the early development of racial bias. *Developmental Science*, *25*(2), e13170. https://doi.org/10.1111/desc.13170

Rizzo, M. T., Elenbaas, L., & Vanderbilt, K. E. (2020). Do children distinguish between resource inequalities with individual versus structural origins?. *Child Development*, *91*(2), 439–455. https://doi.org/10.1111/cdev.13181

Rizzo, M. T., & Killen, M. (2020). Children's evaluations of individually and structurally based inequalities: The role of status. *Developmental Psychology*, *56*(12), 2223–2235. https://doi.org/10.1037/dev0001118

Roussos, G., & Dunham, Y. (2016). The development of stereotype content: The use of warmth and competence in assessing social groups. *Journal of Experimental Child Psychology, 141*, 133–144. https://doi.org/10.1016/j.jecp.2015.08.009

Sapolsky R. M. (2005). The influence of social hierarchy on primate health. *Science 308*(5722), 648–652. https://doi.org/10.1126/science.1106477

Savin-Williams, R. C. (1979). Dominance hierarchies in groups of early adolescents. *Child Development, 50*(4), 923–935. https://doi.org/10.2307/1129316

Schulz, L. E., & Sommerville, J. (2006). God does not play dice: causal determinism and preschoolers' causal inferences. *Child Development, 77*(2), 427–442. https://doi.org/10.1111/j.1467-8624.2006.00880.x

Searle, J. (2010). *Making the social world: The structure of human civilization*. Oxford University Press. https://doi.org/10.1093/acprof:osobl/9780195396171.001.0001

Searle, J. R., & Willis, Y. S. (1995). *The construction of social reality*. Simon and Schuster.

Shutts, K., & Kalish, C. W. (2021). Intuitive sociology. In *Advances in Child Development and Behavior* (Vol. 61, pp. 335-374). JAI.

Shutts, K., Brey, E. L., Dornbusch, L. A., Slywotzky, N., & Olson, K. R. (2016). Children use wealth cues to evaluate others. *PloS one, 11*(3), e0149360. https://doi.org/10.1371/journal.pone.0149360

Santhanagopalan, R., DeJesus, J. M., Moorthy, R. S., & Kinzler, K. D. (2021). Nationality cognition in India: Social category information impacts children's judgments of people and their national identity. *Cognitive Development, 57*, 100990. https://doi.org/10.1016/j.cogdev.2020.100990

Santhanagopalan, R., Heck, I. A., & Kinzler, K. D. (2022). Leadership, gender, and colorism: Children in India use social category information to guide leadership cognition. *Developmental Science*, 25, e13212. https://doi.org/10.1111/desc.13212

Sigelman C. K. (2012). Rich man, poor man: developmental differences in attributions and perceptions. *Journal of Experimental Child Psychology*, *113*(3), 415–429. https://doi.org/10.1016/j.jecp.2012.06.011

Sidanius, J., & Pratto, F. (1999). *Social dominance: An intergroup theory of social hierarchy and oppression*. Cambridge University Press.

Stavans, M. and Diesendruck, G. (2021), Children hold leaders primarily responsible, not entitled. *Child Development, 92*: 308-323. https://doi.org/10.1111/cdev.13420

Stevanovic, M. (2018). Social deontics: A nano- level approach to human power play. *Journal for the Theory of Social Behaviour, 48*(3), 369–389. https://doi.org/10.1111/jtsb.12175

Stockard, J., & McGee, J. (1990). Children's occupational preferences: The influence of sex and perceptions of occupational characteristics. *Journal of Vocational Behavior*, *36*(3), 287-303. https://doi.org/10.1016/0001-8791(90)90033-X

Sutherland, S. L., & Cimpian, A. (2019). Developmental evidence for a link between the inherence bias in explanation and psychological essentialism. *Journal of Experimental Child Psychology*, *177*, 265–281. https://doi.org/10.1016/j.jecp.2018.06.002

Terrizzi, B. F., Woodward, A. M., & Beier, J. S. (2020). Young children and adults associate social power with indifference to others' needs. *Journal of Experimental Child Psychology*, *198*, 104867. https://doi.org/10.1016/j.jecp.2020.104867

Thomsen, L., Frankenhuis, W. E., Ingold-Smith, M., & Carey, S. (2011). Big and mighty: preverbal infants mentally represent social dominance. *Science (New York, N.Y.)*, *331*(6016), 477–480. https://doi.org/10.1126/science.1199198

Thomsen, L. (2020). The developmental origins of social hierarchy: How infants and young children mentally represent and respond to power and status. *Current Opinion in Psychology*, *33*, 201208. https://doi.org/10.1016/j.copsyc.2019.07.044

Tomasello, M. (2020). The role of roles in uniquely human cognition and sociality. *Journal for the Theory of Social Behaviour, 50*(1), 2–19. https://doi.org/10.1111/jtsb.12223

Torul, O., & Öztunalı, O. (2018). On income and wealth inequality in Turkey. *Central Bank Review, 18*(3), 95-106. https://doi.org/10.1016/j.cbrev.2018.06.002

Tian, Y., & Bian, L. (2023). Should leaders conform? Developmental evidence from the United States and China. *Journal of Experimental Psychology. General*, 10.1037/xge0001451. Advance online publication. https://doi.org/10.1037/xge0001451

Yang, X., & Dunham, Y. (2022). Emerging complexity in children's conceptualization of the wealthy and the poor. *Developmental Science*, 25, e13225. https://doi.org/10.1111/desc.13225

Üstüner, Y., & Yavuz, N. (2018) Turkey's public administration today: An overview and appraisal. *International Journal of Public Administration, 41*(10), 820831, https://doi.org/10.1080/01900692.2017.1387147

Valle, A. (2006). *"How do you know?" Communicating ideas about science and scientific reasoning in parent- child conversations.* Unpublished doctoral dissertation, Department of Psychology, University of California, Santa Cruz, CA

Vasilyeva, N., & Lombrozo, T. (2020). Structural thinking about social categories: Evidence from formal explanations, generics, and generalization. *Cognition, 204*, 104383. https://doi.org/10.1016/j.cognition.2020.104383

Vasilyeva, N., Gopnik, A., & Lombrozo, T. (2018). The development of structural thinking about social categories. *Developmental Psychology, 54*(9), 1735–1744. https://doi.org/10.1037/dev0000555

Weisgram, E.S., Bigler, R.S. and Liben, L.S. (2010), Gender, values, and occupational interests among children, adolescents, and adults. *Child Development, 81*: 778-796. https://doi.org/10.1111/j.1467-8624.2010.01433.x

Weeks, M., & Leavitt, P. A. (2017). Using occupational titles to convey an individual's location in social stratification dimensions. *Basic and Applied Social Psychology*, *39*(6), 342-357. https://doi.org/10.1080/01973533.2017.1366321